Declassified E.O. 12356 Section 3.3/NND No. 785019

ACC 158/PWU (1 OF 2) 10000/150/461 (VOL. I)

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JULY - N

Declassified E.O. 12356 Section 3.3/NND No. 785019

10000/150/461
(VOL. I)

ELECTRICITY, CENTRAL ITALY
JULY - NOV. 1944

(1 OF 2)

ACEA - TRANSFORMER CORRESPONDENCE

TERNI - SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

188

TRASFORMATORI DA TRASPORTARE

	Pesi	
	Trasformatori Tonn.	Olio Tonn.
1) 2 Trasformatori da 20.000 KVA dell'Agea dalla sottostazione Laurentina a Galleto	x 40	20
2) 2 regolatori di tensione dell'Agea dalla sottostazione Laurentina a Galleto	x 18	6
3) 1 tresformatore Romana da 4.000 KVA da Roma a Villa Valle = Immediately-	x 16	10
4) 1 tresformatore da 30.000 KVA da Cotilia (Citta Ducale a Galleto) (see bridge)	x 90	30
5) 1 trasformatore da Antrodoco (cabina UNES) a Cotilia (Cittaducale)	x 6	5
6) 1 trasformatore da Rieti (Supertessile) a Cotilia (Cittaducale)	x 8	5
7) 1 trasformatore da 1.500 KVA da Narni (cabina SPEA) a Spoleto (cabina cementeria) Immediately.	x 7	4
8) 1 trasformatore da 1.500 KVA da Narni (cabina SPEA) a Cotilia (Cittaducale) immediately	x 8.	5
	426	

Roma, 9 Settembre 1944.

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	Coeff. form.	Form.
1) (2) Trasformatori da 20.000 KVA dell'Agea dalla sottostazione Laurentina a Galleto	x 49	20
2) 2 regolatori di tensione dell'Agea dalla sottostazione Laurentina a Galleto	x 16	6
3) 1 trasformatore Romana da 4.000 KVA da Roma a Villa Valle = Immediately-	x 16	10
4) 1 trasformatore da 38.000 KVA da Cotilia (Citta Ducale a Galleto) (see bridge)	x 90	30
5) 1 trasformatore da Antrodoco (cabina UNES) a Cotilia (Cittaducale) 20 apt	x 8	5
6) 1 trasformatore da Rieti (Supertensile) a Cotilia (Cittaducale) 20 apt	x 8	5
7) 1 trasformatore da 1.500 KVA da Narni (cabina SFEA) a Spoleto (cabina cementeria) Immediately.	x 7	4
8) 1 trasformatore da 1.500 KVA da Narni (cabina SFEA) a Cotilia (Cittaducale) immediately	x 8.	5
	426	

Roma, 9 Settembre 1944.

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A.C.E.A.
SERVIZIO V - COSTRUZIONI

ACEA - TRASFORMER CORRESPONDENCE

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NOTE CIRCA IL TRASPORTO DI DUE TRASFORMATORI C.G.E. DA 20.000 kVA
DALLA SOTTOSTAZIONE LAURENTINA

Premessa -

I due trasformatori C.G.E. 60/30/8,4 kV da 20.000 kVA si trovano alla Sottostazione Laurentina sita sulla Via Laurentina angolo Via del Fenilone.

I trasformatori sono attualmente depositati su binario di tipo ferroviario e intercalati con altri trasformatori in deposito.

I trasformatori in oggetto sono montati nei loro cassoni completi di radiatori: non sono invece montati e trovansi dislocati parte alla Sottostazione stessa e parte altrove, i passanti di alta e media tensione, i ventilatori e gli altri accessori; i trasformatori sono privi di olio.

Per ragioni di sagoma ferroviaria i trasformatori sono stati a suo tempo spediti dal costruttore senza alcune connessioni che si sarebbero protese esternamente oltre i liciti ammissibili: essi sono tuttora privi di dette connessioni, il cui montaggio richiede la completa estrazione del nucleo dal cassone.

Il cassone stesso consta di due parti, inferiore e superiore ora montate insieme e chiuse col relativo coperchio.

Per le operazioni di trasporto occorre considerare quanto segue:

425

1°) Circa la predisposizione delle macchine al trasporto:

- smontaggio dei radiatori, smontaggio della parte superiore del cassone (onde ridurre l'altezza del pezzo principale, attualmente incompatibile con le sagome limiti anche stradali) copertura provvisoria, ma perfettamente efficiente

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Premesse -

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I trasformatori in oggetto sono montati nei loro cassoni completi di radiatori: non sono invece montati e trovansi dislocati parte alla Sottostazione stessa e parte altrove, i passanti di alta e media tensione, i ventilatori e gli altri accessori; i trasformatori sono privi di olio.

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Per le operazioni di trasporto occorre considerare quanto segue:

425

1°) Circa la predisposizione delle macchine al trasporto:

- smontaggio dei radiatori, smontaggio della parte superiore del cassone (onde ridurre l'altezza del pezzo principale, attualmente incompatibile con le sagome limiti anche stradali) copertura provvisoria, ma perfettamente efficiente contro la pioggia da eseguirsi con legname e copertoni impermeabili tipo ferroviario, sostenuta da adatte impalcature.

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- Manovre dei quattro trasformatori sui predisposti binari onde poter sistemare i due trasformatori C.G.E. sul tratto estremo più favorevole al carico sui mezzi di trasporto.

2°) Circa i mezzi di trasporto stradale:

Occorre un carro speciale con piano di carico il più basso possibile (circa 40 cm. dal piano stradale) ed avente una portata utile di circa 50 Tonn. peso approssimativo del trasformatore in condizioni di trasporto (nucleo e parte inferiore del cassone senza radiatori nè carrelli, e senza olio dielettrico). Il carro dovrà realizzare una buona ripartizione del peso sulla superficie stradale. Il carro speciale con il quale è stato effettuato il trasporto dei trasformatori sul luogo era munito di 24 ruote pneumatiche di notevole diametro e larghezza, gonfiate a circa 2,5 atm., era munito di timone con volta corretta, e di freni pneumatici sulle ruote anteriori e posteriori.

Per il traino occorsero, date le notevoli salite da superare, tre motrici di autotreno; nelle discese una delle motrici era prudenzialmente agganciata dietro il carro per limitarne in ogni evenienza la velocità.

3°) Circa le operazioni di carico del trasformatore sul carro speciale:

Consigliabile che il carro sia disposto perpendicolarmente alla testata del binario e cioè col suo asse parallelo all'asse maggiore del trasformatore. Il trasformatore previo smontaggio delle ruote, e sollevamenti con mezzi ordinari (binde, martinetti ecc.) può allora scorrere su rulli parallelamente a sè stesso fino al piano di carico del carro.

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4°) Circa il percorso da effettuare per recarsi dalla Sottostazione Laurentina alla Via Ostiense dinanzi alla Centrale Montecertini:

Internamente alla Sottostazione vi è una strada larga 3 m. e lunga circa ml.100; per recarsi alcune speciale avvertenze trac

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Occorre un carro speciale con piano di carico il più basso possibile (circa 40 cm. dal piano stradale) ed avente una portata utile di circa 50 Tonn. peso approssimativo del trasformatore in condizioni di trasporto (nucleo e parte inferiore del cassone senza radiatori nè carrelli, e senza olio dielettrico). Il carro dovrà realizzare una buona ripartizione del peso sulla superficie stradale. Il carro speciale con il quale è stato effettuato il trasporto dei trasformatori sul luogo era munito di 24 ruote pneumatiche di notevole diametro e larghezza, gonfiate a circa 2,5 atm., era munito di timone con volta corretta, e di freni pneumatici sulle ruote anteriori e posteriori.

Per il traino occorsero, date le notevoli salite da superare, tre motrici di autotreno; nelle discese una delle motrici era prudenzialmente agganciata dietro il carro per limitarne in ogni evenienza la velocità.

3°) Circa le operazioni di carico del trasformatore sul carro speciale:

Consigliabile che il carro sia diposto perpendicolarmente alla testata del binario e cioè col suo asse parallelo all'asse maggiore del trasformatore. Il trasformatore previo smontaggio delle ruote, e sollevamenti con mezzi ordinari (binde, martinetti ecc.) può allora scorrere su rulli parallelamente a sè stesso fino al piano di carico del carro.

424

4°) Circa il percorso da effettuare per recarsi dalla Sottostazione Laurentina alla Via Ostiense dinazi alla Centrale Montemartini:

Internamente alla Sottostazione vi è una strada larga 3 m. e lunga circa ml.100: non occorre alcuna speciale avvertenza tranne quella di tenerai in centro alla strada.

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La strada suddetta sbocca su Via del Fenilone; questa è da percorrere per una lunghezza di circa m.80: non occorre alcuna avvertenza particolare.

Segue la Via Laurentina per una lunghezza di circa Km.3,3: a circa m.125 da Via del Fenilone si ha un ponticello sul fosso della Cecchignola (Ponte Buttero) che risulta già lesionato e non molto robusto; è consigliabile transitare con precauzione sul ponticello stesso, tenendo la sinistra.

La Via Laurentina sbocca sulla vecchia Via Ostiense in prossimità di un cavalcavia ferroviario che occorre oltrepassare e la cui altezza netta in chieve è di m.4,74.

Segue un tratto della Via Ostiense fino alla Centrale Montemartini con lunghezza di circa Km. 1,65, che non richiede nessuna avvertenza particolare.

5°) Circa l'ulteriore percorso ferroviario o stradale:

Se i trasformatori saranno trasportati per ferrovia è necessario farli sostare entro la Centrale Montemartini nella quale esiste binario di raccordo con le FF.SS. e gru a portale da 30 Tonn. mediante la quale con speciali accorgimenti, è possibile trasferire il trasformatore dal carro stradale al carro ferroviario. Quest'ultimo dovrà essere di tipo speciale molto ribassato.

Se invece il trasporto dovrà essere effettuato su strada ordinaria è da tenere presente un ulteriore tratto della Via Ostiense sul quale si ha un cavalcavia ferroviario a tre campate con altezza libera di massima di m.4,74 nella campata sinistra.

Una disposizione del trasformatore sul carro ferroviario a suo tempo studiata dalla C.G.E. risulta dal disegno ACEA n.3178 allegato.

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Pesi e dimensioni d'ingombro delle varie parti risultano dal disegno ACEA n.3177 già in Vostre mani.

Come risulta dal citato disegno C.G.E. l'altezza d'ingom-

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a circa m.125 da Via del Fenilone si ha un ponticello sul fosso della Cecchignola (Ponte Buttero) che risulta già lesionato e non molto robusto; è consigliabile transitare con precauzione sul ponticello stesso, tenendo la sinistra.

La Via Laurentina sbocca sulla vecchia Via Ostiense in prossimità di un cavalcavia ferroviario che occorre oltrepassare e la cui altezza netta in chiave è di m.4,74.

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5°) Circa l'ulteriore percorso ferroviario o stradale:

Se i trasformatori saranno trasportati per ferrovia è necessario farli sostare entro la Centrale Montemartini nella quale esiste binario di raccordo con le FF.SS. e gru a portale da 30 Tonn. mediante la quale con speciali accorgimenti, è possibile trasferire il trasformatore dal carro stradale al carro ferroviario. Questo dovrà essere di tipo speciale molto ribassato.

Se invece il trasporto dovrà essere effettuato su strada ordinaria è da tenere presente un ulteriore tratto della Via ostiense sul quale si ha un cavalcavia ferroviario a tre campate con altezza libera di massima di m.4,74 nella campata sinistra.

Una disposizione del trasformatore sul carro ferroviario a suo tempo studiata dalla C.G.E. risulta dal disegno ACEA n.3179 allegato.

423

Pesi e dimensioni d'ingombro delle varie parti risultano dal disegno ACEA n.3177 già in Vostre mani.

Come risulta dal citato disegno C.G.E. l'altezza d'ingombro

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ALCEA - TRANSFORMER CORE - SPECIFICS 8

Governmental Management
Electricity & Waters

Rome Aug. 18/44

186

To the A.C.C. Public Works & Utilities
Sub-Commission - Rome
Maj. Renton

a) Registered letter
by hand.
Prot. 4927

We transmit, as requested, notes referring to the transport of two C.G.E. 20.0000 K.V.A. transformers from Sub-station Laurentina to Power-Station Montemartini.

Enclosures:3

The Manager
signed: Bondoni

A.C.E.A.
V SERVICE. CONSTRUCTIONS

b) NOTES ABOUT THE TRANSPORT OF TWO TRANSFORMERS C.G.E. of 20.000KVA from Substation Laurentina

The two C.G.E. 60/30/8,4 KV. of 20.000 KVA are deposited at the Sub-Station Laurentina situated on the via Laurentina corner with Via del Fenilone

The transformers are actually placed on a railway track and intercalated with other transformers.

Those transformers are settled in their casing complete of radiators, but they are without oil. High and medium voltage entrance conductors, ventilators and other auxiliary parts, are not assembled and are partly in the Sub-station itself and partly elsewhere.

Owing to the rail-gauge the transformers have been forwarded at duly time, by the constructor, without any connection because these would have extended beyond admissible limits: they are still without aforesaid connections the assembling of which would require the complete extraction of the core from the casing.

The case itself consists of two parts, upper and lower now assembled together and closed with relative lid. 421

For transport operation following questions must be considered:

a) CONCERNING ARRANGEMENTS OF THE MACHINERY FOR TRANSPORT

Disassembling of radiators, disassembling of upper part of the case (to reduce the hight of the main part at the present

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signed: Bonfoni

A.C.E.A.
V SERVICE. CONSTRUCTIONS

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The case itself consists of two parts, upper and lower now assembled together and closed with relative lid. 421

For transport operation following questions must be considered:

c) CONCERNING ARRANGEMENTS OF THE MACHINERY FOR TRANSPORT

Dissembling of radiators, dissembling of upper part of the case (in order to reduce the hight of the main part at the present incompatible with gauge and road limits.

Emergency wood and watertight railway-typer covering, supported by suitable superstructures are rainproof.

Maneuvering of the four transformers on the prepared rails, in order to place the two transformer C.G.E. on the most suitable railroad section

2) Concerning MEANS OF ROADTRANSPORT:

A special truck is necessary- with a loading platform as low as possible (about 40 cm. above ground level, with 50 Tons loading capacity, which is the aproximative transformer's weight -ready for transport- not containing core and lower part of casing without radiator, nor [illegible] and without transformer oil.

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Roma, addì 7 agosto 1944 XXII

Ministero dei Lavori Pubblici

ISPETTORATO GENERALE ELETTRICITA'
GAS ACQUA DELL'ITALIA CENTRALE
N. 075

All'Ill.mo Sig. Ten. Colonnello
W. M. L A P P E R
Capo Divisione Pubblici Servizi
e Amministrazione
Commissione Alleata di Controllo
APO 394

R O M A
Via Veneto

Risposta a nota del

OGGETTO: Società Terni - Riparazione del V gruppo Velino (ad asse verticale) in Centrale Papigno.

In relazione al desiderio espresso da V.S.Ill.ma di avere cioè informazioni sulle riparazioni del gruppo V Velino nella Centrale di Papigno, in seguito ad accertamenti eseguiti pregiomi rappresentare quanto appresso:

Si premette che:

I danni subiti dalla Turbina risultano di poca entità.

Per quanto riguarda i danni subiti dall'alternatore si fa presente che:

a) è distrutta una metà della lanterna;

b) le scheggie risultanti dalla distruzione della lanterna hanno in più punti profondamente intaccato il pacco lamellare;

c) è danneggiata la crociera superiore;

d) è distrutto circa un sesto dell'avvolgimento statorico;

e) esistono dubbi sulla rettilineità dell'albero dell'alternatore.

Detta verifica dell'albero non si può fare in posto nella stessa maniera con cui si è proceduto per i gruppi 1 Calleto perchè, essendo distrutta la lanterna, non si può fare girare l'albero in posizione verticale. Pertanto prima di

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procedere alla verifica dell'albero, oltre a riparare la grue che occorre per la estrazione del rotore stesso, bisogna preparare adatti appoggi per il controllo dell'albero in posizione orizzontale. Il tempo occorrente per effettuare questa operazione è di una quarantina di giorni.

Nel caso fortunato che l'albero risultasse rettilineo, il tempo occorrente per il ripristino dell'alternatore è da valutarsi in circa un anno, ossia è di gran lunga maggiore di quello occorrente per i gruppi di Galleto. Anche come entità di lavoro da parte della Acciaieria è maggiore quello inerente al ripristino del V gruppo Velino anzichè quello riguardante un gruppo Galleto.

Si fanno altresì le seguenti considerazioni:

1) Rimettendo in servizio tutti e quattro i gruppi Galleto viene ad essere utilizzata tutta l'acqua disponibile. Pertanto la rimessa in servizio del V Velino non aumenterebbe la produzione dei kWh ma solo la potenza disponibile.
2) Mentre la Società Terni ha trovato i trasformatori 10/70kV oppure 10/120 kV necessari, per trasformare l'energia dei gruppi di Galleto non ha trovato un trasformatore 60/70kV necessario per il gruppo V Velino.

   Inoltre per la sua sistemazione bisognerebbe riattare anche la cabina 120 kV, il che è un lavoro di notevole mole.
3) L'Acciaieria di Terni con le ordinazioni riguardanti gli impianti di Larderello, Farfa, Ceprano, Tivoli ecc. si vede già costretta a dilazionare le consegne riguardanti i gruppi n. 2 e 4 di Galleto. Se pertanto l'Acciaieria

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dovesse provvedere anche al notevole lavoro del V Gruppo Velino ciò sarebbe a scapito delle lavorazioni riguardanti Galleto, e questo evidentemente è da evitare.

Per le suesposte considerazioni si propone di procedere al ripristino del V gruppo Velino dopo che siano stati rimessi in efficienza tutti e quattro i gruppi Galleto, per i quali il lavoro si presenta più facile e più rapido.

Viceversa riterrei opportuno che si confermasse all'Acciaieria di Terni che la precedenza assoluta dei lavori debba essere mantenuta per la riparazione di tutti e quattro i gruppi di Galleto.

L'ISPETTORE GENERALE DEL GENIO CIVILE

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Translation

MINISTRY OF PUBLIC WORKS
General Inspectorate of
Central Italy for Gas
Water and Electricity

No. 075

To Lt.Col.W.M. LAPPER
Chief ed Division of Public Works
and Administration
A.C.C.

AMG 354

Rome

Subject

Repairs of the V Velino Unit
(vertical axle) Papigno
Power Station

In compliance with your desire to let you know about the repair of the V unit Velino of Papigno Plant I made the necessary inquiries and beg to inform you about their result:

Stating beforehand that:

The damages suffered by the turbine are not considerable.

For what regards the damages of the alternator it should be borne in mond that:

A) half of the casing is destroyed.

B) the splinters of the casing have deeply indented the laminations.

C) the upper support is damaged. 418

D)the straightness of the alternator is doubtful 419

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We cannot proceed on the place to the revision of the shaft, as we did for the Galleto Units, because the casing being destroyed, it is not possible to make the shaft turn in vertical position. Therefore before proceeding to the revision of the shaft, it is necessary to repair first the crane which is required for the extraction of the rotor itself and to prepare suitable supports for the control of the shaft in horizontal position . 40 days are necessary for this work.

If the shaft should result to be ,happily, straight, a year would be necessary in order to rehabilitate the alternator . This would be much more than to time required for the repair of the Galeto Units. Rehabilitation works for the V Unit Velino would procure much more work to the Steelworks than the repairs of Galleto.

Following matters must also be considered.

1) By putting into service all 4 Units of Galeto the whole of the available water will be used. In consequence the retaking of the V Velino Units would not increase the KW production but only the available power.

2) Whilst Firm Terni has succeeded in obtaining the 10/70 KV transformer , said Firm cannot provide the 60/70 KV transformer required for for the V Velino Unit.

Moreover , for its systemization it would also be necessary to re-establish the 120 KV cabin, which would be a task of considerable importance

3) The Terni Firm is already obliged to delay the deliveries concerning the plants of Larderello, Farfa, Ceprano, Tivoliete

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If therefore the Steelworks had to provide also for the considerable works of repair for V Velino Unit this would be to the detriment of the works concerning Galleto , which is certainly a thing to be avoided.

Considering the above- mentioned reasons , we propose to proceed to the repair of the V Velino Unit only after having put again in operation the 4 Galleto Units- the last work being easier and quicker done.

On the other hand, I would consider it advisable to confirm to the Terni Steelworks the order of repair of the 4 Galleto Units which are to have absolutely priority.

The Inspector General of Genio Civile

signed:CRICO

11 AUG Recd
158 Cas.

Indirizzo telegrafico: ACEA - ROMA
Telefoni della Stazione: 43 543 - 43 544
Conto Corrente Postale: 1/2902

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AZIENDA GOVERNATORIALE
AZIENDA COMUNALE
ELETTRICITÀ ED ACQUE
ELETTRICITÀ ed ACQUE

Roma (103), 10 Agosto 1944 ANNO XXII
VIA MILANO, 62

Egr. Ing. ERRERA,

in relazione alla conversazione telefonica di stamane, le invio l'unito prospetto, corredato dei relativi schizzi.

Sono a Sua disposizione per ulteriori ragguagli.

Distinti saluti.

(Ing. Pietro Parvopassu)

Parvopassu

Dr Cl Rapeu
Roma 11/8

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Egr. Ing. ERRERA,

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Distinti saluti.

(Ing. Pietro Parvopassu)

Dr Col Rappa

11/1

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ACEA - TRANSFORMER CORRESPONDENCE

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ACEA TRANSFORMER CORRESPONDENCE

PROSPETTO DIMENSIONI E PESI DELLE VARIE PARTI
DEI TRASFORMATORI C.G.E. 20.000 kVA 150/60/8 kV
DELLA A.C.E.A.

Pos.		N.	Dimensioni	Peso Kg.	
1	Cassa p. superiore	1	4.975x1.590 x2.200	3.500	3½
2	Cassa p. inferiore	1	5.700x3.110 x2.200	7.000	
3	Conservatore	1	3.700x1.250 x1.070	620	¾
4	Carrello	4	1.070 x 515 x 330	560	½
5	Nucleo	1	4.000x3.500 x1.850	12.000	
6	Coperchio	1	4.850x2.000	2.100	2
7	Radiatore	18	4.270x1.000 x 290	420	½
8	Ventilatori	1	1.150x1.350 x1.220	450	½
9	Condotta d'aria	1	1.350 x 850 x 450	80	
10	Isolatori AT		Ø 550 lungh. 3.000	450	½

8¼

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Pos.		N.	Dimensioni	Peso Kg.	
1	Cassa p. superiore	1	4.975x1.590 x2.200	3.500	3½
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3	Conservatore	1	3.700x1.250 x1.070	620	¾
4	Carrello	4	1.070 x 515 x 330	560	½
5	Nucleo	1	4.000x3.500 x1.850	42.000	
6	Coperchio	1	4.850x2.000	2.100	2
7	Radiatore	18	4.270x1.000 x 290	420	½
8	Ventilatori	1	1.180x1.350 x1.220	450	½
9	Condotta d'aria	1	1.350 x 850 x 450	80	
10	Isolatori AT		ø 650 lungh. 3.000	450	½

8¼

415

2

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session· As it results by dito -the height of required space of the main piece (core between the lower part of the case) that is to transported, results to be of m. 3.45 and its weight of about 50 Tons.

The lenght of road to be covered till Power Station Montemartini is indicated in red on the eclosed groundplan.

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A satisfactory load distribution,as to the road surface,is required for this special truck. The special car with which trans port on the place has been accomplished , was equipped with 24 pneumatic wheels of sufficient diameter and width -inflated at about 2.5 atm. and provided with a special steerable Bogie permitting turns andreduced spoke, and with pneumatic brakes on front and back wheels.

Owing to the heavy grades to be met three tractor cars (of motor trains sets) were necessary for the hauling.During descents, one of the tractors was continually hooked behind as a measure of caution in order to limitate the speed.

3) Concerning: THE LOADING OF THE TRANSFORMER ON SPECIAL TRUCK.

It is advisable that the trucks should be placed perpendicularly to the rail and more exactly wit its axle parallel to the transfor= mers' main axle. After previously dissembling of the wheels and upliftting by ordinary means(screw-jack and hoist) the transformer will be able to glide with parallel motion upon rollers till the loading level of the truck.

4) Concerning:THE DISTANCE TO BE COVERED IN ORDER TO GET FROM LAURENTINA STATION IN FRONT OF POWER STATION MONTEMARTINI.

Inside the Sub-station there is a roas of 3 m width and lm. 300 lenght. There is no need of any special caution except that of keeping in the middle of the way. The abovementioned road leads to via del Fenilone that must be followed for a lenght of m.80 No particular care is needed.

Follows Via Laurentina with a lenght of about Km. 3.3. About m m125 from via del Fenilone there is a bridge across the Cecchignola ditch(Ponte Buttero) which is already damaged and is not resistent enough. It is advisable to cross over this bridge keeping left hand.

Via Laurentina leads to ancient via Ostiense near to ancient Via Ostiense near to railway crossing which must besur= passed and whose maximum height is of m.4,74.

Follows a section of via Ostiensentill Power Station Montemartini -I.65 km. long that does not requires special pru= dence.

5) Concerning:THE FINAL RAIL OR ROADWAY:

If the transformer has to be transported by rail it is

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It is advisable that the trucks should be placed perpendicularly to the rail and more exactly wit its axle parallel to the transformers' main axle. After previously dissembling of the wheels and uplifting by ordinary means(screw-jack and hoist) the transformer will be able to glide with parallel motion upon rollers till the loading level of the truck.

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Via Laurentina leads to ancient via Ostiense near to ancient Via Ostiense near to railway crossing which must besurpassed and whose maximum height is of m.4,74.

Follows a section of via Ostiensetill Power Station Montemartini -I.65 km. long that does not require special prudence.

5) Concerning:THE FINAL RAIL OR ROADWAY:

If the transformer has to be transported by rail it is necessary to stop between Power Station Montemartini where there is a junction with the State Railway and a crane of 30 Tons capacity -by means of which, with special care, it is possible to transfer the transformer from the road truck to a railway waggon. This ought to be of a special very reduced hight

If instead transport will be affected on or ordinary road , it must be borne in mind that there is a further section on via Ostiense over which there is a railway over-bridge of three span with a maximum of free hight of m. 4.74 in the left hand span.

Enclosed design Nr. 3179 studied at duly time by the C.G.E shows how transformer should be placed on railway car. Weight and required space of the various pieces result from aforesaid design. ACEA N.3177 already in your pos-

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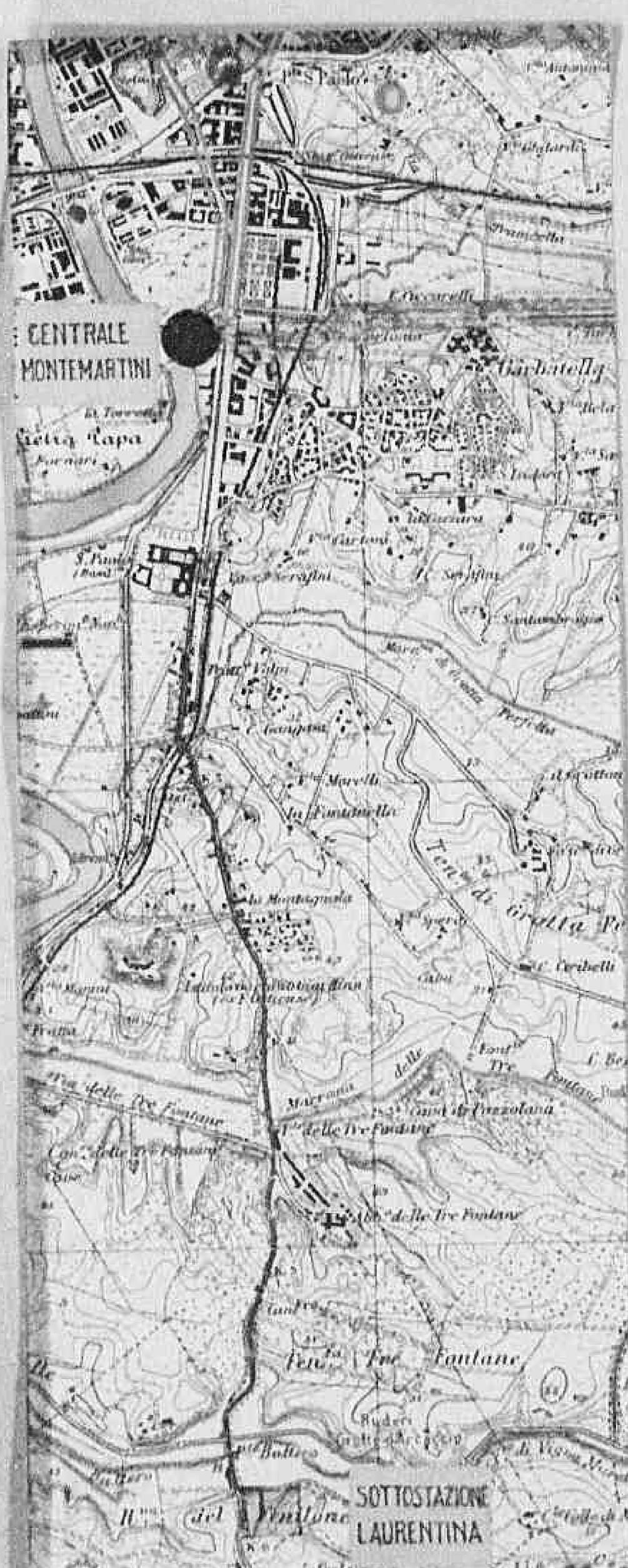
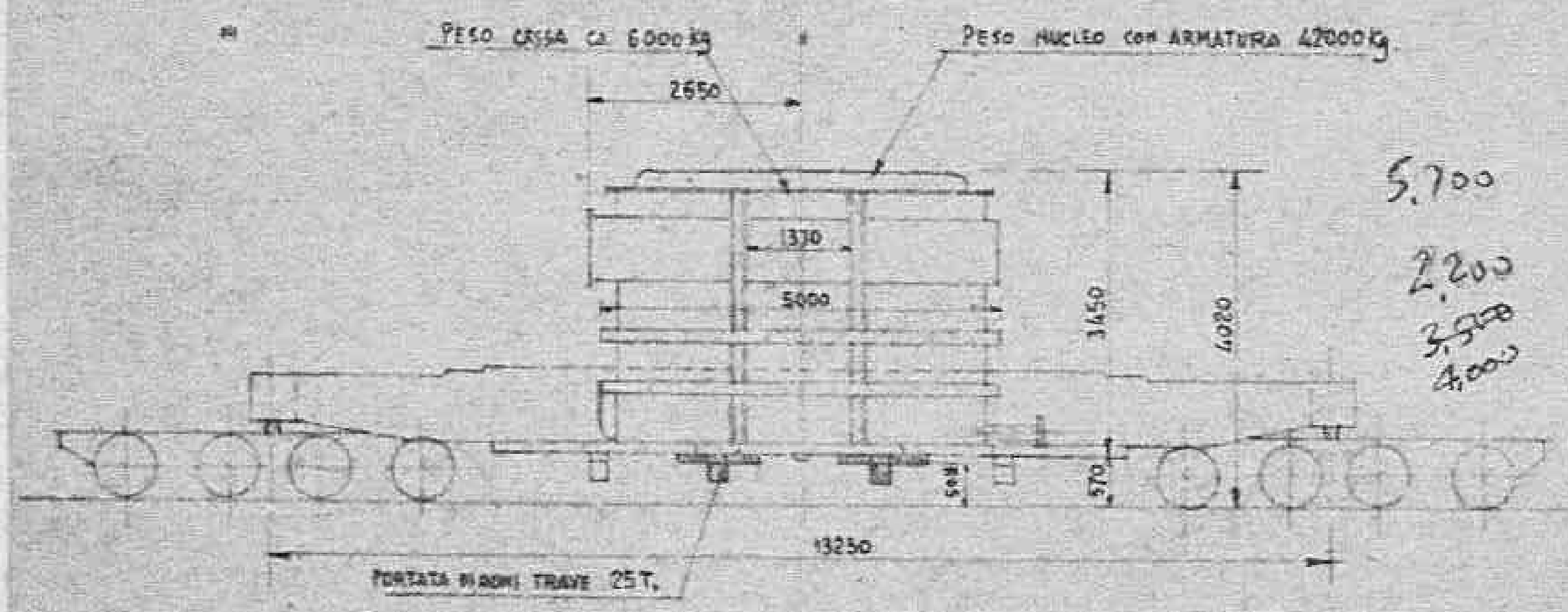
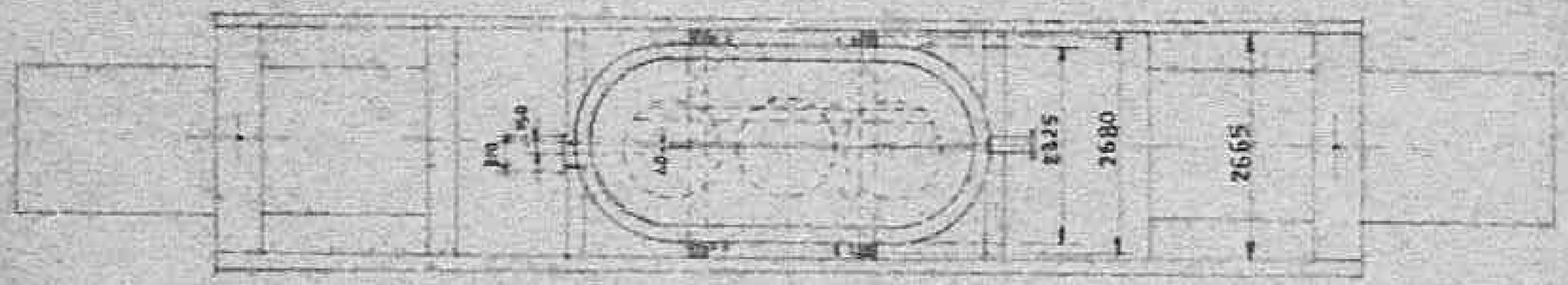


ACEA - TRANSFORMER CORRESPONDENCE

PESO TOTALE DEL CARICO ca 49000 Kg.



5.700
2.200
3.950
4.000



Dimension of 150/60/6kv Transformer.

2 - Brown Boveri - 3.87 meters. high } x 5.7 meters long
2 - —— —— - 3.79 meters high } x 2.2 meters wide

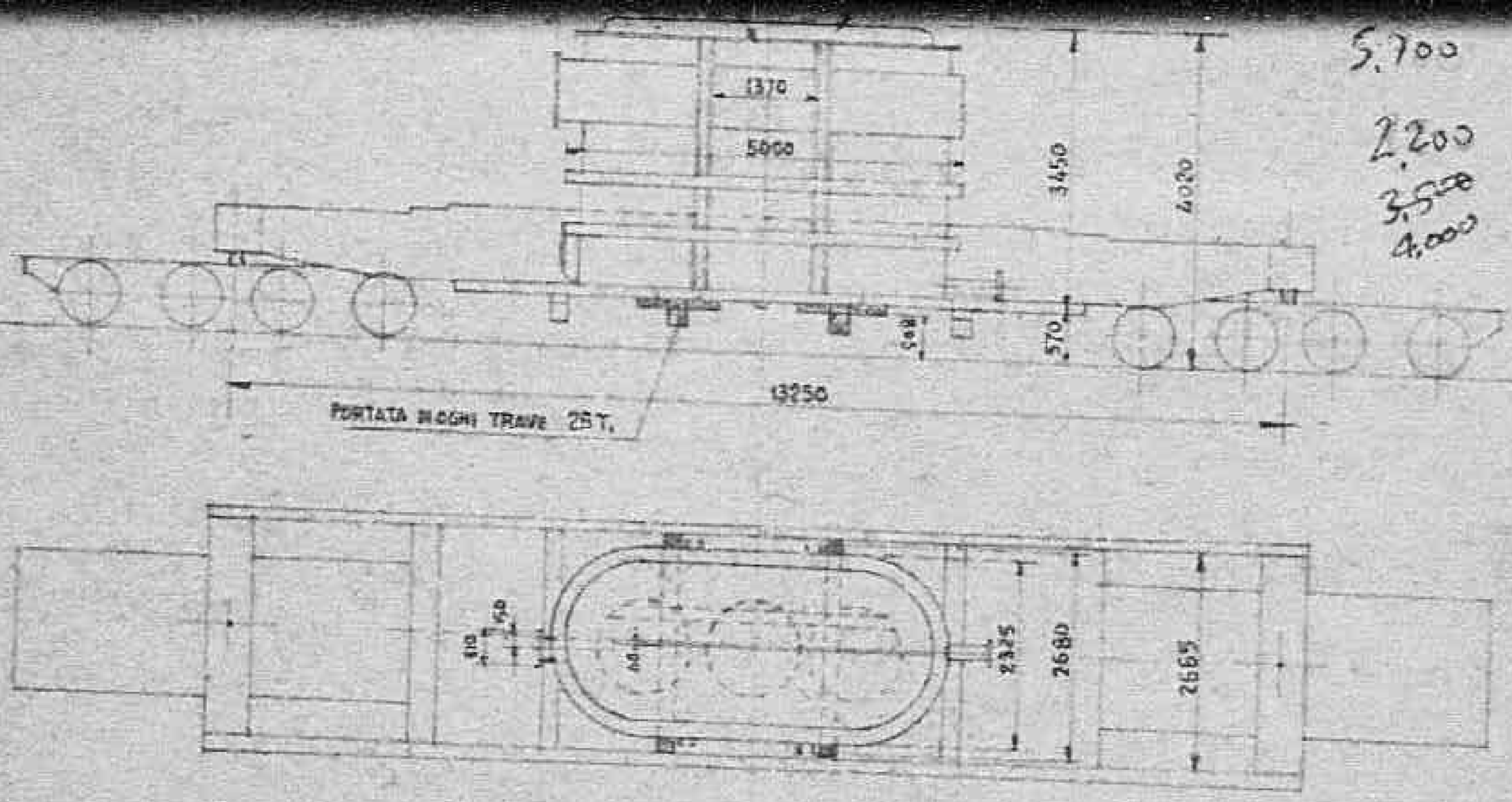
4

AZIENDA COMUNALE
ELETTRICITA' ED ACQUE

DIS. N° 3179
DATA 16-8-1944

TRASFORMATORE C.G.E. KVA 150/60/8 kv
TRASPORTO SU CARRO FERROVIARIO P. 412 97500 ÷ 502

Declassified E.O. 12356 Section 3.3/NND No. 785019



5.700
2.200
3.500
4.000

Dimension of 150/60/6KV Transformer.

2- Brown Boveri - 3.87 meters high } x 5.7 meters long
2- ____ ____ - 3.79 meters high } x 2.2 meters wide

11

AZIENDA COMUNALE ELETTRICITA' ED ACQUE

DIS. N° 3179
DATA 16-8-1944

TRASFORMATORE C.G.E. KVA 150/60/8 KV
TRASPORTO SU CARRO FERROVIARIO P 412 97500 ÷ 502
DELLA PARTE INFERIORE DELLA CASSA - NUCLEO E ARMATURA
(DA DIS. C.G.E. STR. 1489 - REGISTRO ACEA DIS. DITTE N. 5285

MINUTA	
LUCIDO	
VISTO	

IL CAPO SERVIZIO

MODIFICA	DATA	FIRMA

Declassified E.O. 12356 Section 3.3/NND No. 785019

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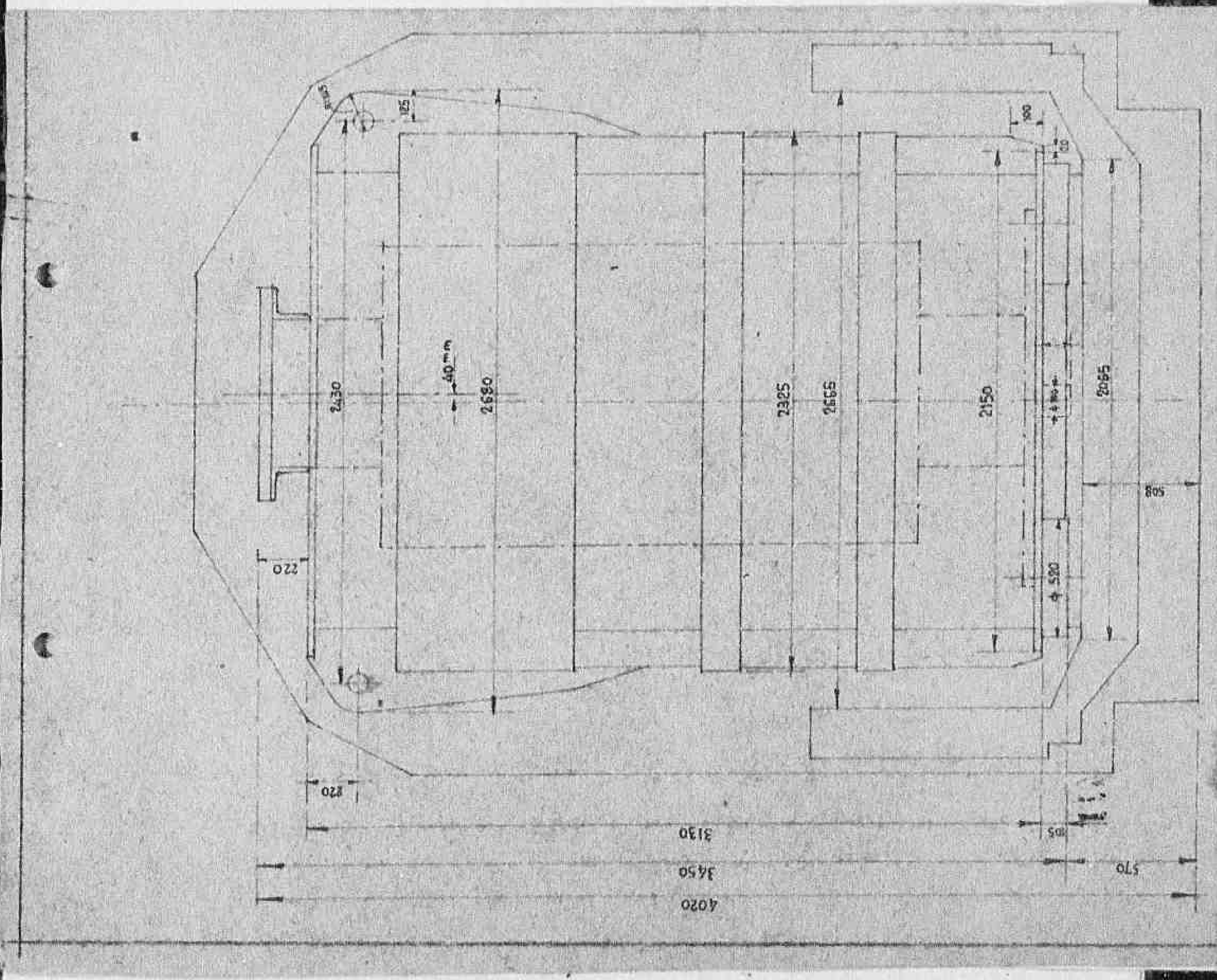
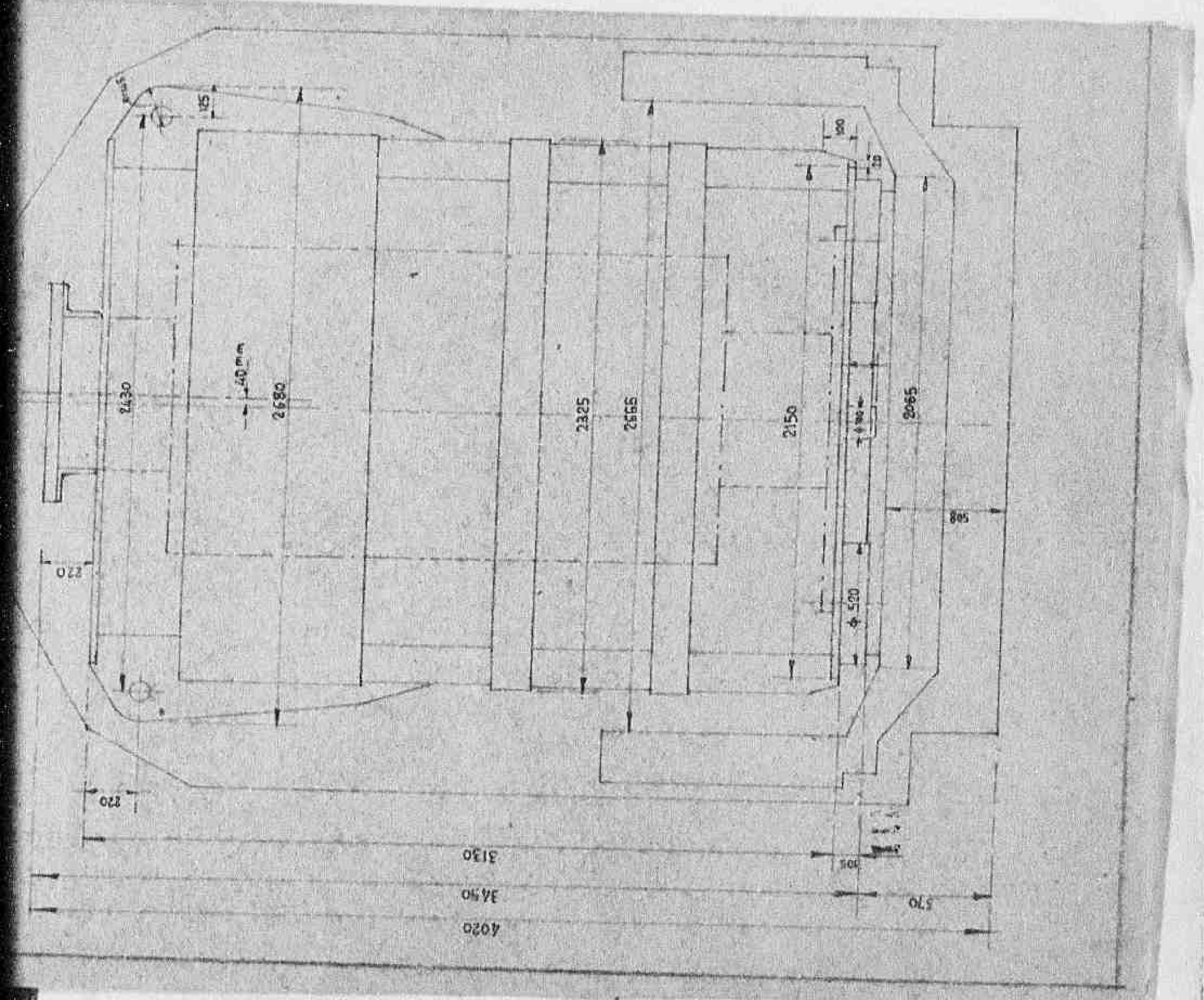


Declassified E.O. 12356 Section 3.3/NND No. 785019



Declassified E.O. 12356 Section 3.3/NND No. 785019

ACEA - TRANSFORMER CORRESPONDENCE

21 AUG Recd

158 Corp.

Indirizzo Telegrafico: AGEA - ROMA
Telefoni dello Stato: 43 543 - 43 544
Conto Corrente Postale: 1/2902

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AZIENDA GOVERNATORIALE
ELETTRICITÀ ED ACQUE

Roma (103),
VIA MILANO, 62

18 AGO 1944

ANNO XX

Prot. N. 4927
(da citare nella Risposta)

Citare nella risposta
SERVIZIO V

COMMISSIONE MILITARE ALLEATA
Sottocommissione Servizi Pubblici
Magg. Renton

R O M A

Raccomandata a mano

Si trasmettono, come richiesto, le note riguardanti il trasporto di due trasformatori C.G.E. da 20.000 kVA dalla Sottostazione Laurentina alla Centrale Montemartini.

IL DIRETTORE
Bruno

Allegati: N. 3 -

411
5

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STATO MAGGIORE GENERALE
S.I.M

n. 225 2/4/ di prot. P.M. 135 17 agosto 1944

OGGETTO: Soc."VALDARNO" - Firenze.

ALL' A. C. C. - PPUBLIC WORKS
Water - Electricity

In relazione a quanto promesso al col. LAPPER si unisce una relazione sulla Soc."Valdarno" al 18 agosto c.m.

Più recenti informazioni permettono di prospettare la situazione della "Valdarno" nei seguenti termini:

1) - L'alimentazione su cui si può far sicuramente conto è per ora soltanto quella proveniente da Nera Montoro - Centrale di proprietà della Soc."Valdarno".

2) - La linea a 60 KV è a doppia terna Nera Montoro-Chiusi-Castelnuovo dei Sabbioni è già stata riparata dalle squadre della "Valdarno" per una terna nel tratto Nera Montoro-Chiusi ed è in corso il lavoro di ripristino per una terna nel tratto Chiusi-Castelnuovo da parte delle squadre "Valdarno" e di quelle del Genio Alleato.

3) - Nella Centrale di Castelnuovo completamente distrutta dai tedeschi la "Valdarno" può mettere in servizio un trasformatore da 12.000 KVA che è stato in precedenza nascosto. Il rapporto è 60/35 KV.

4) - La linea a 35 KV a doppia terna da Castelnuovo a Ema (3 km.da Firenze) ha avuto notevoli danni. In particolare su n° 205 pali a traliccio (ferro) ne sono stati abbattuti n° 70 circa. La Soc. "Valdarno" ha pronti operai e materiali per la riparazione ed ha già provveduto per il primo tratto Ema-Tavarnuzze.

5) - Nella cabina dell'Ema è in corso di installazione un trasfor-

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Declassified E.O. 12356 Section 3.3/NND No. 785019

OGGETTO: Soc."VALDARNO" - FIRENZE.

ALL' A. C. C. - PPUBLIC WORKS
Water - Electricity

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4) - La linea a 35 KV a doppia terna da Castelnuovo a Ema (3 km.da Firenze) ha avuto notevoli danni. In particolare su n° 205 pali a traliccio (ferro) ne sono stati abbattuti n° 70 circa. La Soc. "Valdarno" ha pronti operai e materiali per la riparazione ed ha già provveduto per il primo tratto Ema-Tavarnuzze.

5) - Nella cabina dell'Ema è in corso di installazione un trasformatore da 4000 KVA che la "Valdarno" aveva pure nascosto. Il rapporto è 35/10 KV.

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6) - La linea a 10 KV da Ema a Firenze (cabina di Monte alle Croci) è già stata riparata - in modo che sarebbe così possibile alimentare al più presto da detta cabina il servizio dell'Acqua potabile ed altri servizi urbani.

7) - In un secondo tempo con altri 2 trasformatori da 6000 KVA che sono stati nascosti - con rapporto 35/10 KV - riparando anche i brevi tronchi di linea di collegamento sarà possibile arrivare con il 35 KV fino alle cabine di Firenze (Monte alle Croci e Varlungo).

8) - Per l'eventuale disponibilità di energia da Larderello occorre rimettere in efficienza la linea a 35 KV da Siena a Castelnuovo dei Sabbioni il cui stato non è ancora accertato.

9) - Per attuare questo primo programma per l'alimentazione di Firenze, la "Valdarno" ha già iniziato tutti quei lavori che sono stati possibili realizzare con i mezzi a disposizione.
La "Valdarno" ha però incontrato difficoltà specialmente per quanto riguarda permessi di circolazione e trasporti materiali.
Le necessità attuali sarebbero:

a) - Concessione maggior numero permessi circolazione per operai e tecnici. Sinora ne sono stati concessi solo n.15 che sono insufficienti per un lavoro rapido ed efficiente.

b) - Concessione di permesso di circolazione per n°3 automezzi esistenti presso la Società e presso le Società affiliate.

c) - Concessione rifornimento carburante e lubrificante per detti automezzi.

d) - Assegnazione in uso - se possibile - di almeno due autocarri per trasporto pali e materiali lungo le linee.

Per la sistemazione delle linee di distribuzione la "Valdarno" dovrebbe ritirare dalla zona del M.Amiata n.400 pali in legno (lunghezza 10/12 m.).
L'autocarro per il trasporto pali dovrebbe essere adatto a tali lunghezze.

10) - Per l'essicamento dell'olio dei trasformatori e la sicurezza del servizio sarebbe molto utile poter disporre di un gruppo elettrogeno per l'alimentazione elettrica delle scalidiglie.

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La Soc. "Valdarno" sarebbe grata all'A.C.C. se istruzioni fossero inviate all'A.M.G. di Firenze intese a facilitare il compito della Società nell'opera di ripristino dei servizi elettrici della Città.

d'ordine
IL COLONNELLO CAPO SERVIZIO
(Pompeo Agrifoglio)

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Declassified E.O. 12356 Section 3.3/NND No. 785019

W. P. 135 C.C.P. Public Works

n-223 2/#1 of post.

To A.C.P. Public Works
Water - Electricity

Subject: "Valdarno" Co. Florence

at Col. Lapper's

request we enclose the report on the "Valdarno" Co. up to date August 18th instant

More recent information allowed us to state the situation of the "Valdarno" Co in the following terms.

1) The only sure feeding for more than one consumer from there is the one coming from the power plant belonging the "Valdarno" Co.

2) The line at 60 KV in double tension between Arezzo - Chiusi - Castelnuovo dei Sabbioni, has been already repaired by the workmen of the "Valdarno" for a term in the way near Arezzo - Chiusi, and for the third time the work is still going on for the restoration for a term in the way Chiusi - Castelnuovo by the Germans "Valdarno" and those of the Ostiglia power plant

3) The Valdarno Co. in Castelnuovo 407
destroyed by the germans, can fully operate a transformer of 12.000 KVA - 60/35 KV that had been hidden.

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4) the line at 35 KV with double tens from Castelnuovo to Suna (3 km. from Florence) it has been rather damaged - In fact over n. 105 latice towers about 170 have been demolished -

The Valdarno Co. is Process of workmen and materials for the repair and has provided already for the first way Suna-Pavernuzza -

5) the Ha - Cabine of Suna, it will be soon available - a transformer of 4.000 KVA - 35/10 KV; that also has been hidden

6) The line at 10 KV from Suna to Florence (monte alle Croci cabine) it has been already repaired so that the ~~of~~ potable water service and others civil services could bee feed by the ober mentioned cabine -

7 Later on with 2 others transformers of 6.000 KV. - 35/10 KV that had been hidden and repairing also the short lines - branch it will be possible to arrive with the 35 KV to the Florence cabines (monte alle Croci and Varlungo)

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8) For the eventual disponibility of electric power from Lardarello the line 35 KV from Siena to Castelnuovo dei Sabbioni which its conditions are not yet well known it has to be put again in operation.

9) The Valdarno Co. to carry on the first programme for the Florence feeding has started already those works that had been from tile to realized to the same available means.

But the Valdarno Co had met with difficulties especially for what concern circulation pass and materials transports.

The present needs are:

a) permission for circulation from
for
b) transit over the Valdarno Co. bridges which are insufficient for a quicker and sufficient work.
between Siena for circulation needs

3 cars belonging the Società
and the affiliated societies

c) permission for fuel and lubricant supply for the mentioned cars.

a) allowance to use, if possible, 405
for two trucks for transport
of bars and materials by the lines

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The Valdarno Co. should withdraw
from the zone in question 400 wood
poles (10/12 m. lenght) for the settlement
of the distribution lines.
The track would have to be suitable
for these poles -
10) For the drivers of the trucks or workers
who and that service safety it
would be useful to be able to
distribute of our electrogenerator set for the
electric power plant
The Valdarno Co. would be very
grateful to the Q.C. if some
orders would be given to Lorenzo
Q.M.G. to make more easy the
work of the Society for the mobilisation of the electrical services
of the City -

by order
for the Col. Chief Service
Pompieri Agr. Foglia

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STATO MAGGIORE GENERALE
M. T. M.
SEZIONE SEGRETI

G. E. F.

File R. 158 no 181

18-24 agosto 1944

SOCIETA' VALDARNO -FIRENZE

1) - La Soc. Valdarno alimenta direttamente a mezzo di sue consociate Firenze e la regione Toscana.
Le consociate sono:

- Soc. Maremmana (1/2 Valdarno 1/2 Magona) per la zona del Grossetano;

(1)

- Soc. Elba(1/2 Valdarno e 1/2 Ilva) per l'isola d'Elba;

- Soc. FIAC (70% Valdarno) per la zona Pistoiese.

2) - L'energia proviene in parte da centrali proprie e in parte maggiore da acquisti presso altre Società.

Prendendo per base l'ultimo anno normale (1942) i Kwh prelevati sulle varie provenienze sono:

VALDARNO	Centrali idroelettriche sul Serchio: 288 x 10⁶		
	Centrale Termica Livorno 8		296 x 10⁶
EDISON	Soc. Alpina (Adamello)	225	
	" Emiliana	53	288

403

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SOCIETA' VALDARNO - FIRENZE

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- Soc. Elba (1/2 Valdarno e 1/2 Ilva) per l'isola d'Elba; (1)
- Soc. FIAC (70% Valdarno) per la zona Pistoiese

2) - L'energia proviene in parte da centrali proprie e in parte maggiore da acquisti presso altre Società.

Prendendo per base l'ultimo anno normale (1942) i KWh prelevati sulle varie provenienze sono:

VALDARNO	Centrali idroelettriche sul Serchio: 289 x 10^6		
	Centrale Termica Livorno 8 " 403	296 x 10^6	
EDISON	Soc. Cisalpina (Adamello)	225 "	288 "
	" Emiliana	53 "	

(1) L'amministratore Delegato e direttore generale è il Marchese Ing. PRINETTI - Gli uffici della direzione sono in Via Carrettoni, n.6

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TERNI	150 x 10⁶
LARDERELLO	118 "
SOC. DELLO SPERANDO	19 "
PICCOLI PRODUTTORI DIVERSI	19 "
	890 x 10⁶

3) - Geograficamente si ha la seguente situazione:

- la provenienza "Valdarno" e "Edison" -settore m^3 puri al 65% del totale sono tuttora in mano tedesca;
- la provenienza "Larderello" (settore W) pari al 13% del totale è attualmente nulla, data l'avvenuta distruzione da parte tedesca del macchinario di produzione. Sono in corso lavori per il ripristino di almeno uno dei gruppi da 12.000 KW (gruppo tubo alternatore alimentato da soffioni boraciferi;
- la provenienza Terni (settore SUD) è l'unica sulla quale è possibile contare in questo momento tanto più che indipendentemente dall'energia producibile dalla Soc. "Terni", la Direzione della Valdarno conta sulla centrale di Mura Montoro di sua proprietà, omologata che è rimasta intatta.

Delle altre due provenienze: quella dello"Sperando" e alcune di quelle "Produttori diversi" sono ancora in zona tedesca. Delle altre "Produttori diversi" non si hanno ancora notizie essendo in zona di operazioni.

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4) Il G.E.B. (Col. GROWDON) aveva stabilito che una delle due cabine di Nera Montoro 6.000 KVA attualmente funzionanti sulle linee di Roma e Civitavecchia fosse destinata all'alimentazione di Firenze.

5) La linea Nera Montoro - Chiusi - Tavarnuzze è attualmente tutta in zona liberata e i danni non sono gravi. C'è inoltre la possibilità di immettersi sulla linea a 120 KV Terni-Chiusi Tavarnuzze i cui lavori sono a buon punto nel tronco Terni-Chiusi.

6) Nella cabina di Tavarnuzze, la più importante della Valdarno, dove confluiscono tutte le alimentazioni a 120 KV, nonchè la dorsale 220 KV, dei n.4 trasformatori da 20.000 KVA rapporto 121/42 KV:

- n.1 è stato completamente distrutto (aveva dovuto funzionare fino all'ultimo momento)
- n.1 era stato vuotato dall'olio - è attualmente sotto le macerie e si spera, dopo revisione, sia ancora utilizzabile.

  N° 1 - era stato parzialmente smontato - le 3 colonne e il giogo inferiore sono tuttora sotto le macerie . Il rame ed il giogo superiore sono stati conservati a Firenze.

  N° 1 - completamente smontato e nascosto a Firenze.

I due sincroni da 6.000 KVA sono stati distrutti, così pure gravemente danneggiati i relativi trasformatori 35/6 KV.

L'autotrasformatore di regolazione da 12.000 KVA rapporto 50/52 è stato pure reso inutilizzabile.

7) Il criterio seguito dai dirigenti della "Valdarno" sia per

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le centrali che per le cabine di trasformazione è stato quello di smontare e nascondere un'unità completa almeno per ogni installazione compresa apparecchiatura in modo da poter essere in grado in ogni condizione di rimettere almeno parzialmente tutti gli impianti.

8) A modifica di quanto indicato nella "List of Main Hydro-plants in Italy with more than 5.000 KVA installed" occorre annullare la centrale n.192 Pian della Rocca in quanto coincide con la n.194 (Calaverno) In detta Centrale sono installati n.2 gruppi da 10.000 KVA cadauno, funzionanti, mentre un terzo gruppo è tutto smontato.

9) La Centrale termica a lignite di Castelnuovo dei Sabbioni (Valdarno è stata completamente distrutta nè è consigliabile per ora un tentativo di ripristino data la complessità dell'impianto e il rendimento di esso.
Invece sarebbe stato utilissimo poter ripristinare una delle unità della Centrale termica del "Marzocco" a Livorno (14.000 KV) il cui macchinario è stato asportato dai tedeschi.
Sembrerebbe però che l'ultimo gruppo sia tuttora nella zona dell'ANIC a Livorno essendo mancato il tempo per l'effettuazione del trasporto.
Ricerche sono già in corso da parte dei tecnici della Valdarno.

10) I dirigenti della Valdarno avevano avuto già una prima visita del Maggiore Page del genio dell'VIII° Armata - ed erano in attesa di poter prendere contatto con le autorità tecniche alleate per i permessi di circolazione delle Squadre operaie - lo sgombro mine sotto le linee e in genere tutti gli accordi per lo sviluppo dei lavori.

11) Appena la situazione militare lo permetterà sarà proseguito l'esame della situazione nella zona Toscana a Nord dell'Arno.

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parecchiature in modo da poter essere in grado in ogni condizione di rimettere almeno parzialmente tutti gli impianti.

8) A modifica di quanto indicato nella "List of Main Hydro-plants in Italy with more than 5.000 KVA installed" occorre annullare la centrale n.192 Pian della Rocca in quanto coincide con la n.194 (Calaverno) In detta Centrale sono installati n.2 gruppi da 10.000 KVA cadauno, funzionanti, mentre un terzo gruppo è tutta smontato.

9) La Centrale termica a lignite di Castelnuovo dei Sabbioni (Valdarno è stata completamente distrutta nè è consigliabile per ora un tentativo di ripristino data la complessità dell'impianto e il rendimento di esso.
Invece sarebbe stato utilissimo poter ripristinare una delle unità della Centrale termica del "Marzocco" a Livorno (14.000 KV) il cui macchinario è stato asportato dai tedeschi.
Sembrerebbe però che l'ultimo gruppo sia tuttora nella zona dell'ASIC a Livorno essendo mancato il tempo per l'effettuazione del trasporto. Ricerche sono già in corso da parte dei tecnici della Valdarno.

10) I dirigenti della Valdarno avevano avuta già una prima visita del Maggiore Page del genio dell'VIII° Armata - ed erano in attesa di poter prendere contatto con le autorità tecniche alleate per i permessi di circolazione delle Squadre operaie - lo sgombro mine sotto le linee e in genere tutti gli accordi per lo sviluppo dei lavori.

11) Appena la situazione militare lo permetterà sarà proseguito l'esame della situazione nella zona Toscana a Nord dell'Arno.

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(Translation)

File.

GENERAL STAFF

INTELLIGENCE BRANCH

August 18th - 24th 1944

VALDARNO CO. FLORENCE

1) The Valdarno Co. supplies Florence and Tuscany region directly and through its affiliated companies.

The affiliated companies are:

- Maremmana ½ Valdarno and ½ Magona Co. for Grosseto area;
- Elba Co. ½ Valdarno and ½ Ilva Co. for Elba island; (1)
- FIAC Co. 70% Valdarno for the Pistoiese area.

2) Partly the power comes from its own power stations and the most through acquisition by other companies.

Basing on the last normal year (1942) the KVh drawn by the different sources are:

VALDARNO	Hydroelectric power plant on the Serchio river	288 x 10^6	296 x 10^6
	Livorno Thermo plant	8 x do	
EDISON	Cisalpina (Adamello) Co.	225 x 10^6	288 x 10^6
	Emiliana Co.	53 x do	
TERNI		150 x 10^6	
LARDERELLO		118 x do	
DELLO SPERANDO CO.		19 do	
DIFFERENT SMALL PRODUCERS		19 do	
		890 x 10^6	

(1) The appointed manager and director general is Marquis Eng. PRINETTI - The management offices are in Via Carretani 6.

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3) Geogrephically the situation is as follows:

- The 65% of the total "Valdarno" and "Edison" sources - Northern sector - is still in German hands.
- The 13% of the total "Larderello" source (Western sector) at the present is out of operation as the production machinery has been destroyed by the Germans.

  The works for the reabilitation of at least one set 12.000 KW turbo-alterna_ tor, supplied by natural steam, are under way.
- At present time the only one on which it is possible to rely is Terni source (Southern sector), expecially because, independently of the power that Terni Co. can produce the Valdarno direction relies on his Nera Montoro power plant, which is undamaged.

  Regarding the others two sources, the Sperando one and some ones of "Different producers" are still in the German occupied area. We have no news about the other "Different producers" because they are in the battle area.

4) The C.E.B. (Col. Growdon) had decided that one of the two Nera Montoro cabins (6000 KVA), working at present on the lines Rome - Civitavecchia, should be used to feed Florence.

5) At present the line Nora-Montoro-Chiusi-Tavernuzze is entirely in the liberated area and damages are not serious. Besides it is possible to insert into the line at 120 KV Terni-Chiusi-Tavernuzze which works are well in hand on Terni-Chiusi branch.

6) In Tavernuzze cabin, Valdarno most important one, where all feedings at 120 KV meet and also the ridge - line 220 KV, one of the four transformers

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20.000 KVA - 121/42 KV has been completely destroyed,(it had been working up to the last moment). Once it has been empty of the oil, is at present under the wreckage and we hope, after a revision, to put it again in operation. One has been partially dissembled, its vertical and lower cores are still under the wreckage. Copper and upper side core have been salvaged in Florence. The last transformer has been coppletely dissembled and hidden in Florence.

Both synchron generators (6000 KVA) have been destroyed, so its 35/6 KV transformers have been seriously damaged.

The regulation's 12.000 KVA - 60/52 self transformer had been also put out of commission.

7) The "Valdarno" managers, in order to restorate at least partially all the plants as regard the power stations and the transformation cabins, have dissembled and hidden a complete set for each installation, switches inclosed.

8) In modification to what was reported in the "List of main Hydro-plants in Italy, with more than 5.000 KVA installed" is necessary to disregard Pian della Rocca power station No 192 as it is the same plant called Calavorno No 194. In the above mentioned power station two 10.000 KVA sets are installed and both working. A third one is entirely dissembled.

9) The Castelnuovo dei Sabbioni Thermo plant (Valdarno) has been completly destroyed and for the present time it is not advisable to try reabilitate it considering the efficiency and the complicated system of the plant. Instead it would be very useful to reabilitate one set of the "Marzocco" thermo plant in Leghorn (14.000 KVA) whose machinery has been removed by the Germans. It is however probable that the last set is still in the A.M.I.C. area in Leghorn as they had no time to

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remove it. Inquiries by the "Valdarno" Co. technicians are under way.

10) Major Page of the VIII Army Corps of Engineers, had already payd a visit to the "Valdarno" managers who were waiting for keeping in touch with the Allied technical authorities to obtain the circulation pass for the workmen gangs, for mine clearance under di lines and generally speaking for all the agreements to increase the works.

11) The situation of Tuscany area north of the Arno river will be examined as soon as the military situation will allow it.

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Confidential

VSR/lam 180

Tel: 478906

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

November 5th, 1944

SUBJECT: Meeting to
Discuss Electric Rehabilitation Plans.

TO : Soc. An. Terni per l'Industria e l'Elettricità
Azienda Comunale Elettricità ed Acque "A.C.E.A."
Società Romana di Elettricità "S.R.E."
Unione Esercizi Elettrici "U.R.E.S."
Società Elettrica Selt "Valdarno"
Soc. An. per lo sfruttamento delle Forze Endogene
"Larderello"
Società Meridionale di Elettricità "S.M.E."
Ente Autonomo Volturno

1. The following is a portion of an order recently received by the Allied Commission from Allied Force Headquarters:

"(2) The Electrical Reconstruction Committee will:

a. Meet at the call of the Chairman

b. Recommend studies for determining power requirements as may be required.

c. Recommend study of and preparation of plans for power rehabilitation as may be required.

d. Review Allied Control plans for power rehabilitation, correlating them with the requirements and make recommendations as to extent and nature of rehabilitation.

e. Recommend designation of agency to perform specific construction work of rehabilitation, when necessary.

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f. Make such other recommendations regarding power rehabilitation as it deems necessary.

The Allied Commission will:

(1) Furnish Secretariat for the Electrical Reconstruction Committee.

(2) Be responsible for planning power rehabilitation throughout Italy.

(3) Maintain liaison with AAI and keep informed as to existence and condition of power plants and probable rehabilitation needs in operational area.

(4) Ascertain power requirements from AAI, CZ, NATOUSA Districts (Hr.), and other sources.

(5) Submit plans for rehabilitation to the Chief Engineer for consideration and approval of the Electrical Reconstruction Committee.

(6) Using Italian labor and local materials, direct, administer and supervise construction work of rehabilitation and operate the power systems except those projects specifically assigned other agencies by Allied Force Headquarters and except as provided in paragraphs 2d (2) and 2e (1).

(7) Will issue all orders necessary to implement the program to Italian Power Companies or other civilian agencies.

(8) Keep the Chief Engineer, AFHQ, advised of its activities."

2. In order that the Allied Commission may perform its responsibility to plan power rehabilitation throughout Italy as outlined above, it is requested that both the Managing Director and Chief Engineer of your company be present a meeting to be held in the Cafeteria Conference Room, Number 27, on the first floor of Headquarters, Allied Commission, Ministero delle Corporazioni - Via Veneto, Rome, at 1000 hours on 10 November 1944 and that you be prepared to discuss the following:

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The preparation of a plan to rehabilitate the maximum possible generating and transmission capacity of your company before 31 December 1945, using materials and fabricating facilities locally available. By this is meant using local foundries and machine shops, and repair materials, either which are in Italy now, or which may be imported on short notice.

3. It is very important that you bring to the meeting appropriate technical data concerning your company so that preliminary plans can be discussed at the meeting in order that specific plans can be prepared by you as soon as possible after 7 November.

4. It is necessary that no information contained in this letter be released for publication.

E.J. Barry

E.J. BARRY
Major, C.E.,
Acting Chief, Elect.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

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VSR/lam

Tel: 478906

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

5 Novembre 1944

OGGETTO: Riunione per discutere i progetti di riabilitazione.

AI LE : Soc. An. Terni per l'Industria e l'Elettricità
Azienda Comunale Elettricità ed Acque "A.C.E.A."
Società Romana di Elettricità "S.R.E."
Unione Esercizi Elettrici "U.N.E.S."
Società Elettrica Salt "Valdarno"
Soc. An. Per lo Sfruttamento delle Forze Endogene "Larderello"
Soc. Meridionale di Elettricità "S.M.E."
Ente Autonomo Volturno.

1. Quanto segue è estratto da un ordine ricevuto dal Quartiers Generale delle Forze Alleate AFHQ.

L'Electrical Reconstruction Committee eseguirà i seguenti compiti:

a. Si riunirà dietro invito del Presidente.

b. Suggerirà gli studi opportuni per determinare i fabbisogni di energia secondo le prevedibili necessità.

c. Suggerirà lo studio e la preparazione dei piani di riabilitazione secondo le prevedibili necessità.

d. Controllerà i piani di riabilitazione della Commissione Alleata mettendoli in relazione al fabbisogno, e ne consiglierà i limiti e la natura più opportuna.

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c. Suggerirà, quando necessario, l'ente che dovrà eseguire un particolare lavoro di costruzione per la riabilitazione.

f. Darà ogni altro suggerimento che ritiene necessario per la riabilitazione.

La Commissione Alleata eseguirà i seguenti compiti:

1) Fornirà il Segretariato per l'Electrical Reconstruction Committee.

2) Sarà responsabile della preparazione dei piani di riabilitazione per l'Italia.

3) Manterrà il collegamento con l'AAI e si terrà informata della esistenze e condizioni delle centrali e probabili necessità per la riabilitazione nella zona di operazioni.

4) Dall'AAI, NATOUSA, CZ, Distretti (Br.) ed altre fonti si accerterà del fabbisogno dell'energia.

5) Sottoporrà all'Ing. Capo i progetti di riabilitazione per lo studio e la approvazione da parte dell'Electrical Reconstruction Committee.

6) Adoperando mano d'opera italiana e materiali locali, dirigerà e controllerà i lavori di costruzione per la riabilitazione e assicurerà il funzionamento degli impianti tranne quelli specificamente assegnati ad altri enti dall'AFHQ e con le eccezioni di cui ai paragrafi 2d (2) e 2e (1).

7) Darà alle Società Elettriche Italiane e agli altri Enti civili gli ordini necessari ad assicurare la esecuzione del programma di riabilitazione.

8) Terrà informato l'Ingegnere Capo delle sue attività.

2. Per mettere la Commissione Alleata in grado di eseguire il compito di cui sopra riguardante la preparazione del progetto di riabilitazione per l'Italia si desidera che il Direttore e il Direttore Tecnico della Società a cui la presente è diretta, siano ambedue presenti ad una riunione che verrà tenuta nella Sala per Conferenze No. 27 al piano terreno della Commissione Alleata - Ministero delle Corporazioni - Via Veneto, Roma alle ore 10 del 10 Novembre 1944 e che essi siano preparati a discutere quanto segue:

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La preparazione di un progetto per riabilitare nella maggiore misura possibile la capacità di produzione e di trasporto della propria Società entro il 31 Dicembre 1945, usando materiali e mezzi di costruzione locali. Per questo va inteso l'uso di fonderie ed officine locali e di materiali già esistenti in Italia o che possano essere importati in breve tempo.

3. E' necessario che gli interessati partecipino alla riunione avendo con se i dati tecnici necessari per discutere i programmi preliminari in modo da poter poi procedere alla preparazione dei progetti definitivi al più presto dopo la riunione.

4. Si richiede che il contenuto di questa lettera non venga in alcun modo divulgato.

E. J. Barry

E.J. BARRY
Major, C.E.,
Actin Chief, Elect. Div.

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

SOUTHERN ITALY

Report on the availability of electrical energy in Southern Italy progressively for the six months ending Feb. 28th 1945.

Also estimated requirements of electrical energy for Military, essential Civilian and factory rehabilitation in Southern Italy for the same period.

Prepared by the Electrical Division
Public Works and Utilities Sub-Commission
ALLIED CONTROL COMMISSION
26th August 1944

L.A. JENNY,
Lt.Colonel, C.E.,
Director.

W.M. LAPPER,
Lt.Colonel
Chief Electrical Divn.

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Report on the availability of electric energy in Southern Italy and reduction in generating Capacity due to the destruction of plants by the enemy.

(1) The enemy retreat through Southern Italy was much More rapid than Central Italy. In the first case the conditions were almost always fluid whereas in Central Italy a certain stationary period existed. It is for this reason together with the enemy's greatly improved organisation in demolition squads that the destruction in Southern Italy is considerably less than Central Italy.

(2) In considering the effective capacity of the generating facilities in Southern Italy the following important points should be noted:-

(a) 170,000 KW of the generating capacity is situated in the extreme South. It is known as the Sila Group of Hydro Electric Stations Located in Calabria.

(b) As there are only two high Voltage Transmission lines leading north from the Sila Group, each of 45,000 KW capacity the effective output from the group, apart from Calabria which is fed on a lower voltage system from the same group, is limited to the capacity of these lines and also to the capacity of the Transformers at the Sila Group.

(c) Electricity rationing schemes initiated by A.C.C. and now being handed over to the Italian Government keep the demand within the effective output of the generating plant. This rationing arrangement will have to be maintained until the electrical facilities in Central Italy have been restored and interconnection resumed.

(d) The greatest care is taken to see that the consumption of electricity in the Southern Italy area does not exceed the allowable water flow from the Reservoirs. The A.C.C. Southern Italy Electrical Engineer regulates this either by varying the consumption or to a certain extent by the use of the Capuano Steam plant.

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TABLE " A "

Summary of Electrical plant and requirements

(1) Total effective output capacity of generating plant in Southern Italy — 142,600 KW

(2) It is anticipated that the above output capacity will be increased during the winter months due to rainfall. (This does not include Sila group which is limited by Transmission Line capacity). — 10,000 KW

(3) The allocation of Electric power is made by the Allied force Local Resources (Italian) Board Electrical Committee to the various districts. The allotment for September being as follows.

TABEL " A"

District	Allotment in Kilowatts
District 1 UNES	1,500
District 2 Apulia Lucania	42,000
District 3 Campania	23,100
FBS Naples Santa Maria	33,000
ACC Calabria	11,000
Railways (DGMRS)	10,000
TOTAL Demand	120,600

It is expected that this demand will increase during the winter months. Table "E" shows the effective output capacity to meet the demand during the months of Sept.1944 to Feb.1945 inclusive. The Italian Government will arrange to ration supplies to keep within this capacity.

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TABLE " B "

Showing the output capacity of the Generating Stations operating in connection with the Grid System in Southern Italy at 26th Aug. 1944.

Name of Station (1)	Location of Station (2)	Output Capacity at 26th Aug.44. KW (3)
Sila Group (H)	Calabria	105,000
Tusciano (H)	Salerno	4,200
Tanegro (H)	Salerno	2,200
Matese I (H)	Benevento	5,200
Capuano (S)	Naples	20,000
Volturno (D)	Naples	6,000
TOTAL Output Capacity		142,600

Matese I. Set is at present out of operation due to breakdown of Alternator repair will be completed at end of Sept.

Sila Group. The total Capacity of the Sila Group is 170,000 KW, the effective output however is less due to the following causes.

(a) Plant is run to suit Reservoir capacity
(b) Transmission Line Limitation
(c) Transformer Limitation.

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TABLE " C "

Showing the output capacity of the Generating Plant connected to the Grid System which is now under repair and the anticipated date of completion.

Name of Station (1)	Location of Station (2)	Output Capacity KW (3)	Anticipated date of Completion (4)
Capuano	Naples	10,000	Nov.
Calore	Avellino	5,000	Nov.
Aventino	Chieti	4,200	Jan.
TOTAL Output Capacity		19,200	

TABLE " D "

Showing the output capacity of the generating plant which is being moved to assist in the rehabilitation programme.

Name of Station receiving plant (1)	Location of Station (2)	Output Capacity KW (3)	Anticipated date of Completion (4)
Matese II (set from Alto Belice Sicily 3,000 KW)	Benevento	(see Table D page.5. Central Italy Report)	
Lete (set from Matese I 5,200 KW)	Campobasso	5,200	Jan.
TOTAL output Capacity		5,200	

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TABLE " E "

Showing the output Capacity at present, from repaired plants, by transfer of plants and the additional output to be expected during the winter months due to rainfall.

	Sept. KW	Oct. KW	Nov. KW	Dec. KW	Jan. KW	Feb. KW
Present output Capacity	142,600	142,600	142,600	142,600	142,600	142,600
Output capacity from repaired plants	--	--	15,000	15,000	19,200	19,200
Output capacity from transfer of plants	--	--	--	--	5,200	5,200
Output capacity from increase in water	--	3,000	6,000	8,000	10,000	8,000
TOTAL	142,600	145,600	163,600	165,600	177,000	175,000
Est minimum outage for breakdown and Repairs 10%	14,260	14,560	16,360	16,560	17,700	17,500
Effective output capacity	128,340	131,040	147,240	149,040	159,300	157,500
SAY	128,000	131,000	147,000	149,000	159,000	158,000

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HEADQUARTERS
ALLIED MILITARY GOVERNMENT
TOSCANA REGION
PUBLIC WORKS & UTILITIES

RVIII/100/PWU/1/3 26-Oct.-44

SUBJECT : Power Supply Plans.

TO : Director Public Works & Utilities
Sub-Commission ACC APO 394
(attn. Major Renton)

The attached plans prepared by the Valdarno Company showing :

a) Distribution in Tuscany

b) Extent of damage to plant (as known to date) with anticipated period of repairs

are sent to you for information.

P.S.L.LEE
Major R.E.
Regional Engineer

2 Encl.

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HEADQUARTERS
LAZIO-UMBRIA REGION A.M.G.
(Engineering Division)
APO 394

177 P.W.&U. 1458

Rome 23 October 1944

TO : Headquarters ACC -
Public Works & Utilities S.C.
Electrical Division

SUBJECT: Power Plant on Marta River - Viterbo Province

IN REPLY QUOTE : R4/ENG/90

The attached information is forwarded for any necessary action.

E.P. WADE BROWN R.A.
Lieutenant
Chief E&M Section

720
360000
9.000

Vars - Talk to Bob Bell re this - He was there once - said manager had pretty daughter - go there how much sense to idea and what's involved? R

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Italy FILES

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Spoleto W.P.

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
Lazio-Umbria Region
(Engineering Division)
APO 394

WTL/rm

Co 547

6th October 1944

TO : Regional Engineer - Lt.Col. Findlay -

SUBJECT : Electric Power Plants located on Marta River
Deepening of Marta River.

FILE N° : R4/ENG/90.

1. On recent visit to the vicinity of Marta, Viterbo Province, the following information was found in connection with electric power plants located on the Marta River.

a) Originally there were 4 power plants now only 3 are in operation, the 4th having been damaged by the war.

b) The output from power plants N° 1 and N° 2 is 10,000 Kwh/day and from N° 3, 5000 Kwh/day. The power plants are referred to consecutively starting at Lago di Bolsena and going down stream. The total output of the three is about 30% of normal output. These figures were given by Ing. Biagini Giuseppe and Ing. Frigo Angelo who operate the three power plants between them.

c) The project to deepen the Marta River was to have been started before Italy went to war with Abyssinia but was not started because of the war and also there seems to have been some objections raised by fishermen and farmers with land around Lago di Bolsena.

Capt. Phillips U.S. Regional Commissioner was of the same opinion that there had been objections raised by farmers and fishermen and that is why original plan had been stopped. He was also of the opinion that the electric society was interested in having the project approved by Allied Government since their attempts previously through the Italian Government had failed.

The project proposed before the war was for deepening of river approx. ½ meter for a distance of 4 Kms. at a cost of L.150.000 before the war. Now the Ing. of Electric Society Ing. Frigo Angelo thinks that if this was done for only Km. 1 it would improve the entire flow of river as far as their power stations were concerned.

I observed the river and river bed for the approx. 4 kilometers and without sufficient data as to elevations along the river believe that a general clearing of river bed from accumulated 380 and growth without actual deepening would be an emergency solution.

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If no political angles would prevail and the money available the most practical solution would be to do the original contract of 4 Km. deepening the river average an of ½ meter which would thus prevent doing the work twice i.e. clearing river bed first in one contract and then later deepening it as called for in original scheme.

W.P. LAUGHTON, Capt. INF.
~~for Regional Engineer~~
~~Lazio Umbria Region AMG~~

1- Regional Engineer
1- E + M Section
1- File

Ike,

Filenote "Puerto Plata - Monte Cristi - Valverde Prov. R." 7 NOV. 1944

I discussed the Upper Yjata River Project with Bob Bell yesterday. The facts are as follows:

1. The power supplied to local customer only. Non-essential
2. The output of the plants can not be connected to any system or grid.
3. The dredging suggested is not economical and would not increase output, but only insure a better year round average.
4. There is a political row on over the thing already.
5. Not connected with the military effort in any way.

I think these facts defeat any possibility of including this project in our 12 month program.

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Dan

3/11/44.

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1. [illegible]
entirely only. Non-essential
2. The output of the plants can not
be counted to any extent or goal.
3. The dredging suggested is not
economical and would not exceed
output, but only insure a little
year round average.
4. There is a political war on as
the thing already.
5. It will not contend with the
military effort in any way.

I think these facts defeat any
possibility of including that project
in our 12 month program.

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R
3/11/44.

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Gen. Office 176

IMV/lam

Tel: 478906

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

3 November 1944

AC/158/PWU

SUBJECT: 88 KV Transmission Line Larderello - Colle Val D'Elsa and Siena - Castelnuovo Sabbioni.

TO : Regional Commissioner, Toscana
(Att. Regional Engineer)

1. Transmitted herewith is an invoice for the Societa Elettrica Valdarno covering materials obtained from A.C.S.A. Company on 4 Sept. 1944 for the reconstruction of transmission lines.

2. Please deliver this invoice to the Valdarno Company so that a settlement between the companies can be made.

E.J. BARRY
Major, C.E.
Acting Chief, Elec. Div.

1 encl. - 2 copies of
Bill of A.C.S.A.

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Unclassified E.O. 12356 Section 3.3/NND No. 785019

A. C. E. A.

Roma, 18 ottobre 1944

Fattura No. 510

Soc. Elettrica Valdarno

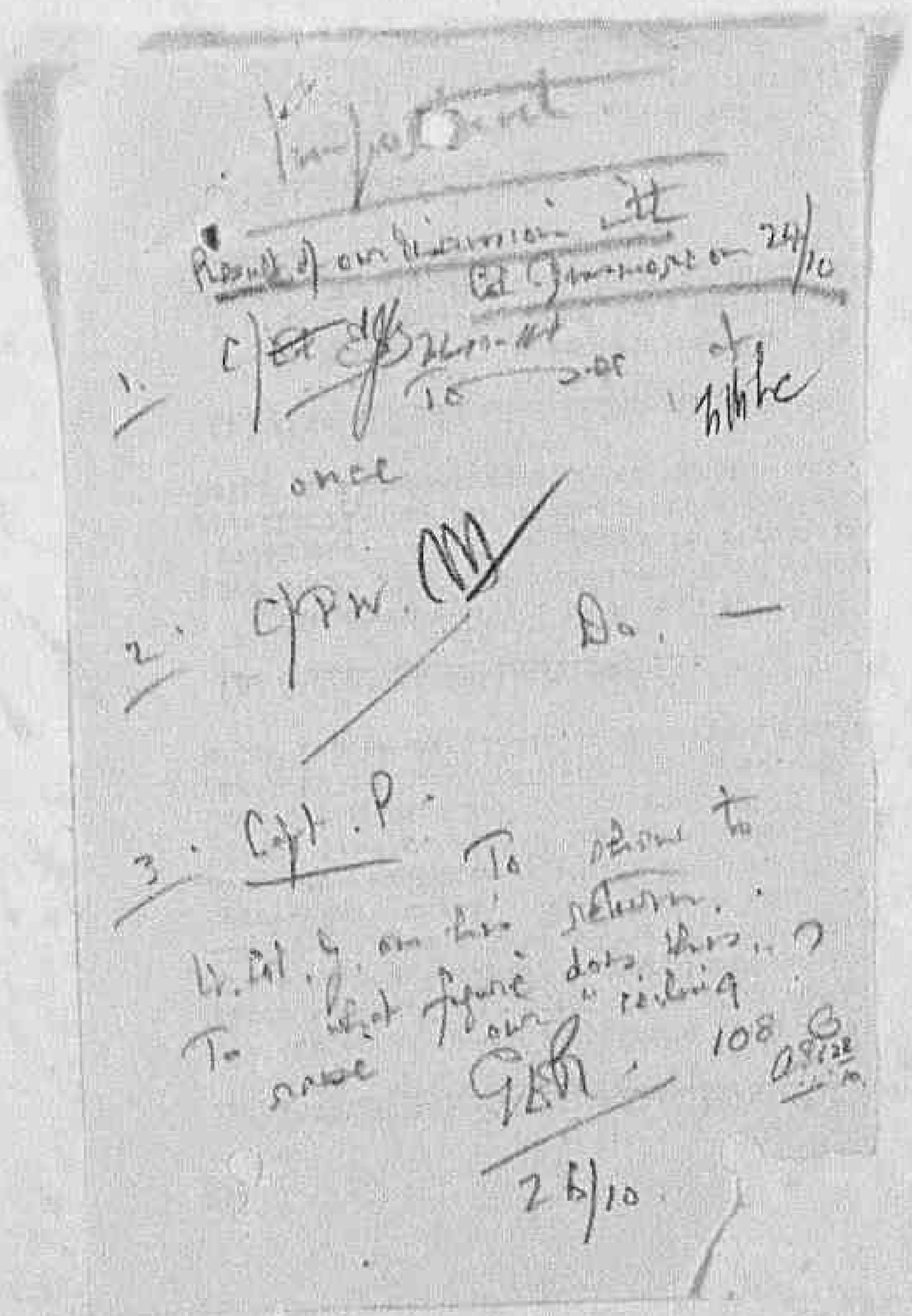
Corda Aldrey ses. mmq. 50	Kg. 505	95, --	47.975,--
Bobina di legno per detto	n. 1	1.000, --	1.000,--
Giunti cornici	" 100	250, --	2.500,--
Morsettini a tre bulloni	" 150	50, --	750,--
Stagno preparato al 50%	Kg. 5	600, --	3.000,--
I.E.			1.104.50
			56.329,50

P.V. 38-37 Ostiense

Add 1% ns/ carico L. 552.25

Per l'imposta sull'Entrata in L. 1.656,75 emesso postagiro settimanale N. 383 in data 19-10-44 sul c/c postale N. 1-11200 Ufficio del Registro - Roma Daposta Generale sull'Entrata.

Declassified E.O. 12356 Section 3.3/NND No. 785019



Declassified E.O. 12356 Section 3.3/NND No. 785019

25 OCT Read

HEADQUARTERS
ALLIED CONTROL COMMISSION
ECONOMIC SECTION
APO 394

Tel: 540

EC/15

25 October 1944

MEMORANDUM FOR THE CHIEF OF STAFF:

Subject: Power Rehabilitation and Personnel for Public Works and Utilities Sub-Commission.

1. Reference your memorandum 5406/53 COS 12 Oct 44, above subject.

2. AFHQ memorandum 43 of 5 October referred to in your memorandum places the responsibility for planning and supervision of all electrical rehabilitation in Italy on ACC. See para 2 (c). Inclosure #1 hereto shows personnel requirements for Public Works and Utilities Sub-Commission for work of rehabilitation of Italian electric power facilities.

3. It is requested that the so-called field team of the Public Works and Utilities Sub-Commission be increased from a ceiling of 5 to a ceiling of 10 and that the 5 additional officers be made available immediately, the 5 additional officers to have qualifications as will be indicated by P. W. & U. S/C to C-1.

4. At present there are 5 officers of the P. W. & U. S/C in the various regions. It is requested that the ceiling be increased from 5 to 37. Such additional officers are to be assigned as selected by P. W. & U. S/C from time to time over the next two or three months based on requirements.

5. For justification of above request see inclosure #1.

6. This matter is considered urgent.

A. G. ANTOLINI
Acting Deputy Chief of Staff
Economic Section

Incl - n/c
cc: Establishment Section
Public Works & Utilities S/C

375

Declassified E.O. 12356 Section 3.3/NND No. 785019

File 158 General Office File

R 174

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

1st November 1944

MEMORANDUM: TO: Colonel Dermore.

In accordance with Major J.A. Quayle's memorandum dated 25th October 1944, File A/CC 004.04 regarding a report on the electric power situation, there are transmitted herewith ten copies of a report entitled The Electrical Power Situation in Liberated Italy, prepared by the Public Works and Utilities Sub-Commission.

G.E. RHODES
Lieut-Colonel, R.E.
Acting Director.

1 enclosure:

10 copies of Report.
7

Draft

Seen
G.E. Rhodes
Lt. Col. R.E.
A/Director
P.W. & U.S.C.
31.10.44.

Noted this draft
to General
Smith 3/40
R.

REPORT ON THE ELECTRIC POWER SITUATION IN LIBERATED ITALY

BY

PUBLIC WORKS AND UTILITIES SUB-COMMISSION A.C.

Introduction

In the days before the war, the entire economic life of Italy was dependent upon falling water and upon natural steam blowing from the earth. The energy in that water and in that steam was converted into electricity, often to be carried miles away where it turned factory wheels, ran trains, melted steel and lighted cities.

To-day, most of the electrical facilities in the Italian power plants have been seriously damaged, and upon their repair or replacement will depend the success of any program designed to restore the normal economic life of Italy. That the damage has been heavy is shown by the fact that in Central Italy the electricity now available for daily consumption is only slightly more than ten percent of the 1939 amount.

While a small amount of the destruction has been the result of bombs, artillery shells and rifle fire, by far the greatest damage has been caused by trained German demolition squads travelling with the retreating enemy.

Rehabilitation

In rehabilitating the electric facilities the following points are constantly in mind:

a) The need which the military forces have for electricity.

Military requirements include factories producing directly for the war effort, hospitals, pumping, rail-roads, ports and offices, recreation centres and billets; also ports & docks & canals and sewage.

b) Vital civilian needs such as water pumping for communities; land reclamation & Bonifiche works.

At times this particular need has been considered a military

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Declassified E.O. 12356 Section 3.3/NND No. 785019

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b) Vital civilian needs such as water pumping for communities; land reclamation & Bonifche works.

At times this particular need has been considered a military requirement for, in the absence of water, an epidemic in a civilian community will endanger nearby troops.

Other vital civilian needs include electricity for flour mills,

...

27a

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c) The need of civilian industry for electric power in order that Italy may better rehabilitate herself, and may become less of a burden on other countries.

In rehabilitating the electric facilities of Italy, generating capacity is now being made available in the following ways:

a) The fabrication of new machinery parts and structures to replace damaged ones. This normally involves the use of basic materials such as cement, cloth, copper, iron, mica, varnish and structural steel shapes. Up to now the replacement parts have been prepared in Italian plants from materials available locally.

b) The replacement of damaged parts by similar undamaged pieces from other equipment. In many instances, the enemy has prevented this by destroying the same part of several machines.

c) The movement of equipment to a point at which it can be utilized to the best advantage. This is possible in some instances, because many generating stations had equipment which, because of seasonal variations in stream flow, was used for only a few months each year. Under pre-war conditions, installations of this nature were economical. Now, however, it is necessary that all available equipment be located to deliver a maximum output for as many hours a year as possible.

d) The completion of projects which were under way at the time of German occupation, and which had not been completed to the point where they were capable of producing electricity.

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The present state of the electric facilities in Italy is shown by the following:

(a) - In Southern Italy, south of a line between Naples and Pescara there were before the war, 377,320 kilowatts of generating capacity

Declassified E.O. 12356 Section 3.3/NND No. 785019

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372

The present state of the electric facilities in Italy is shown by the following:

(a) - In Southern Italy, south of a line between Naples and Pescara there were before the war, 377,320 kilowatts of generating capacity connected to the high-tension transmission system. Now the present generating capacity is 225,140 kilowatts, 61,600 kilowatts of which has been made available as the result of repairs made after Allied liberation. When present repairs are completed 13,000 kilowatts more of generating capacity will be available there. The same area

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(1)

Today, there are only
72,950 kw of capacity operating, or
8 percent of them pre-war capacity.
This figure includes 18,000 kilowatts of
~~gen~~
~~equipment~~ operating equipment which has been put
back in service since Allied occupation.
The ~~am~~ total ~~expected~~ future estimated, future generating
capacity in ~~central~~ Central Italy is
~~estimated~~
as follows:

Date	Total Generating Capacity
November 15, 1944	102,950
December 15	153,550
January 15, 1945	194,120
February 15	194,120
March 15	252,394

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(2)

Out of a total of 5,953 kilometers of high tension transmission lines in Central Italy, 3,500 kilometers, or 58 percent are now in operation. So far, 1,600 kilometers of line have been repaired and 530 more are currently under repair.

contained 3320 kilometers of high tension transmission line of 30 kilovolts and over. Now 2200 kilometers are back in service and 180 more are being repaired. The present monthly energy generation is 45 percent of the 1942 figure.

(b) - In Central Italy, extending up to the battle line as of 31st October 1944 there were, originally about 870,000 kilowatts of effective generating capacity.

To-day there are only 72,950 kw of capacity operating, or 8 %. This figure includes 18,000 kilowatts of generating equipment which has been put back in service since Allied occupation. More than 1600 kilometres of high tension transmission lines have been repaired in Central Italy, 530 more are currently under repair. The total high tension operating life is about 3,500 kilometres. This means about 58 % are in operation.

Agencies participating

Normally the repairs in the forward areas are all done by military units to make electricity available for hospitals, water pumping, living quarters and other military needs. In many instances military units have performed, and are continuing to perform, important repair work in the rear areas. An outstanding case of this nature includes the rehabilitation of the Capuano Generating Station at Naples by the Royal Navy. Many kilometers of transmission line have been repaired by the 11 C.E. Works. Numbers 1, 2 and 3 District, and the Peninsular Base Section have participated heavily in the rehabilitation of electric facilities. It is to be noted that in many instances Army units have assisted whole-heartedly in electrical rehabilitation projects, although it was not apparent that the military would benefit directly thereby.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

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In the rear areas, the majority of the electrical rehabilitation has been under the direction of the Allied Commission. This work has been in cooperation with the local electric companies concerned. In most instances, undertaking this rehabilitation has necessitated the utilization of civilian equipment, mostly in poor condition, the employment of civilian labor, and the use of such local materials as

...

Declassified E.O. 12356 Section 3.3/NND No. 785019

could be found. In many cases the local Regional Engineer of the Allied Commission has been able to secure military assistance in the form of transportation, supplies and personnel. ~~It is submitted here that the Regional Engineers, and the electrical officers of this Commission from Sicily to Toscana have accomplished in a praiseworthy manner a tremendous task, under difficult conditions.~~

On 5 October Allied Forces Headquarters, in Administrative Memorandum No. 43 established the Electrical Reconstruction Committee the duties of which include reviewing plans for the rehabilitation of electric facilities and recommending them to the Chief Engineer, AFHQ. The Committee consists of representation of AFHQ, Royal Navy, NAAI, Allied Commission, and MTOUSA. In the same memorandum, the Allied Commission is charged with preparing the plans for electric rehabilitation throughout Italy and supervising the actual rehabilitation work. Such plans have been made by this Commission, working with the civilian Electric Companies even prior to the AFHQ memorandum, and are being revised frequently, in accordance with current developments.

At the present time, two officers of the Public Works and Utilities Sub-Commission are in the United States to investigate the availability of mobile electric generating equipment. No information has been received from them, indicating the quantity of the equipment which may be expected, nor the date of arrival.

It is not intended that this report be concluded in a pessimistic 369 tone, but also, it is not intended that the reading of it should generate any false hopes as to early resumption of normal electric services in Italy. The chief obstacles ~~which~~ now foreseen, in order that the rehabilitation may proceed rapidly are:

Declassified E.O. 12356 Section 3.3/NND No. 785019

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It is not intended that this report be concluded in a pessimistic 369 tone, but also, it is not intended that the reading of it generate any false hopes as to early resumption of normal electric services in Italy. The chief obstacles now foreseen, in order that the rehabilitation may proceed rapidly are:

(a) The scarcity of basic materials such as mica and insulating tapes. The small quantity on hand in Italy is being rapidly consumed for present repairs. So far, ordering such materials from overseas has brought but little results.

...

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(b) The scarcity of transportation facilities, including gasoline and tires, ~~tyres,~~ as well as vehicles. Even the most elementary construction project is made difficult if transportation is unavailable.

(c) The possibility that in North Italy the Germans have had a good opportunity to damage machinery as well as to move it out of the country, and that when the Allies liberated that area, they will find it very highly industrialized but with positively no electricity available. [In this connection, it should be noted that 70 percent of the pre-war electricity in Italy was generated in territory still held by the enemy.]

(d) The possibility that the war may end suddenly, and the North Italy ~~will~~ may be only ~~very~~ lightly occupied by the military. In this case, the military personnel, supplies and transportation which in Central and Southern Italy have been ~~need~~ used, will be unavailable.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

HEADQUARTERS ALLIED CONTROL COMMISSION
Office of the Acting Chief Commissioner
AFC 394

JAQ/dfs

25 October 1944

A/CC 004.04

173

MEMORANDUM TO: Colonel Densmore

The Advisory Council on the 11th of October asked the A/Chief Commissioner to arrange for a report on the electric power situation in liberated Italy to be presented to the meeting of the Council on October 20. Since both Jenny and Lapper were out of the country, we told them that it would be impossible to present such a report on that date but suggested that it be deferred until the next Advisory Council Meeting. The next meeting will take place on November 3, and the A/Chief Commissioner, Commodore Stone, wishes to know if he can be sure of being able to present the report on that date or if it would be safer to put it off once again.

J. A. QUAYLE
Major, U. S. A.
Staff Officer to A/CC

cc: C of S Section
'A' File

Phone 485

Rooms Chief Con Off 3

Ready by noon Wednesday 31 Oct
Phone 1
Tuesday
5 pages
10 & 1367

Mr. Groshie 478234
Secy & Advis Counc.

Declassified E.O. 12356 Section 3.3/NND No. 785019

R Sitt

PWV/lam

Tel: 478906

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

172

1 November, 1944

ADC/156/PWU

Subject: Power Supply Plans.

To : Regional Engineer
Toscana Region, A.M.G.
APO 394

This refers to your letter RVIII/100/PWU/1-3 dated 26 October 1944 transmitting a map of the Valdarno Company distribution system and a plan showing damage to facilities of the Company.

This type of information is very helpful to us and will be used to advantage. Thank you for your assistance in obtaining this data for us.

E.J. BARRY
Major, C.E.
Acting Chief, Elect.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

HEADQUARTERS
ALLIED COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

171 PWB/GS

ACC/156/PWU

31 Oct. 1944

Subject : Log of Major R.A.Bell

To : Lt.Col.F.M.LAWDER - Chief Exec. Div.
Reg.Com.Tosc ane Region (Attn Regional Engineer)
Reg.Com.Lazio-Ebbrie Region (Attn Regional Engineer)
P.W.B. Engineers (Attention Lt.Col.Cooley)
Provincial Commissioner - Forni (attention Maj.Lee)
Hq. 5th Army AAO (Attention Capt.Gaither)

1) - Attached herewith is copy of the log of Maj.R.A.Bell for the period October 17th to October 28th inclusive.

E.J.BAILEY
Major, C.E.
Acting Chief Exec.Div.

1 enclosure

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.48581

HEADQUARTERS
ALLIED COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LMC/ae

LOG OF MAJOR K.A.BELL

October 17 th - A ugo

Conference with Capt.Collier. Arranged to have him contact Air Force representative regarding obtaining 25 KW portable power plants.

October 18th

Conference with Maj. Berry regarding boiler tubes and forgings for AGFA.

Trip to Terni. Conference with De Gasperi. 120 boiler tubes on hand 6 meters long instead of 8. Terni Steel can make forgings in twenty days provided they can have specifications and old forgings by Oct. 20th. Arranged to comply. Journey to Rome.

October 19th

Arranged with Eng.Zecconi to have forging and drawings ready to-morrow.

Weekly report to be from Terni Company to be discontinued, as daily telephone report from Villa Valle is sufficient. I am to meet Lt.Col.Page at Terni to-morrow morning.

MAT 10 Tons for Pubblichi di Terni put in by Maj. Price.

Received 5 gallons od linseed oil for delivery to Lardarello Company.

October 20th

Picked up forging at AGFA. Journey to Perfa I, II and Terni with Col. Edgar, Col. Libby and Mr. Marvin. Inspected all of Terni works.

Talked to Maj.Renton by telephone. Asked him to contact De Gasperi in re. Maj. Renton requested me to get story transmission lines north and belting given by Maj. Hirst.

October 21st

Conference with Eng.Piedmonte, Capt. Rogers (N° 1 District) agreed to ½ Military help on line Terni to Foligno (220 KV), last priority, 132 KV line wi (need 6 Km. of 150 mm copper). Gallicto N° 1 unit will be running November

./.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

30th. If transformers are not ready, they will use power at Carbide Plant temporarily. Need transformer oil and insulating material from Naples. Cooling coils from Rome.

Conference with De Gasperi. Discussed possibility of repairing forgings for ACRA instead of making new ones. Arranged meeting in Rome 2 P.M. to-morrow for trip to Tivoli with MRS officials. It is possible to gain one month on Castel Gandolfo, Mondola, and Saltelone due to new machine found if lumber for patterns can be found. ACRA promised to provide lumber. See Ferrara please check. Journey to Rome.

October 22nd

Conference with Eng.Virgili, Micarelli and Ferara. Arranged meeting for to-morrow in office.

October 23rd

Conference with Eng.Virgili, Micarelli, Maj.Price and Eng.Ferara. Arranged for 40 tons truck to go to Lardarello Friday with representative of Larderello Company. Arranged with Major Price to provide 40 tons of cement monthly. POL for vehicles must be taken up with Region Supply.

Journey to Florence with Maj.Benton and C.A. Ivy.

October 24th

Conference with Mr.Mesmontai (at Larderello Co. Office). Asked re request for POL, clothes etc.. to turn over to Maj.Lee.

Conference with Maj. Lee. He is to get brief out this release from PBS, POL for cars, clothes etc... to be handled by Region VIII (Tuscany) Supply. Suggested Maj. Lee to check Larderello sugo increase request. Journey to Larderello.

October 25th

Inspected plants with Maj. Benton. Conference with Eng.Head & Mr. Bonnenfant. Issued travel permits for three trucks.

Journey to Pisa and Return. Checked on steel release.

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October 26th

Journey to Rome. Much rain - bridge out on Highway N. 1.

October 27th

Conference with Maj.Barry. MRS has requested 3.000 KW for Florence-

Declassified E.O. 12356 Section 3.3/NND No. 785019

Bologna line by December 1st . Plan to do this with Maj. Newton.

Cancelled 40 ton truck to Lardarello on account of bridges.

October 24th

Conference with Maj.Virgili. Railway truck at Lardarello not a possible of hauling from Lardarello to Casbalmuovo. 4 to 5 tons of boric acid being produced daily. Arranged with him to have 40 ton truck leave here Tuesday 9 A.M. Arranged release of 40 tons of cement from Civitavecchia immediately.

Wrote letter to Pisa Province regarding Lardarello trucks
Wrote report on Lardarello Co. to Major Berry.
Wrote memo to Industry & Commerce Sub-Commission regarding chemical production of Lardarello.

"-"-"-"-"

Declassified E.O. 12356 Section 3.3/NND No. 785019

O

Ufficio

PWV/lam

Tel: 48908

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

170

30 October 1944

ACC/158/PWU

Oggetto: Funzionamento del Diesel alla Centrale Montemartini.

Ad : A.C.E.A. - Via Milano - Roma.

1. Con riferimento alla lettera in data 25 settembre 1944 N. ACC/158/PWU.

2. La presente conferma le istruzioni verbali fornite all'Ing. Montani, distributore del carico presso la S.R.E. in data 30 Ottobre 1944, circa la necessità di far fronte al carico che si verifica approssimativamente dalle ore 0600 alle ore 0800 di ogni giorno con ogni mezzo disponibile compreso il Diesel della Centrale Montemartini.

E.J. BARRY
Major, C.E.
Acting Chief, Elect.Div.

Copia: S.R.E.
Ing. Ruggeri

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489081

HEADQUARTERS
ALLIED COMMISSION
Public Works and Utilities Sub-Commission
APO 394

PWV/lam

169

ACC/158/PWU

30 October 1944

Subject: Montemartini steam plant
Diesel Motors Operation.

To : A.C.E.A. - Rome - Via Milano.

1. Please refer to our letter dated 25 Sept. 1944 File ACC/158/PWU.

2. This confirms our oral instruction to Ing. Montani Load Dispatcher of S.R.E., on 30 Oct. 1944 that the load occurring at approximately 0600 - 0800 hours each day will be supplied with every means available, including the Diesel motors of Montemartini.

M.J. HARRY
Major, C.E.
Acting Chief, Elec. Div.

CC - S.R.E.
Ing. Ruggeri.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

LWL/ac 168

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

ACC/1s8/1WU

26 Oct. 44

Subject : membership

To : M.A.A.C. - A.P.O. 794 (Attn Major W.H.HUGHES
Chairman of Electricity Control Board)

1) - Reference C 233/3 - 24 Oct. 44.

2) - Our information is that Lt.Col.Andrews has left Rome and therefore Capt. L.W.LANGLEY may be considered as taking his place on the committee.

For the acting Chief Commissioner

G.E.Rhodes

G.E.RHODES
Lieut-Col. R.E.
Acting Director

cc : Economic Section (Att.Col.Densmore)
cc : Reg.Com.UMBRIA-LAZIO REG. (Att.Reg.Eng.)

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Declassified E.O. 12356 Section 3.3/NND No. 785019

25 OCT Recd

(A)

ROME ALLIED AREA COMMAND
APO No 794 US Army
Office of the Electricity Control Board

Q 235/3

SG/hwt
24 October 1944

SUBJECT: Membership

TO : HQ ACC Public Works and Utilities Sub-Commission
(Attn Lt-col RHODES)

Reference your letter ACC/158/PWU of 19 October 44.

1 The Electricity Control Board are pleased to extend membership to Capt LAUGHLIN, as representative of the Public Works and Utilities Sub-Commission of Allied Control Commission.

2 The Board meets weekly on Mondays at 1430 hrs in Room No 45 on the first floor of the Rome Area building in Piazza Venezia.

W H Hughes

W. H. HUGHES
Major
Chairman

(1) [illegible] -26-10-44
To [illegible]

(4) A copy of 3 to RE (U-L) for info

(2) Copy to Econ Sec Lt Col [illegible] (our letters [illegible])

(3) Write RAAC [illegible] that our info that Lt Col Andrews has left Rome, & therefore 26/10 Capt L may be considered as [illegible]

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Declassified E.O. 12356 Section 3.3/NND No. 785019

4-4

13 OCT 1944
1st Ind

167

ALLIED FORCE LOCAL RESOURCES SECTION
R.A.A.C., C.M.F.

LRS/2163/1

12 Oct 44

Telephone: ROME 66275

SUBJECT: Electrical re-habilitation in ITALY.

TO: HQ ACC Public Works & Utilities
Sub-Commission.

1. In accordance with the meeting of the Allied Force Local Resources (Italian) Board it is requested that a brief preliminary report on the progress made in, and the planning for the re-habilitation of the electric power system in ITALY be presented by your representative on the Electrical Reconstruction Committee to the next meeting of the Electric Power Committee to be held on 21 Oct 44.

2. May this report please be rendered in such a manner as to be suitable for attachment as an appendix to the minutes of the meeting.

Original handed to Lt Col Johnson at 21 Oct. meeting R. Copy attached R.

A. A. [illegible], Brigadier,
Chief of Section (Br),
A.F.L.R.S.

HEADQUARTERS
13 OCT 1944
A. C. C.

SJBL/cwe

Major Renton
Capt [illegible]

357

VSB/elg

ALLIED FORCE HEADQUARTERS
ELECTRICAL RECONSTRUCTION COMMITTEE
APO 512

21 October 1944

Subject : Rehabilitation of Italy's Electric Power Facilities.

To : Electric Power Committee, Allied Force Local Resources Section, M.A.A.C., C.M.F.

1. The Electric Reconstruction Committee was reestablished on 5 October 1944 under the provisions of AFHQ Administrative Memorandum No. 43. The committee previously existed under the sponsorship of AAI.

2. The duties of the Committee include recommending and reviewing plans for the rehabilitation of electric facilities. Rehabilitation plans have already been prepared by the Allied Control Commission in cooperation with the electric companies, for submission to the committee. Meanwhile, emergency rehabilitation is being carried out.

3. Rehabilitation work, which started in Southern Italy immediately following Allied liberation of the area last fall, is continuing. Of 3320 kilometres of high tension transmission lines, 2200 kilometres are back in service; 180 kilometres of line are currently under repair. The present monthly energy generation is 45 per cent of the 1942 figures, and the present generating capacity is 60 per cent of the pre war capacity.

4. More than 1,600 kilometres of high voltage transmission lines have already been repaired in Central Italy; 530 kilometres more are now under repair. In addition, 18,000 kilowatts of generating capacity in small plants have been placed back in operation. Repairs are being made to machinery having a total capacity of many times this figure, but most of this equipment is large and badly damaged, and a long time is needed to make repair parts. The present daily electricity consumption of Central Italy is slightly more than 10 per cent of the 1939 amount.

5. Some of the rehabilitation work has been under the direction of military units, district, and base sections. Other work has been under the control of the Allied Control Commission. In all cases, however, the rehabilitation work has enjoyed the cooperation of military units which when called upon, have furnished all possible assistance in the form of equipment, material, and personnel.

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6. The biggest difficulty yet encountered in connection with the rehabilitation program has been the lack of transportation. Any additional vehicles available would accelerate the present work.

...

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7. A recommendation was made by the Electric Reconstruction Committee on 8 August that 60,000 kilowatts of electrical generating equipment be imported for use in this Theatre of Operations. Duty officers of the Allied Control Commission are now in the United States to investigate the availability of this equipment, and to arrange for it to be sent here.

R.M. NUGAR
Colonel, C.E.,
Deputy Chief Engineer.

355:

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1-4

Gen office File

SUBJECT:- Production Reports. Rome Generating Plants.

21 SEP REC'D

104 C.R.E. A.P.O.
C.M.F.
Tel: 67023-4-5
Ref: CRE/EM/253

20 September 44

To:- Public Work and Utilities
Sub-Commission
Economic Section A.C.C.
(For attention Chief Elec.Util and Adm).

full
electricity
Central Stations

It is requested that production reports on the Generating Plants in Rome be submitted to this office.

These should be identical to those furnished by the Supply Coys to E & M Section of Region IV A.C.C.

Lt.Col. R. Bernard
Major R.E.
for C.R.E. 104 WORKS

JSWB/IV.

Lt. Col.
Chief Elec. Engr
Head of this record
Utility for export
of electricity the
factories these plants.
Lt. Col. [illegible] not necessary
at this time

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Tel. 489061

GER/mc

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

165

ACC/158/PWU

19 Oct. 1944

Subject: Electric Power.

To : The General Officer Commanding - Rome Area
Allied Command.

1. I enclose herewith a copy of AFHQ Memorandum N° 43 dated 5th Oct. 44.

This places heavy and direct responsibilities on this Sub-Commission of the A.C.C.

These are noted in paragraph 2 c, under 8 sub-heads.

Will you please pass the copy to Major Hughes, Chairman of the Electric Power Rationing Committee. Major Hughes was here to-day, when the whole matter was discussed.

2. In view of the considerably ~~extensive~~ outlined responsibilities of this Sub-Commission, I consider it advisable that it should be represented on the Rationing Committee i.e by an officer who is aware of the whole Power position.

The officer I wish to nominate is Capt. L.W. Laughlin and if this is agreable to you, and to Major Hughes, I shall be glad if you will so inform me.

E/F 25/10. O/C GER

Enclosure: copy of A.F.H.Q. Memorandum
1 copy to Economic Section (Att.Col. Densmore)

G.E. RHODES,
Lieut-Colonel, R.E. 353
Acting Director.

C/ER. - To see 332
GER.
19/10.

Declassified E.O. 12356 Section 3.3/NND No. 785019

164

Tel: 48908

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

V3R/lmm

ACC/158/PWU

25 October 1944

SUBJECT: Transmittal

TO : O.W. A.F.H.Q.
Attention Capt. Davy - S.C. (E. & M.)

Following previous agreements transmitted herewith is a map showing Regional Electric Company, and Frequency Boundaries of Italy.

E.J. BARRY
Major, C.E.
Acting Chief, Elec. Div.

Enclosure: 1 Map.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

MEMORANDUM

LWL/ac

162

24 Oct. 44

CC/158/PWU

Subject : Reimbursement of Soc.Meridionale di Elettricità, for expenses of moving Tuscania-Frattamaggior 60 KV line

To : FINANCE SUB- COMMISSION, ACC

From : P. W. & U. Sub-Commission

1) - Attached correspondence constitutes a claim in the amount of 419.636.00 Lire made by the Soc.Meridionale di Elettricità.

2) - Please route the matter through proper channels in order that the company may be reimbursed.

E.J.D ARRI
Major, C.E.
Acting Chief Elec. Div.

Enclosures
Letter 3/3/44 W/1 Ind.
" [illegible] W/ Ind.
" 12/6/44 W/7 Ind.

Declassified E.O. 12356 Section 3.3/NND No. 785019

(48) 21 OCT Recd 162

7 th Ind.

HEADQUARTERS
SOUTHERN REGION ALLIED CONTROL COMMISSION
APO 394, U. S. Army.

19 October 1944.

SUBJECT : Reimbursement of SOCIETA' MERIDIONALE DI ELETTRICITA', for Expenses of Moving Tusciano - Frattemaggiore 60 KV Line.

TO : Headquarters, Allied Control Commission
Public Works & Utilities Sub-Commission
(Att. Lt. Col. W.K. Lapper).

1. In the early part of 1944 the SOCIETA' MERIDIONALE DI ELETTRICITA' relocated a section of the Tusciano Frattemaggiore 60 KV line at the request of the Army Air Force Engineer Command.

2. Inclosed herewith, for necessary disposition, is the request which SOCIETA' MERIDIONALE DI ELETTRICITA' has presented for reimbursement of expenses incurred in moving the above mentioned transmission line.

For the Regional Engineer :

RAR/rb

R. A. RYAN
Capt. Sig. Res.

Enclo.

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R 161

Tel. 489081

VSR/ads

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

23 October 1944

ACC/158/PWU

Subject : Discontinuance of weekly written reports from Terni Co.

To : Terni Company, Rome.

At present time reports concerning energy generation and energy consumption are obtainable by telephone from your Villa Valle Sub-Station. It has been found that this method of obtaining this information is completely satisfactory and it will no longer be necessary to send this information as a written report each week. At this time we wish to thank you for your cooperation in making the written reports available.

E.J. BARRY
Major, C.E.,
Acting Chief, Elec.Div.

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File 160

Tel.48961

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LWL/ne

ACC/PWU/WU

18 October 1944

Subject : Log of Major R.A.Bell

To : Lt.Col.W.E. LATTER - Chief Elec. Div .
EC. TUSCAN REGION (Att.Regional Engineer)
EC. LAZIO-UMBRIA REGION (Attention Regional Engineer)
P.B.S. ENGINEERS (Attention Lt.Col.C oxley)
PROVINCIAL COMMISSIONER - Terni (Attention Maj.Lee)
EC. 5TH ARMY AMG (Attention Capt.Gaither)

I) - Attached herewith is copy of the log of Maj.R.A.Bell for the period October 7th to October 16th inclusive.

L.J.BARRY
Major, C.E.
Acting Chief Elec.Div.

1 enclosure

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HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LOG OF MAJOR R.A.BELL

October 7th - Rome

Conference with Maj.Benton. Checked disturbing tele.zone lines to Villa Falle (satisfactory).

October 8th

Journey to Lanciano. Heavy rains; spent the night at Falicnia due to bridges out.

October 9th

Arrived Lanciano - conference with Eng.Rossi. Informed him to expect castings from Terni during first part of December. All work at Castelnuovo Plant will be ready. Transport 5 or 40 ton generator (Lanciano to Castelnuovo) and 40 ton (?) transformer needed immediately. Col.Cooley contacted on this and agreed to furnish when available. Major Price please check this. This 12,000 KW generator will be ready for operation about February 1st, complete with 132 KV transformers. The rehabilitation of 132 KV lines belonging to State Railways should be started at once. (Major Benton please handle).

October 10th

Journey to Livorno - Pisa.

October 11th

Journey to Florence.
Conference with Capt.Gaither and Maj. Lee. Telephoned Col.Cooley. Conference at Valdarno Company arranged for 11 A.M. October 12th.

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October 12th

Journey to Lanciano and return to Florence.

October 13th

Conference with Capt.Gaither. Received copy of report on power

./.

Declassified E.O. 12356 Section 3.3/NND No. 785019

plombe in 5th Army Area (turned this over to Maj.Berry). Also copy of request for materials from Capt.Rogers for quick rehabilitation of 1000 KW generating station. Capt.Rosson to call me in home later to inform me of material ACC is to provide.

Conference with Maj.Lee. Gave him copy of claims request from Lordsville employee resulting from bicycle collision with Army truck. Asked Maj.Lee to check on Lordsville wage increase request and let me know.

Conference at Valdarno Co. Lt.Col.S.A.K.Smith, Lt.Col.Cooley, Lt.Col.Page, Lt.Col.Morris, Maj.Lee, Maj.Kinet, Maj.Richardson, Capt.Rosson, Capt.Gaither and myself in attendance. Discussed October 5th directive from AFHQ setting up electrical rehabilitation board. Set up local rehabilitation committee consisting of ACC Rep., AAI Rep., PBS, Army District, and civilian from local power company.

Called in General Manager of Valdarno Company and informed him that above committee had been formed. Asked him to prepare report (six copies) on general situation in his company regarding necessary rehabilitation so that committee could set priorities. Manager agreed to have plan ready for meeting in room 11 A.M. October 18th. I instructed Maj.Lee to represent ACC H.Q. at the above meeting unless otherwise informed.

Journey to Rome.

October 14 th

Conference with Maj.Berry. Necessary to push completion dated of r repair work on Castel Madama, Bandela and Colfiano at Terni Steel Works.

Conference with ACCA Engineer and Eng.Irvine regarding above plants

	Terni Sat.Co mpl. Date	ACCA desired Comp. date
- Castel Madama	April 10th	February 15th
- Bandela	April 15th	March 15th
- Galiano	May 10th	April 15 th

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October 15th

Telephoned Cooley at Terni Steel Works needs lumber for pattern shop. Shortage is retarding also trical rehabilitation projects. Requested him to talk this over with L.A.Simpson.

./.

Declassified E.O. 12356 Section 3.3/NND No. 785019

October 16th

Journey to Terni.

Conference with Director De Angeli of Steel Works. Discussed above power plants. Eng. Angelucci of ACSA was at Terni ten days ago and was surprised at dates set for completion of above work. Returned later with Eng. Bonito (Italian Government Commissioner) and official of Rome Municipality. This group informed De Angeli that it was impossible to accept completion dates as set. (ACSA has since been informed not to contact Terni Steel Works regarding this without first notifying P.B. & U. Sub-Commission ACC). Central Italian pattern was aborted yesterday. Pattern shop is fully loaded at present. I asked De Angeli if he could use additional skilled pattern workers. The answer is no. De Angeli agreed to push these three plants as much as possible and could gain about a month on their previous estimate.

Conference with Lt. Simpson. He agreed to investigate all electrical rehabilitation work going on and give me an answer as to whether it could be pushed more or not. Morale of the employees is good. They realize that the electrical rehabilitation is for the good of Italy instead of the Allies. Lt. Simpson has ordered lumber for pattern work.

Conference with Capt. Briggs. Return to Rome.

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Tel: 459081

VBR/lam

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

159

ACC/PWU/PSU

16 Oct. 1944

Subject: Availability of Electricity, Rome.

To : Electricity Contol Board, Rome Allied Area Command.

1. Reference is made to your letter dated 5 October, File G 463 (G-4) Subject: Electricity, and which inquired as to the date that 36,000 KW will be available in Rome.

2. As explained to the 12 October meeting of the Electricity Control Board by Major Vinal S. Renton of the Electrical Division, every effort is being made to have 39,000 KW available for distribution in Rome by 31 October. The sources of this power would be:

Plant	Kilowatts available in Rome
Ceprano	7,000
Farfa II	4,000
Rome	20,000
Tivoli Plants	8,000
	39,000 KW

3. Comments concerning each of the above plants follow:

(a) - CEPRANO - This plant is not yet in operation. The units are still being dried out and general progress has been slow. As of 12 October, an officer of this Division is being assigned to concentrate all of his attention on this and the Ceprano plants, for the purpose of expediting the work. Previous to this time, there has been no one available for this assignment.

(b) - FARFA II - Work at this plant is well under way, and little difficulty is expected in having this plant operate by 31 October. An officer is also being assigned to expedite this work.

(c) - ROME - The steam plants have a name plate capacity of 32,000 kilowatts, but because of many breakdowns have not averaged much over 20,000 kilowatts for the past month. In general, the interruptions have not been confined to specific pieces of equipment,

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and they have occurred because maintenance has been lacking for many years. Up to now, there has neither been time nor personnel to give the equipment the needed thorough inspection and over hauling. Time is still lacking in which to make inspections and repairs.

(d) - TIVOLI plants - These plants are supplying Rome now. This supply is subject to occasional interruptions because of transmission line outages. In general, these outages would be of short duration.

4. The above generating capacities may be changed appreciably by 21 October, the date of the next Electric Power Committee meeting. Your Board will be kept constantly informed of the situation by Major Ranton's office. In the event that additional generating capacity from the Rome steam plants is not available by 21 October it is respectfully suggested that the Rome Allied Area Command submit to the Electric Power Committee a request for 25,000 kilowatts of hydro-generated power plus the available output from the Rome steam plants.

E.J. BARRY
Major, C.E.
Acting Chief, Elec.Div.

c.c. - Capt. T.F. Neff - MAAC
Lieut. E.P. Wade-Brown - Lazio Region.

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84 ENS/SC 158

158/FMU

16 October 1944

Subject : Electric Power Committee Genoa

To : ALLIED FORCE LOCAL RESOURCES SECTION
R.A.A.C. - C.M.F.

1) - Reference your letter dated 30 September 1944 - file LRS/2154/4, paragraph 2, herewith of representative and alternate of Chief Commissioner Allied Control Commission :

Representative Lt.Col.W.M.LAUGHLIN (R)
Alternate Capt.L.W.LAUGHLIN (A)

ELLERY W.STONE
Commodore USNR
Acting Chief Commissioner

cc : Economic Section ACC

Documents from ex Ministry of Economics in Salerno and Southern Italy.

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2 SEP Recd

T. n.f.+ U. (East River Comm.)

ALLIED FORCE LOCAL RESIDENCES SECTION
R.A.A.F., C.E.F.

30 Sep 44.

LRS/218A/4

Telephone: ROMA 66275.

SUBJECT: Electric Power Committee - Members.

TO: HQ, AAI.
No. 1 District.
No. 2 District.
No. 3 District.
CE, FBH.
RAAO.
DRER.
ACC.
Electrical Reconstruction Committee.

1. Reference para. 3 of the eleventh meeting of the Electric Power Committee held on 28 Sep 44.

2. You have been given representation on this Committee. Would you please be kind enough to notify this Section of the rank and name of your representative, and the substitute who will attend in the event of his absence.

H. J. B. Loudon, Captain,
for Brigadier,
A.F.L.R.S.

HEADQUARTERS
30 SEP 1944
A. C. C.

BJH/cea.

Capt Jewell
Engineering
A.C.C. G.H.Q.

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File 157

Tel: 489082

VSR/bb

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

15 Oct 44

SUBJECT: Transmittal of Electricity Consumption Graphs, Italy.

TO , Allied Force Local Resources Section F.A.A.C. CMF.

1. In accordance with the request contained in your 10 October letter, File LRS/218D/8, Subject: Electricity Consumption and Electric Plant Condition Graphs, Italy, these are transmitted herewith one set each of graphs relating to electricity consumption in Central and Southern Italy. In order to conserve sensitized paper, wide dissemination of these graphs has been discontinued, and the information contained on them has been prepared in tabular form, instead. In your letter dated 10 October, you have acknowledged receipt of this information. This Sub-Commission is continuing to prepare the data graphically, and hereafter each month will send one set of prints to your section.

2. Up to now, there have been no graphs prepared to show electric plant conditions in Central Italy. A report is prepared here every two weeks to show the progress being made in rehabilitation, and each report contains a foreword which mentions any outstanding occurences that have taken place since the preparation of the previous report. A copy of this report is also being sent to you, each time that it is issued.

R.J. BARRY,
Major C.E.,
Acting Chief Elec. Div.

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Enclosure: Graph of Electricity consumption in Central and Southern Italy.

Declassified E.O. 12356 Section 3.3/NND No. 785019

11 OCT Rec'd 051/CB

ALLIED FORCE LOCAL RESOURCES SECTION
R.A.A.C.
CMF

LRS/218D/8 10 October 44.

SUBJECT : Electricity Consumption & Electric Plant Condition Graphs, ITALY. September 1944. Telephone: ROME 66275

TO : HQ ACC Public Works and Utilities Sub-Commission.

Reference ACC/051/PWU dated 23 Sept.44, 3 Oct.44, 4 Oct.44 and 6 Oct.44.

1. Receipt is acknowledged of the statistical reports on Electricity Consumption, Southern Italy and Central Italy and on Electric Plant Condition, Central Italy - all for the month of September 1944.

2. It is requested that the graphs supplementing these reports, mentioned in para.1, similar to those previously sent, may be supplied as soon as they are available, and if not so available, such fact may be reported to this Section.

IF/rgf

HEADQUARTERS 11 OCT 1944 A. C. S.

S.J.B.IOUEN, Capt,
for Chiefs of Section,
A.F.L.R.S.

May Hunter
Can you take care of this?

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GRAPHS OF

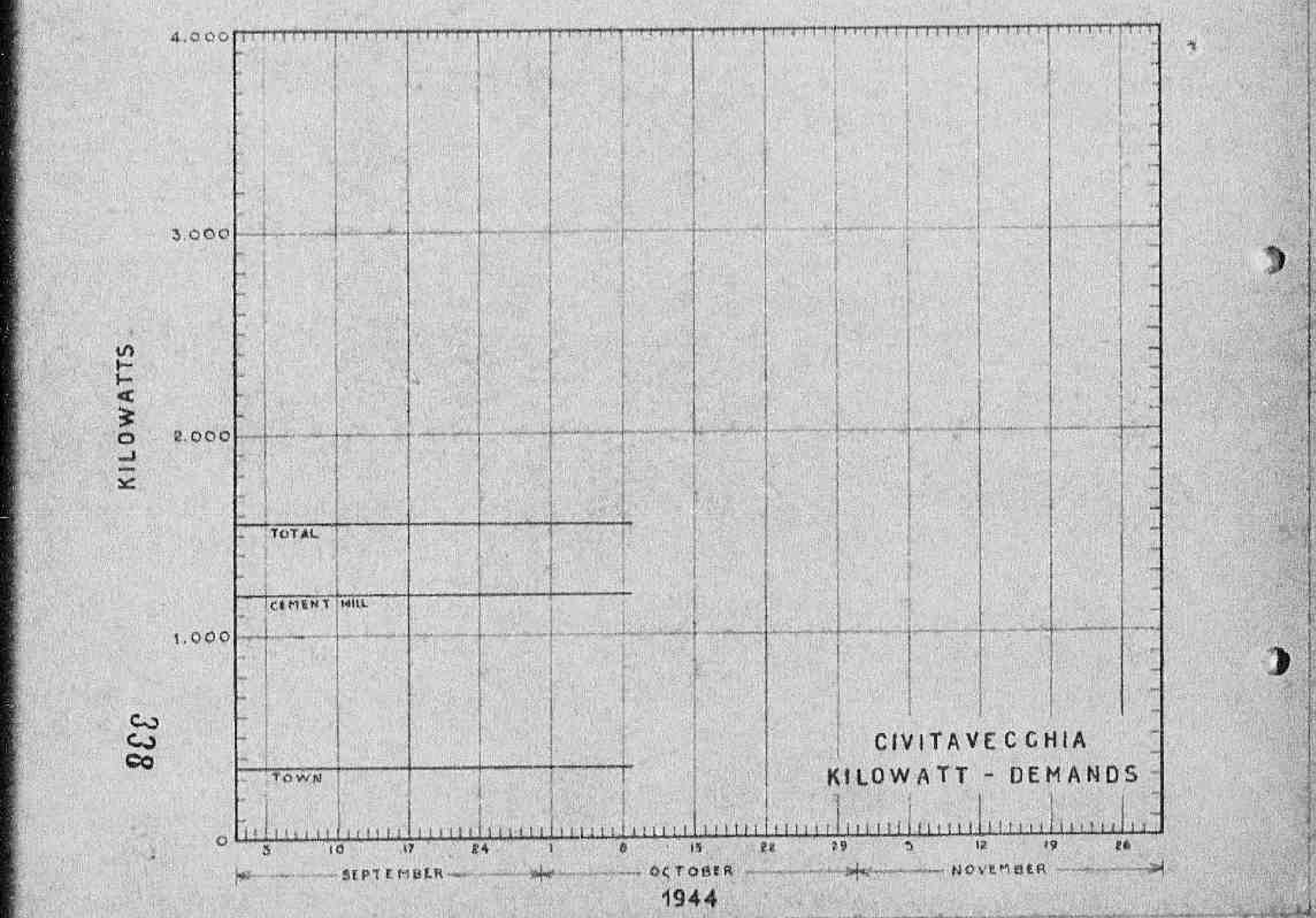
ELECTRICITY CONSUMPTION

CENTRAL ITALY

1 September to 1 October, 1944

ELECTRICAL DIVISION
PUBLIC WORKS AND UTILITIES
SUB-COMMISSION
AFO 394

Declassified E.O. 12356 Section 3.3/NND No. 785019



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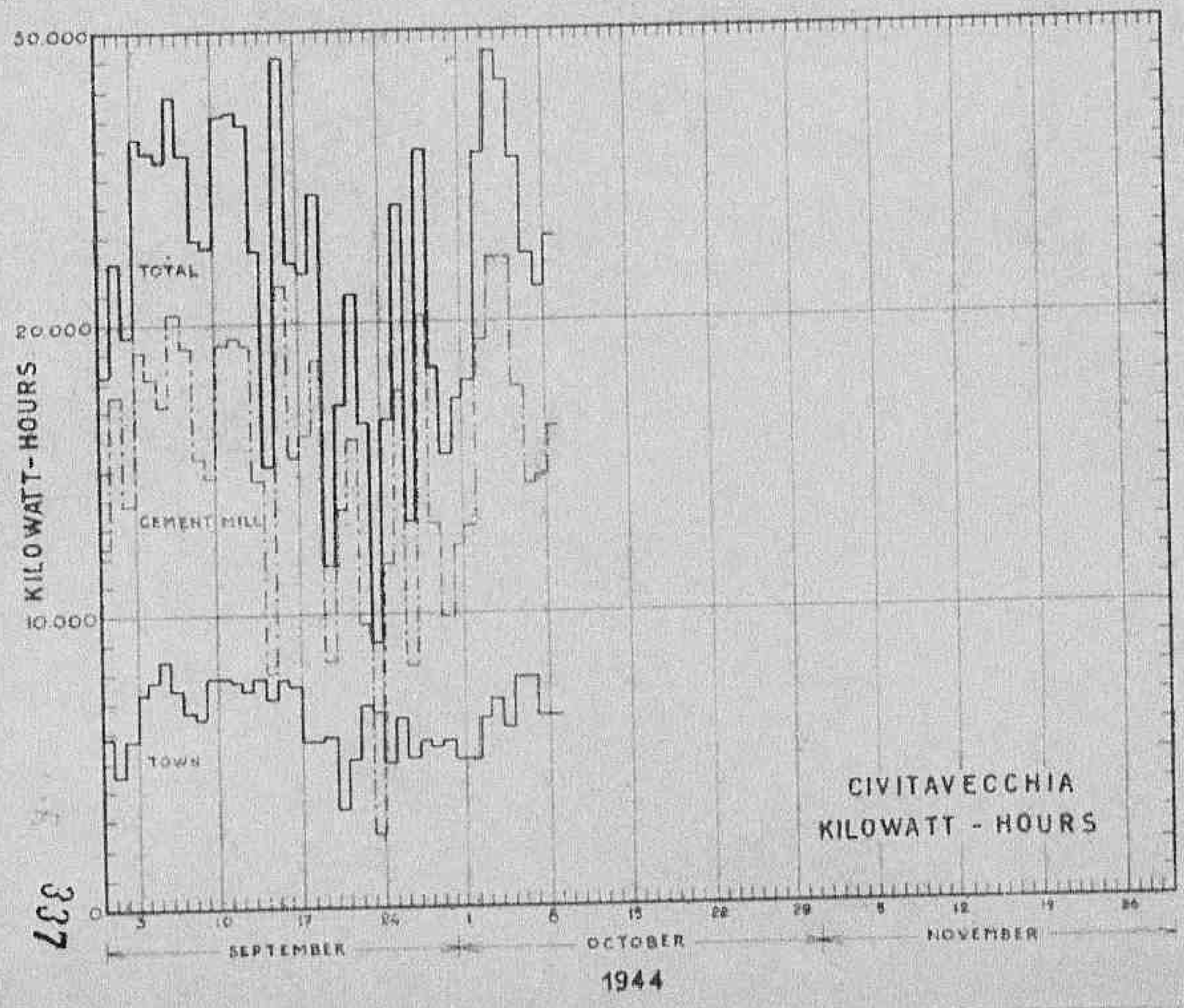

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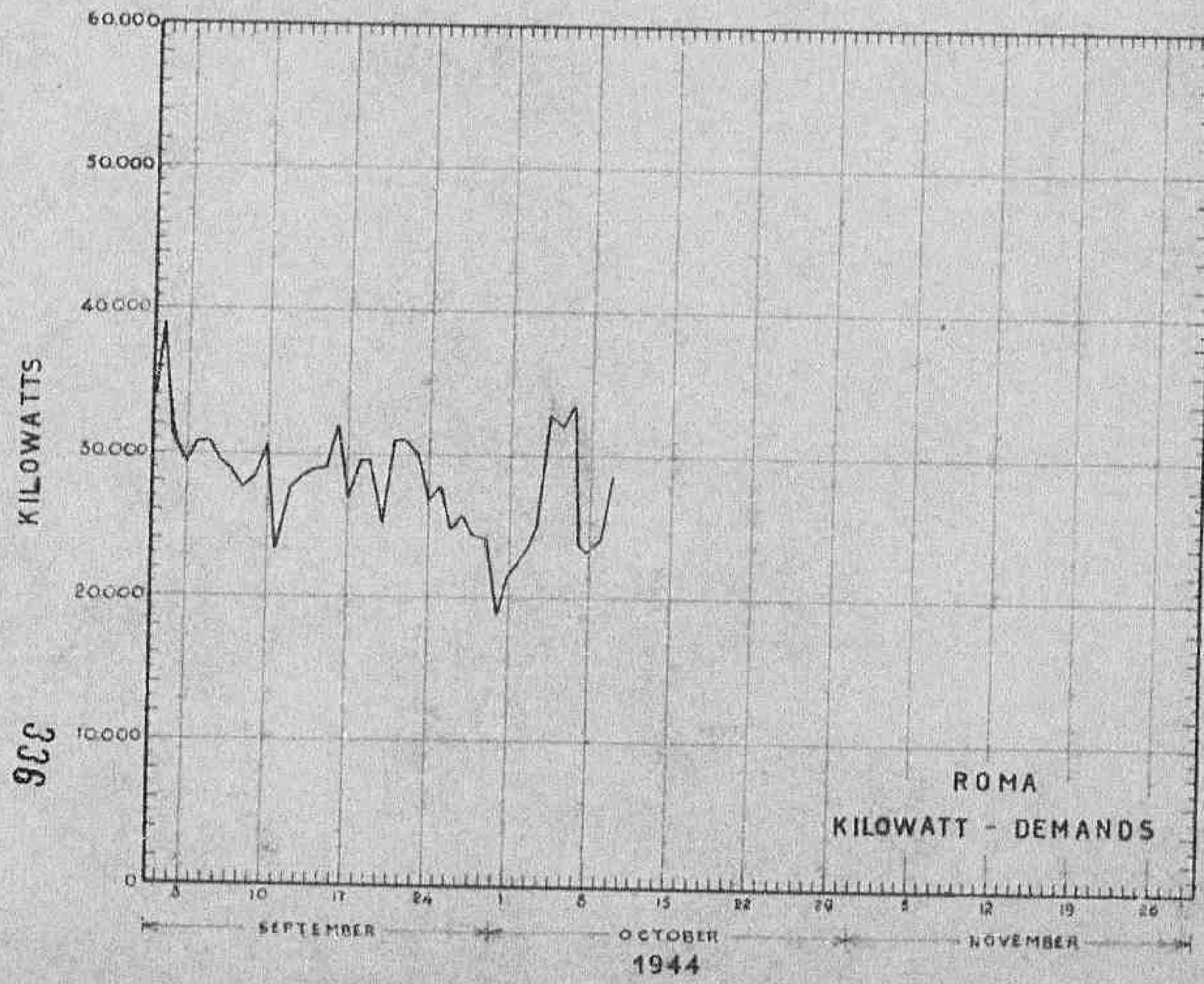

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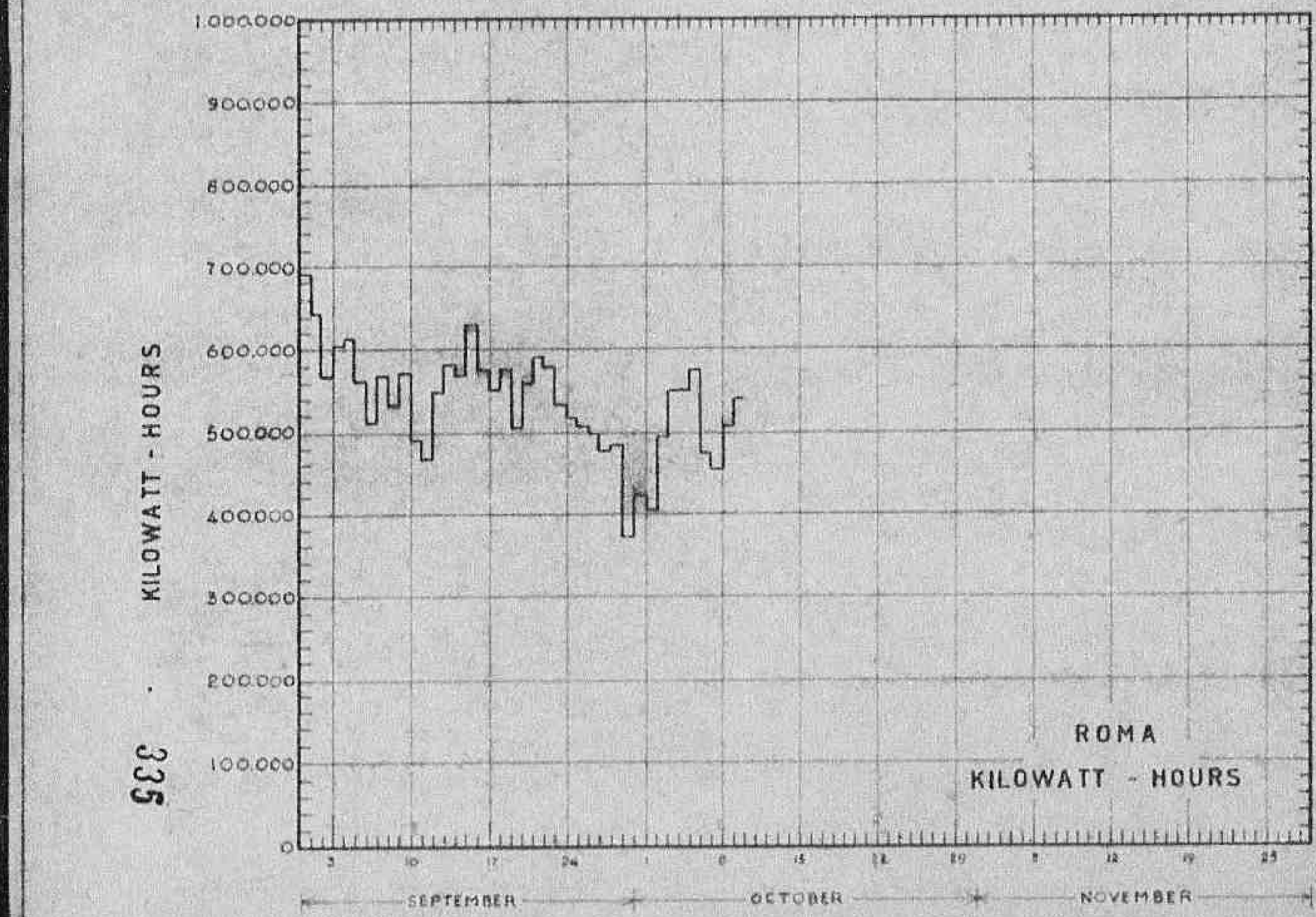

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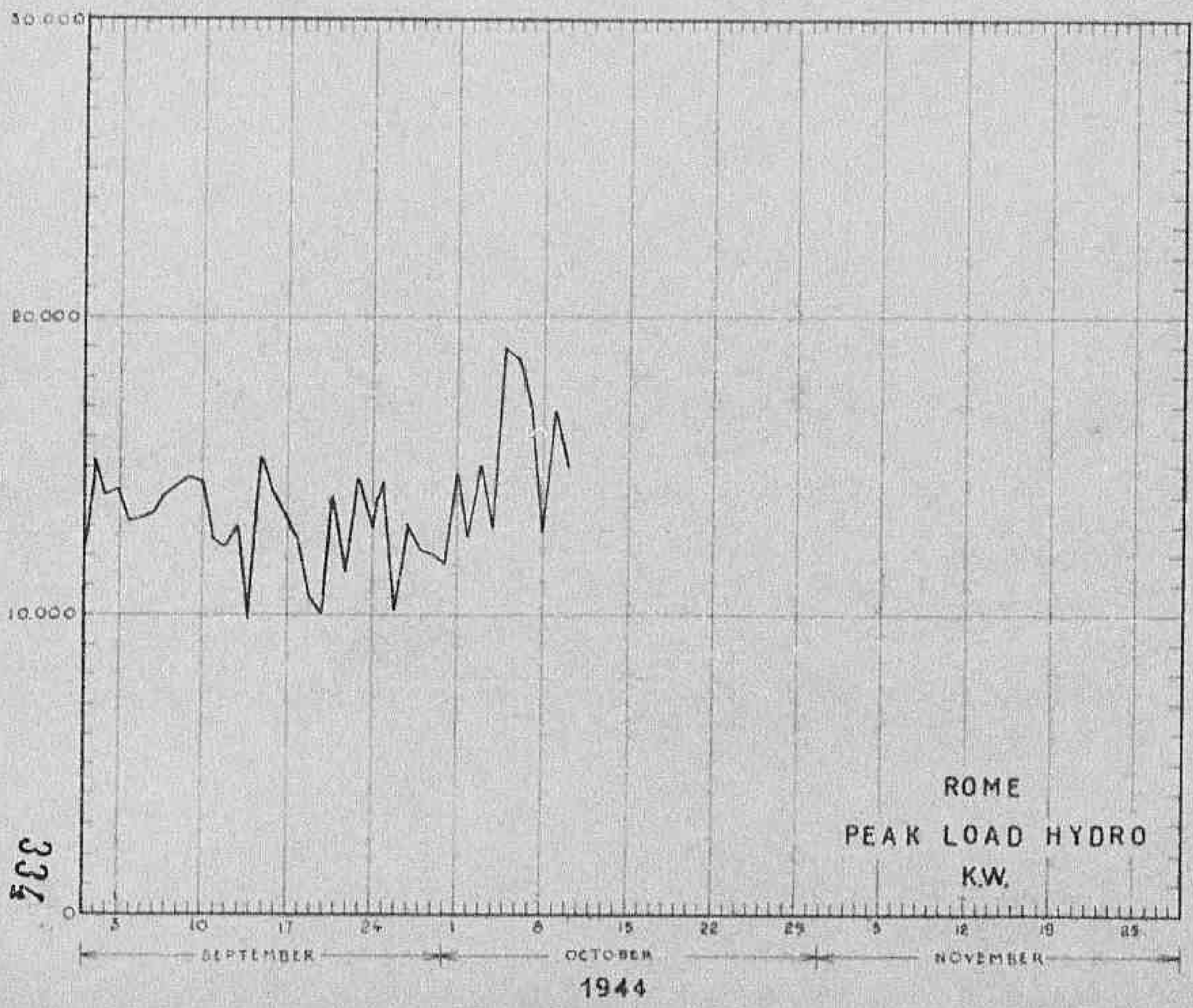

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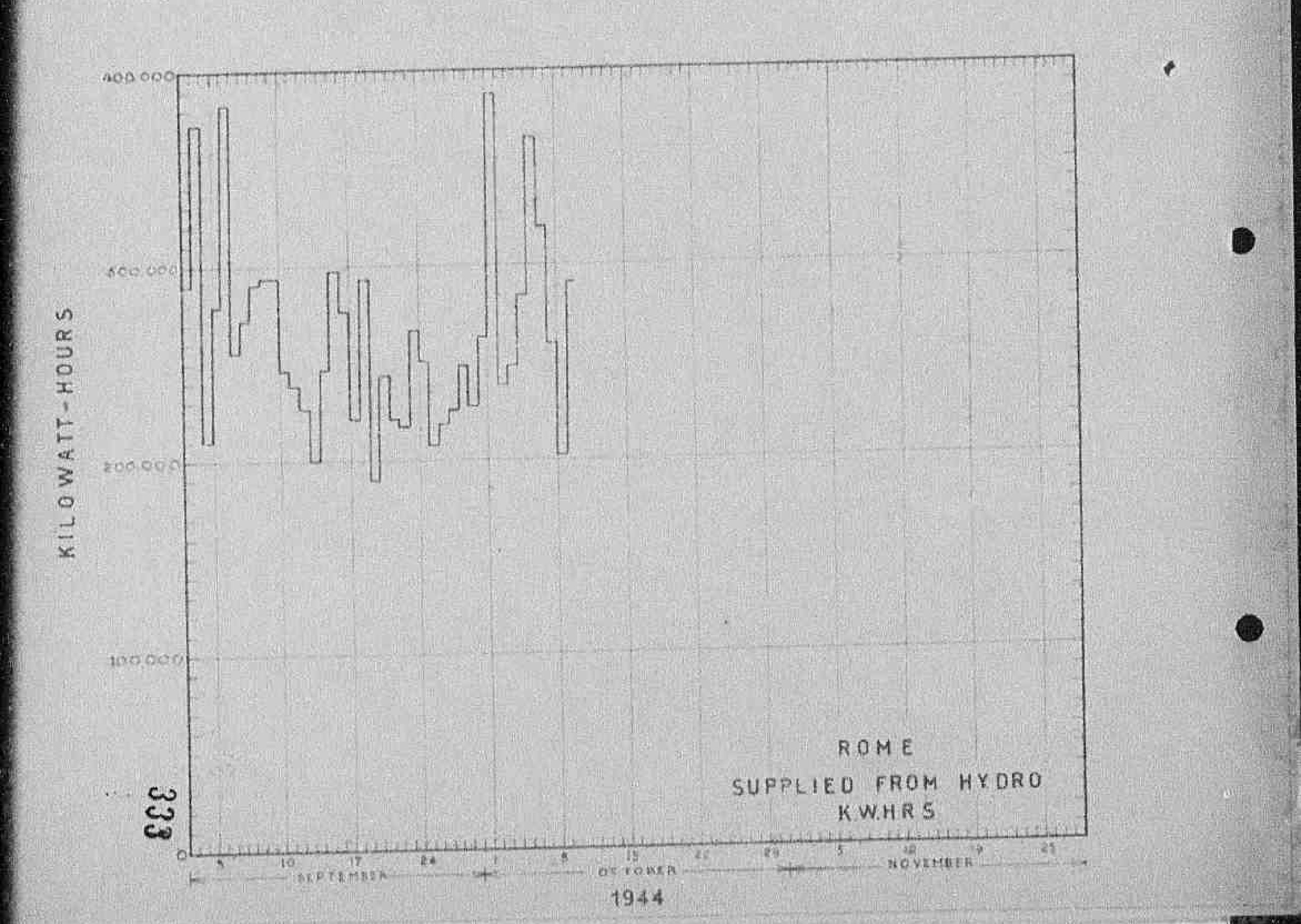

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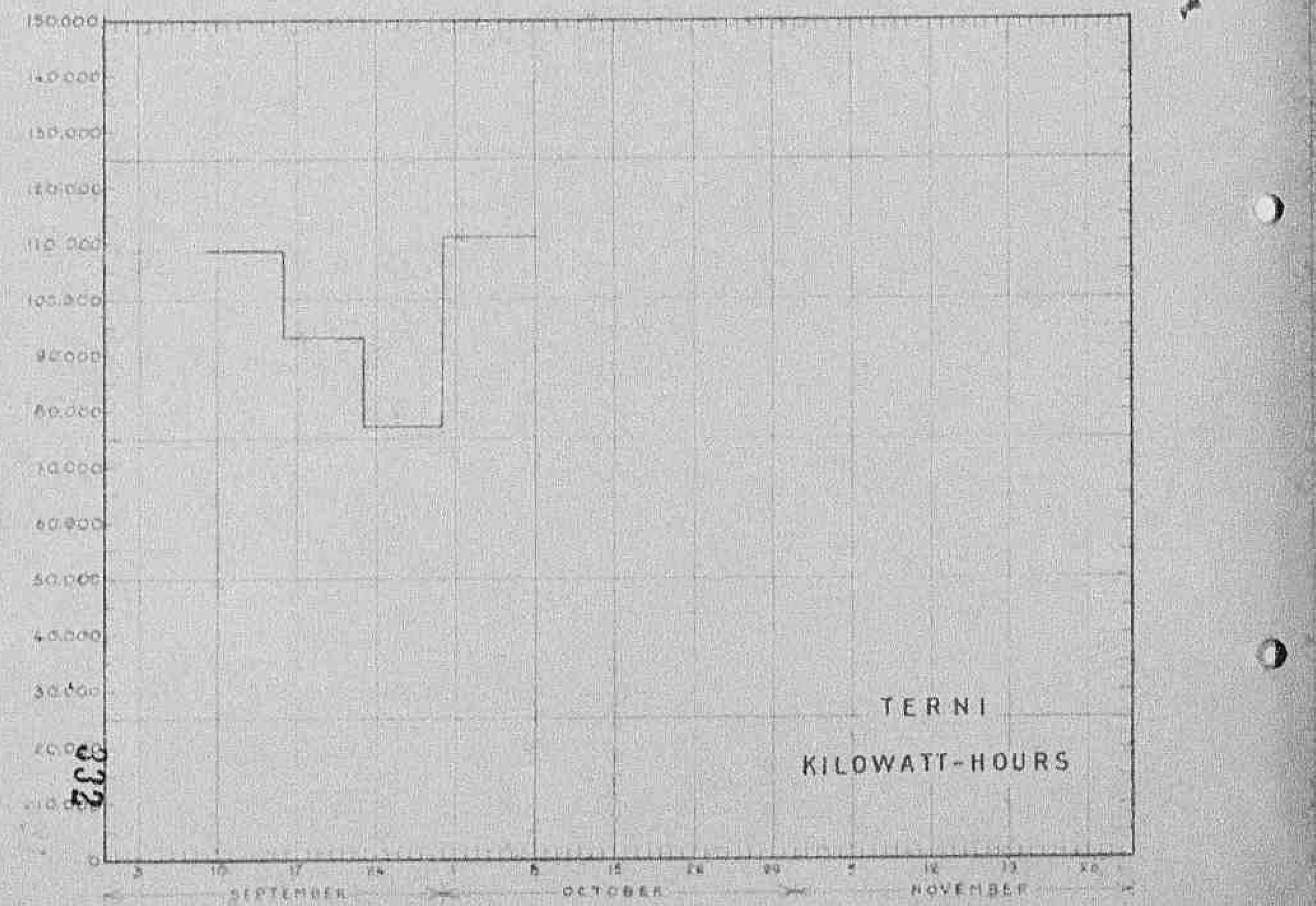

1944

Declassified E.O. 12356 Section 3.3/NND No. 785019

GRAPHS OF
ELECTRICITY CONSUMPTION
SOUTHERN ITALY
1 JANUARY TO 1 OCTOBER, 1944

ELECTRICAL DIVISION
PUBLIC WORKS AND UTILITIES
SUB-COMMISSION
HEADQUARTERS ALLIED CONTROL COMMISSION
APO 394

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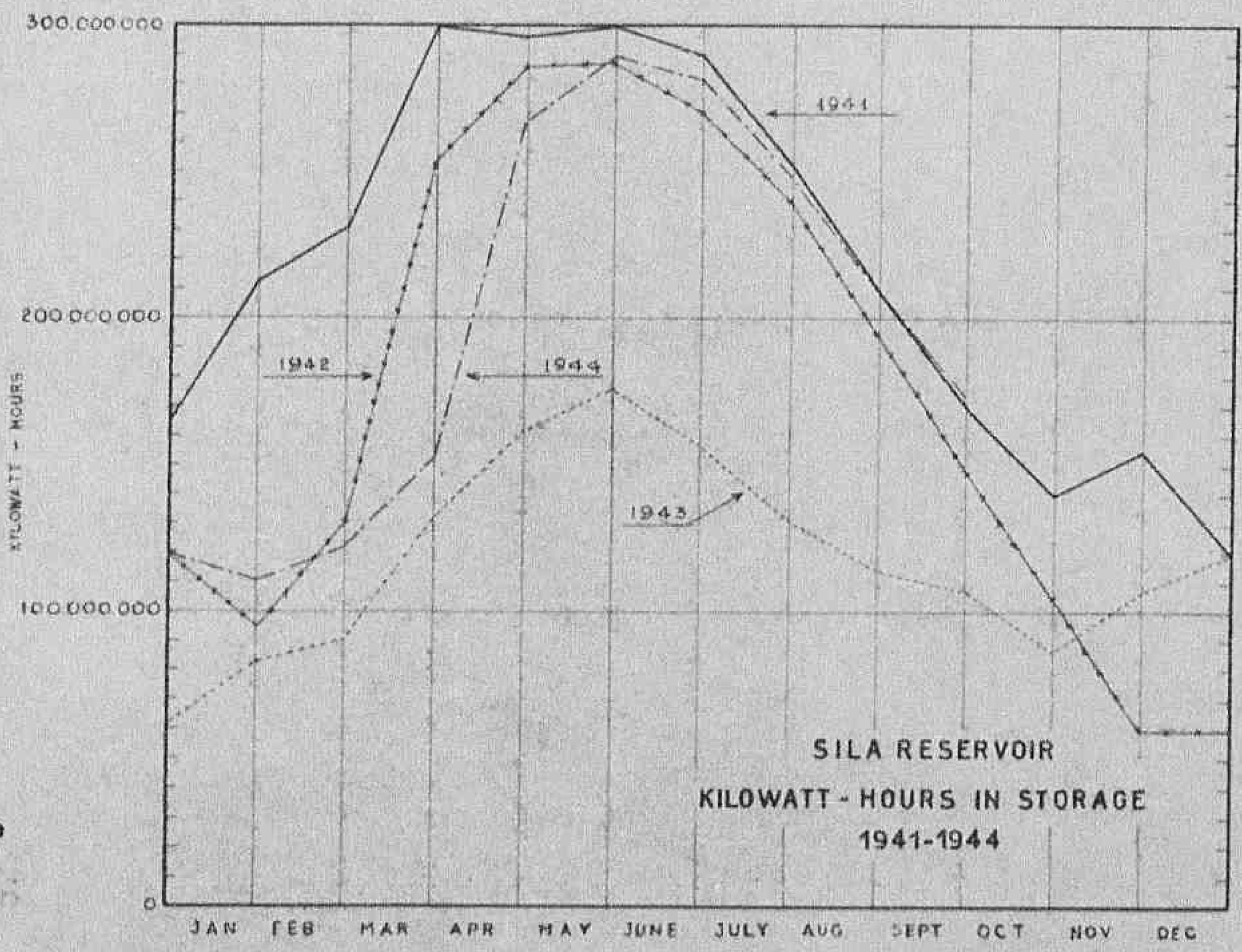

SILA RESERVOIR
KILOWATT - HOURS IN STORAGE
1941-1944

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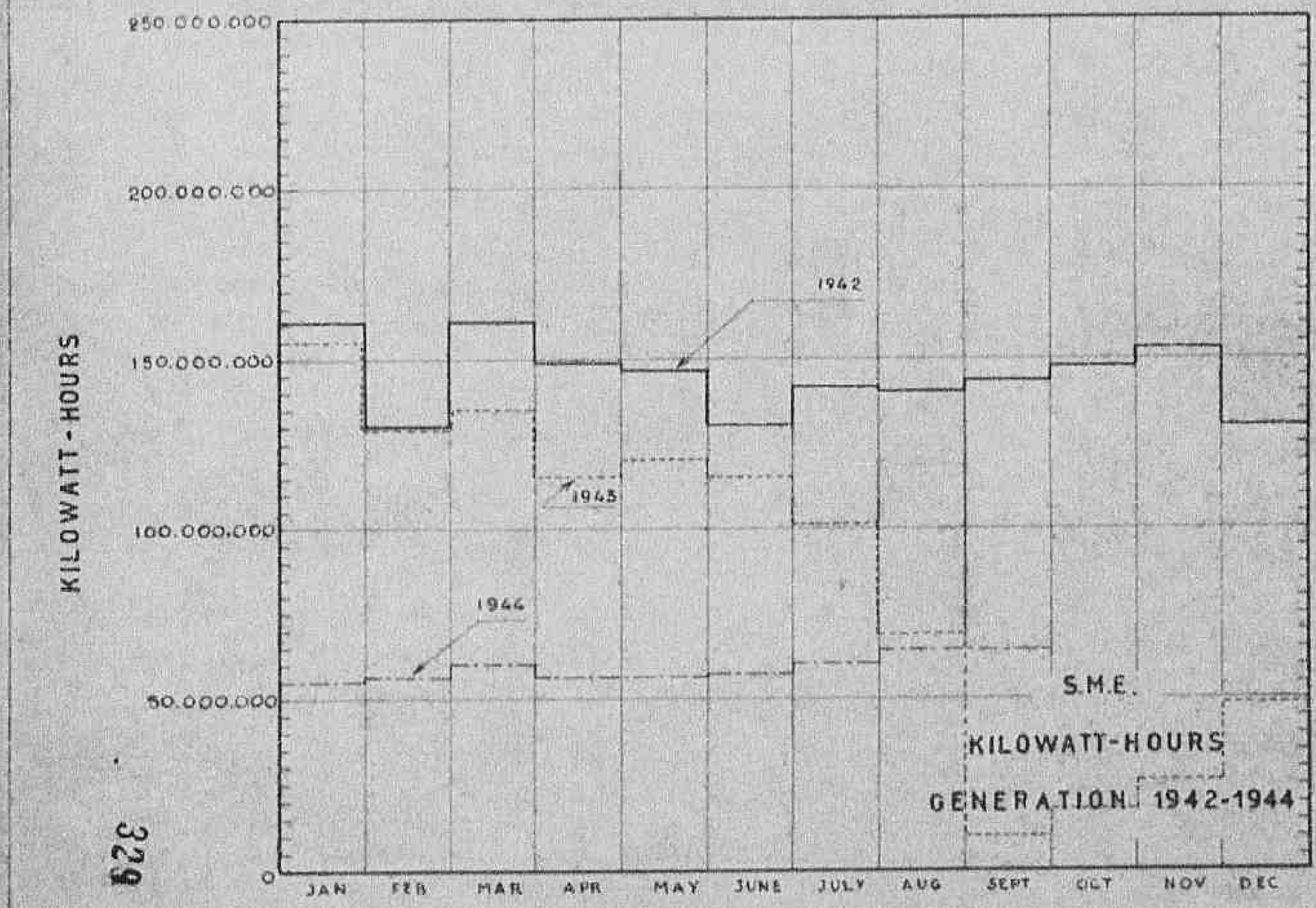

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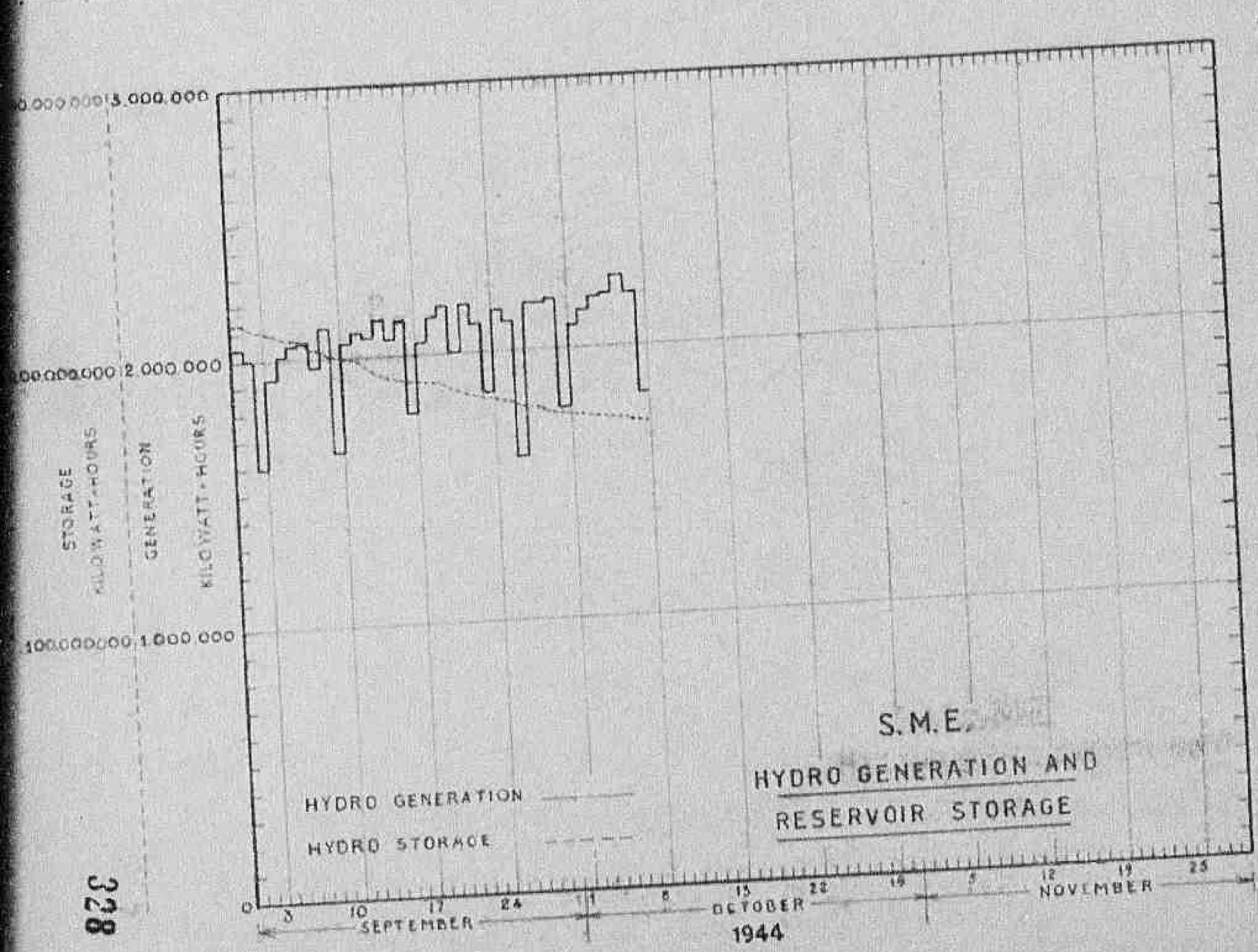

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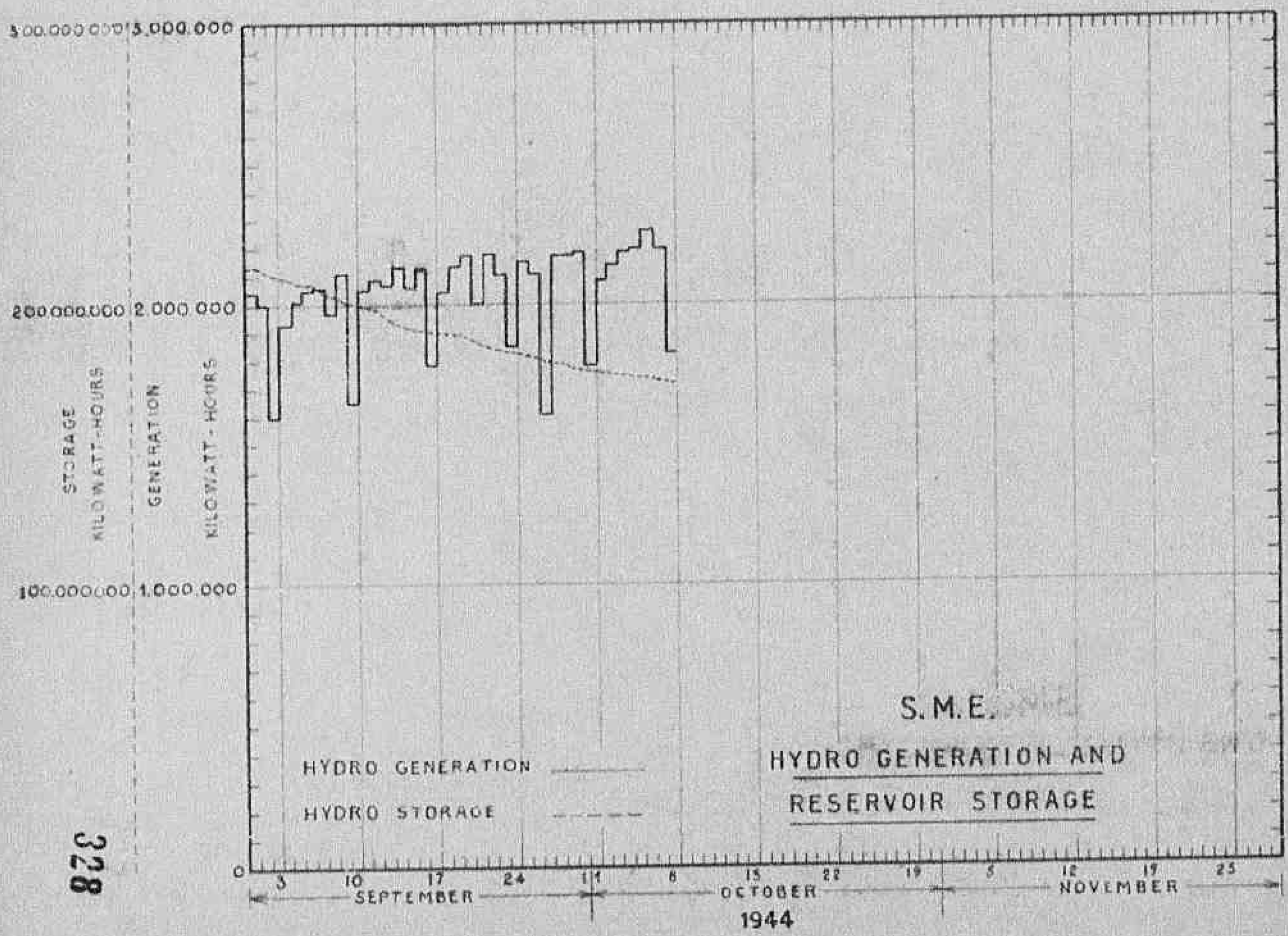

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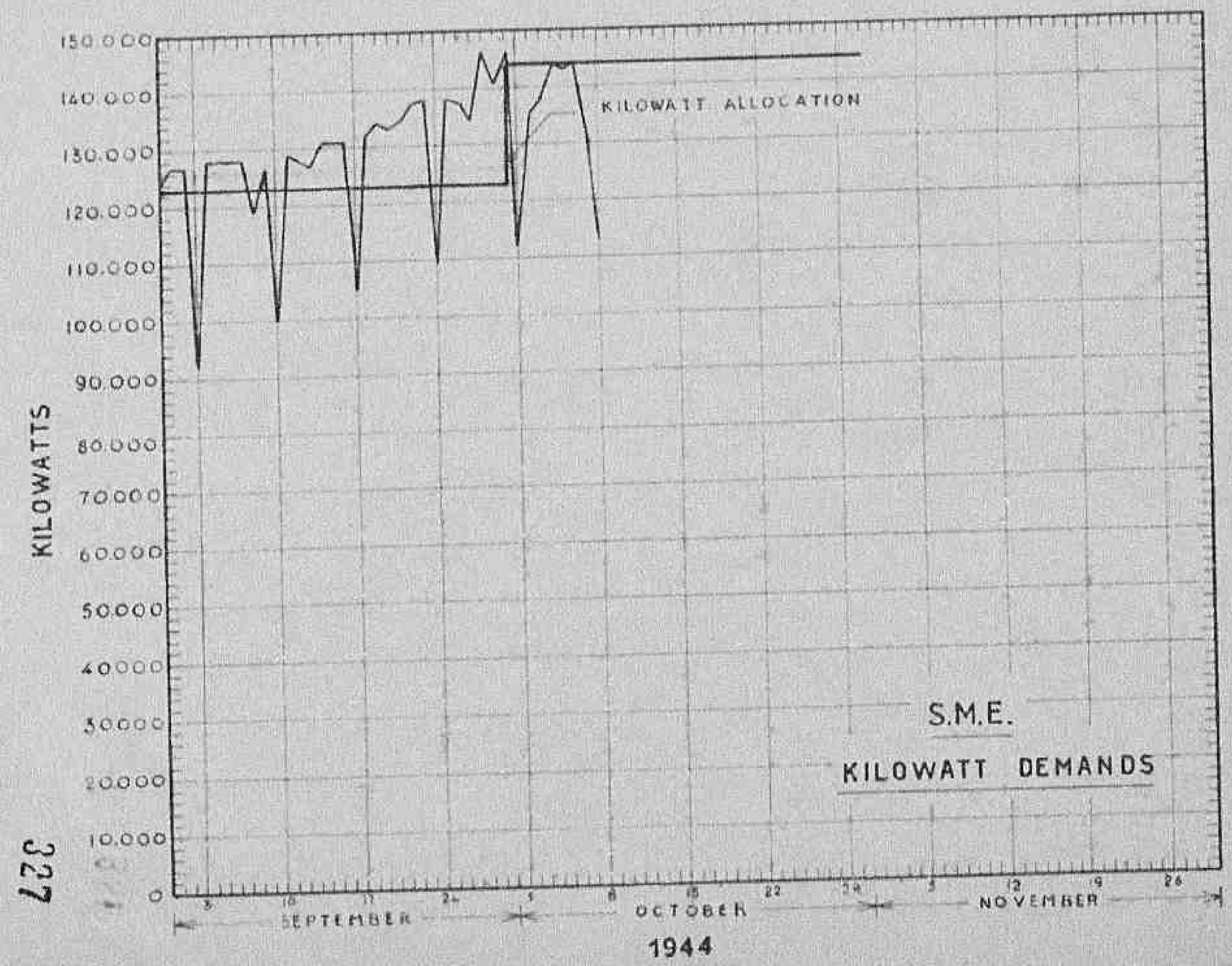

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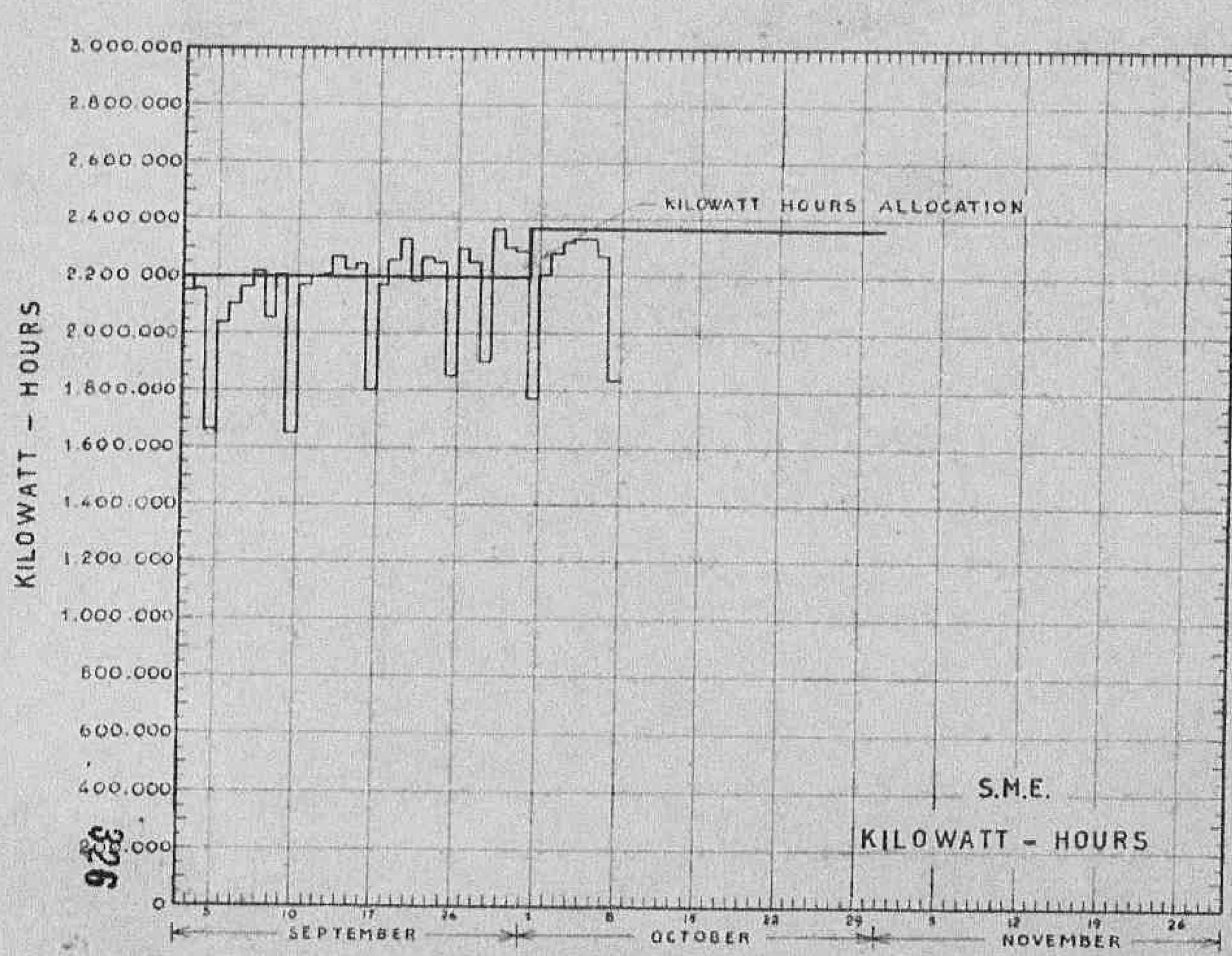

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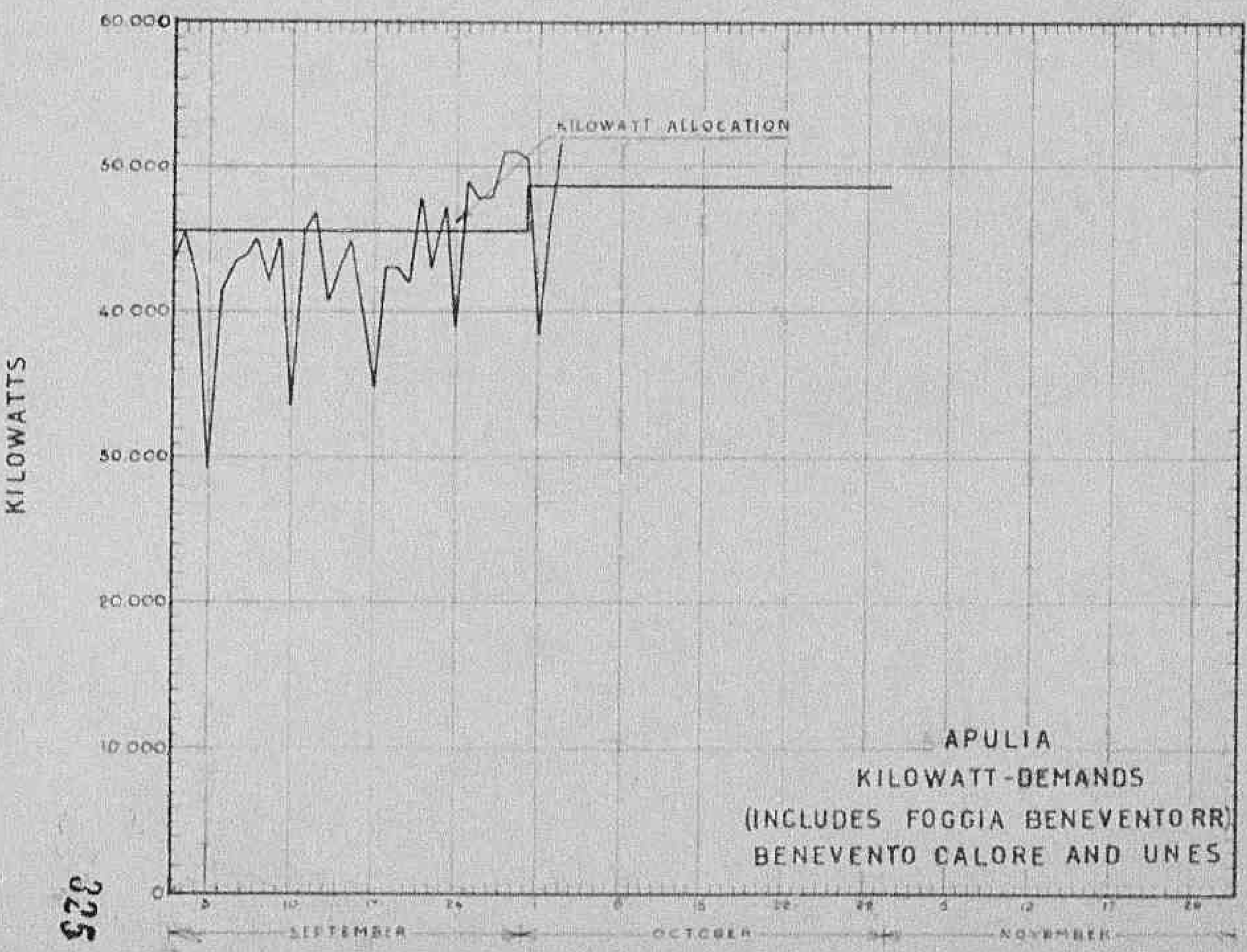
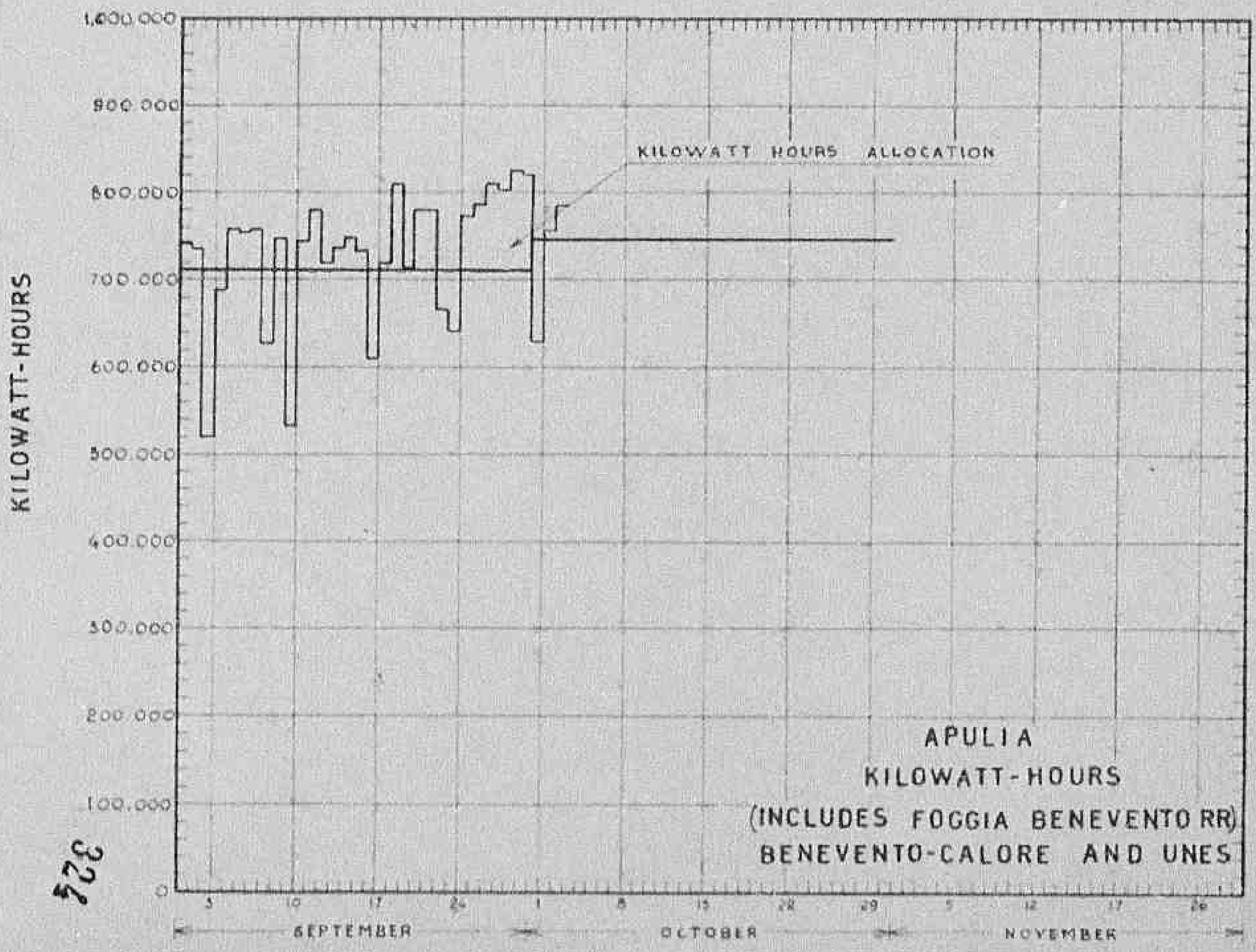


Declassified E.O. 12356 Section 3.3/NND No. 785019



324

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323

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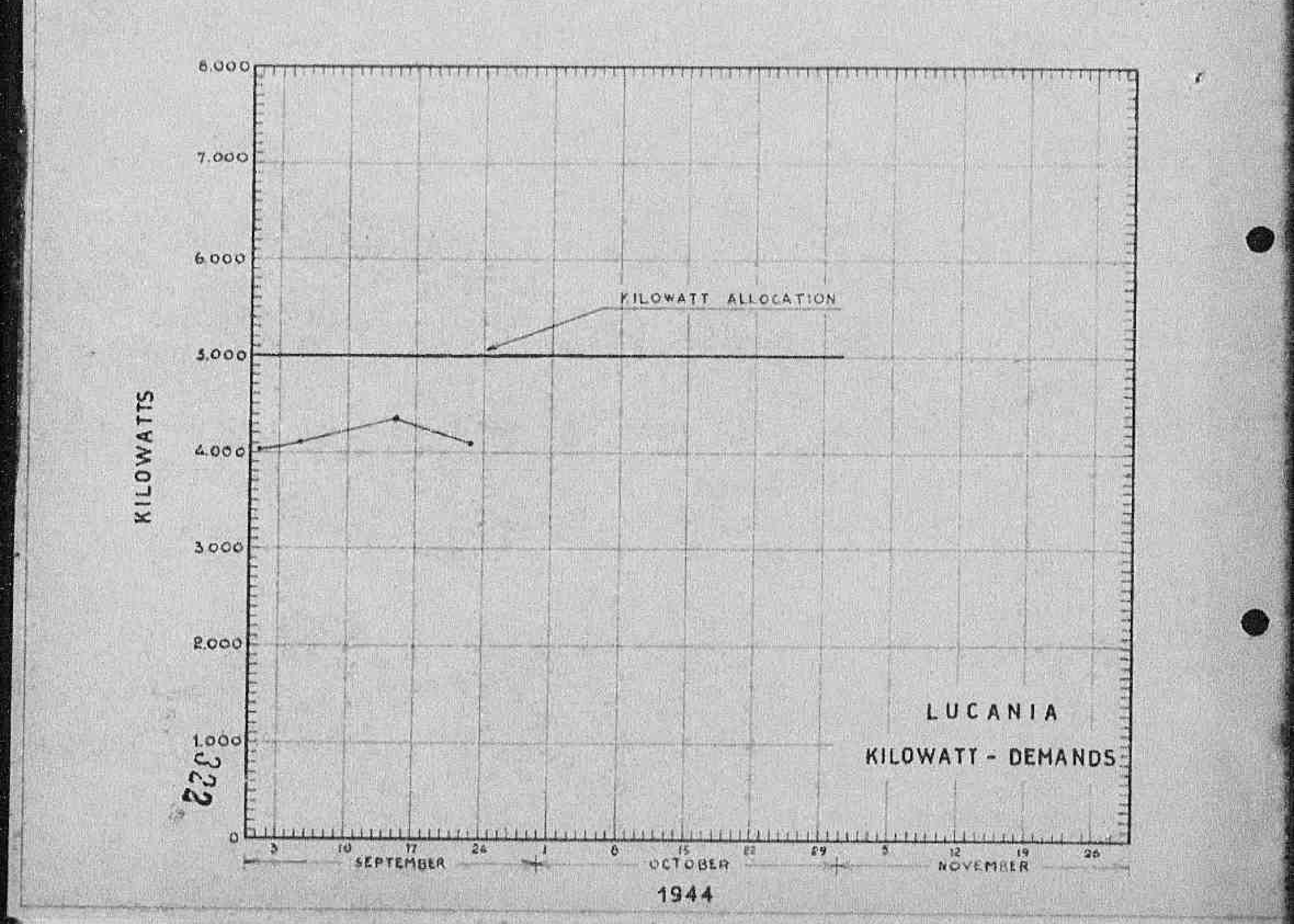

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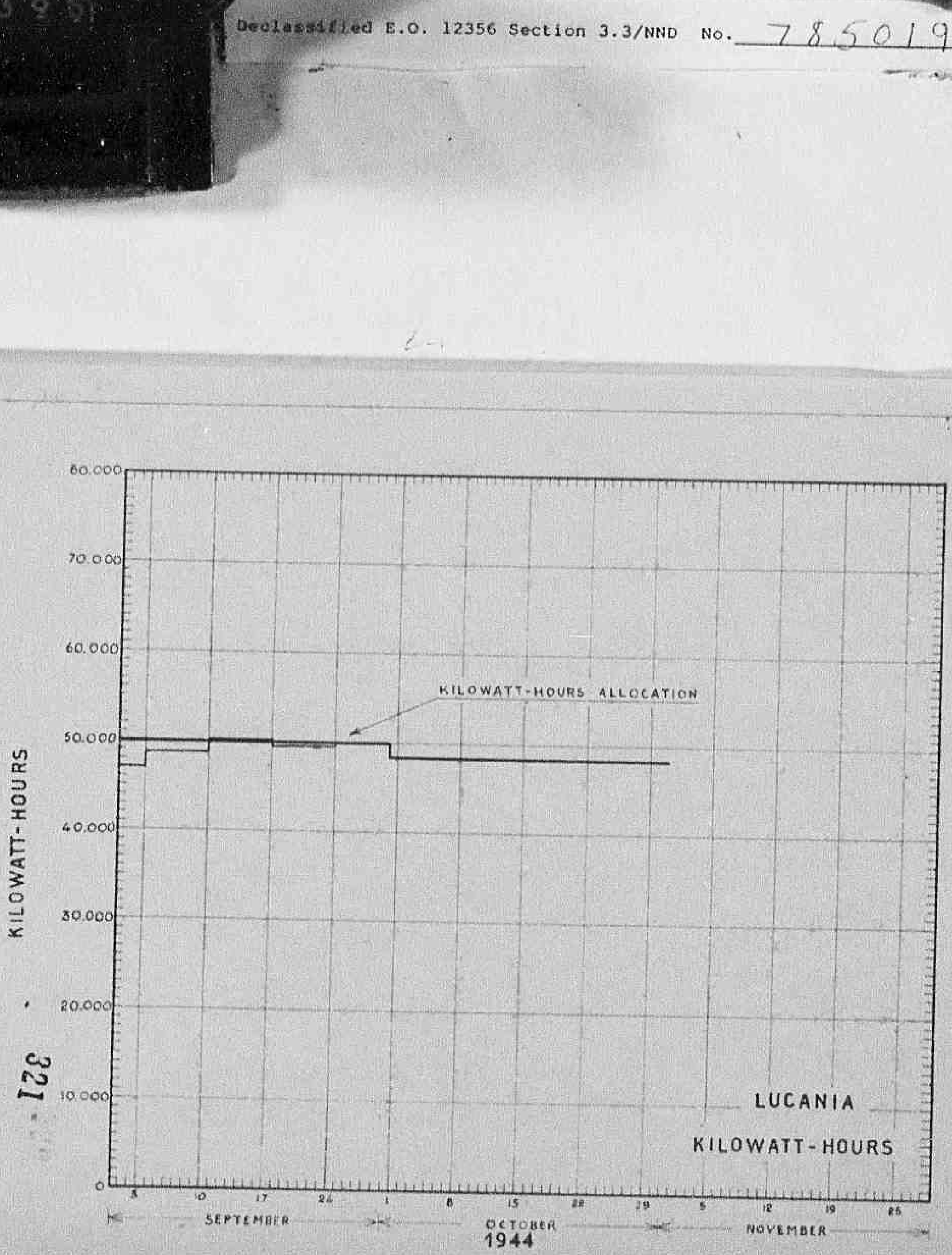

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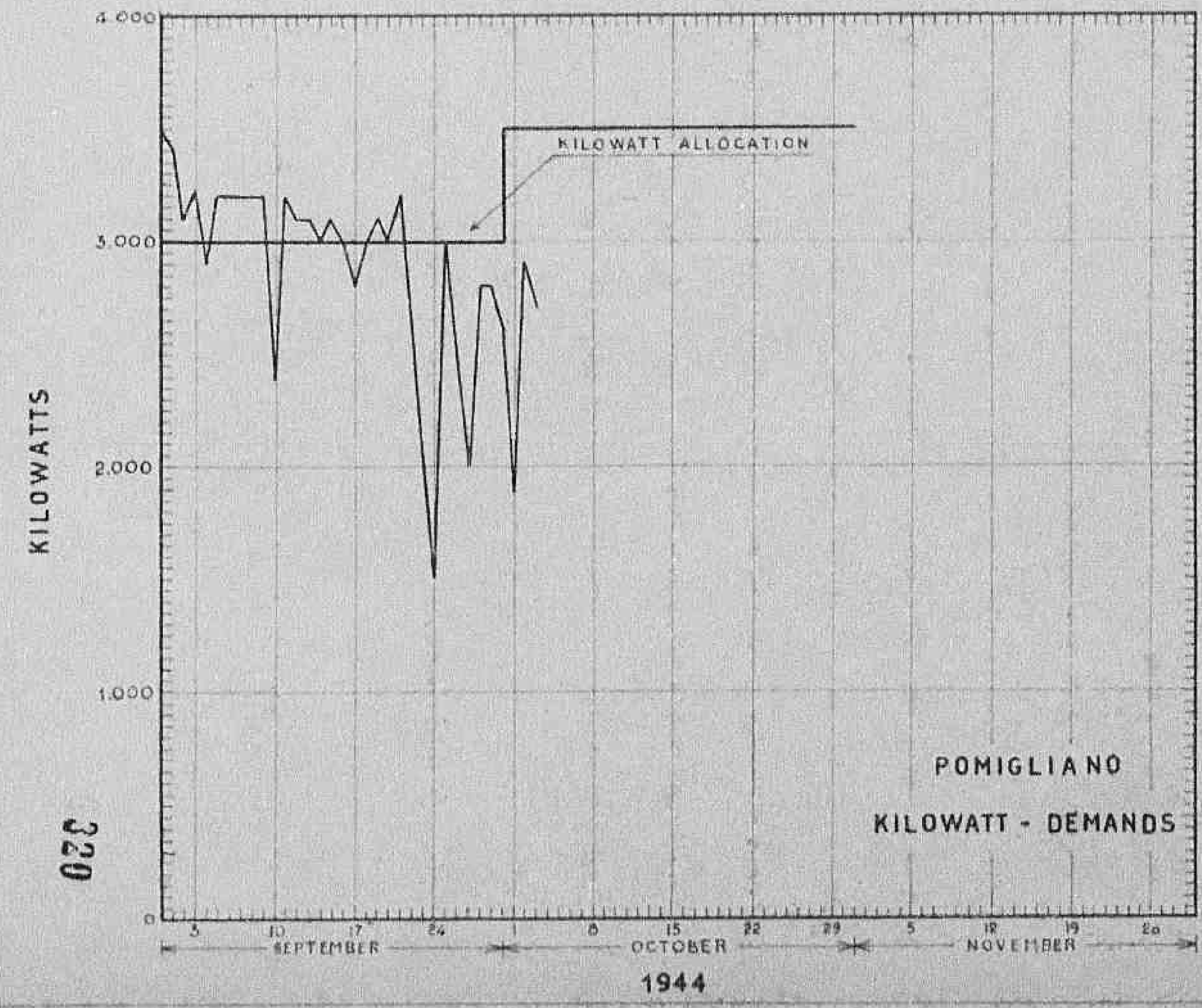

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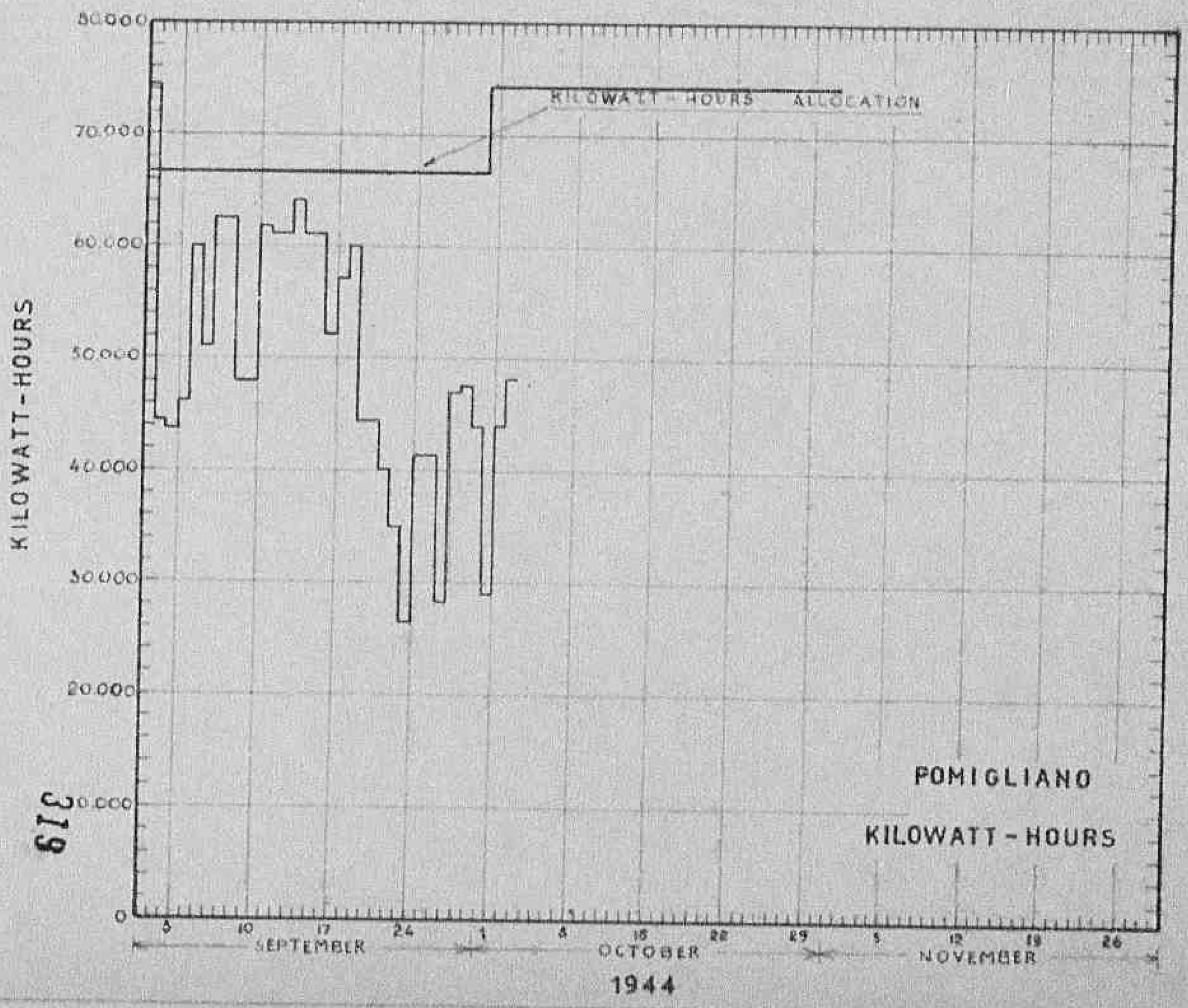

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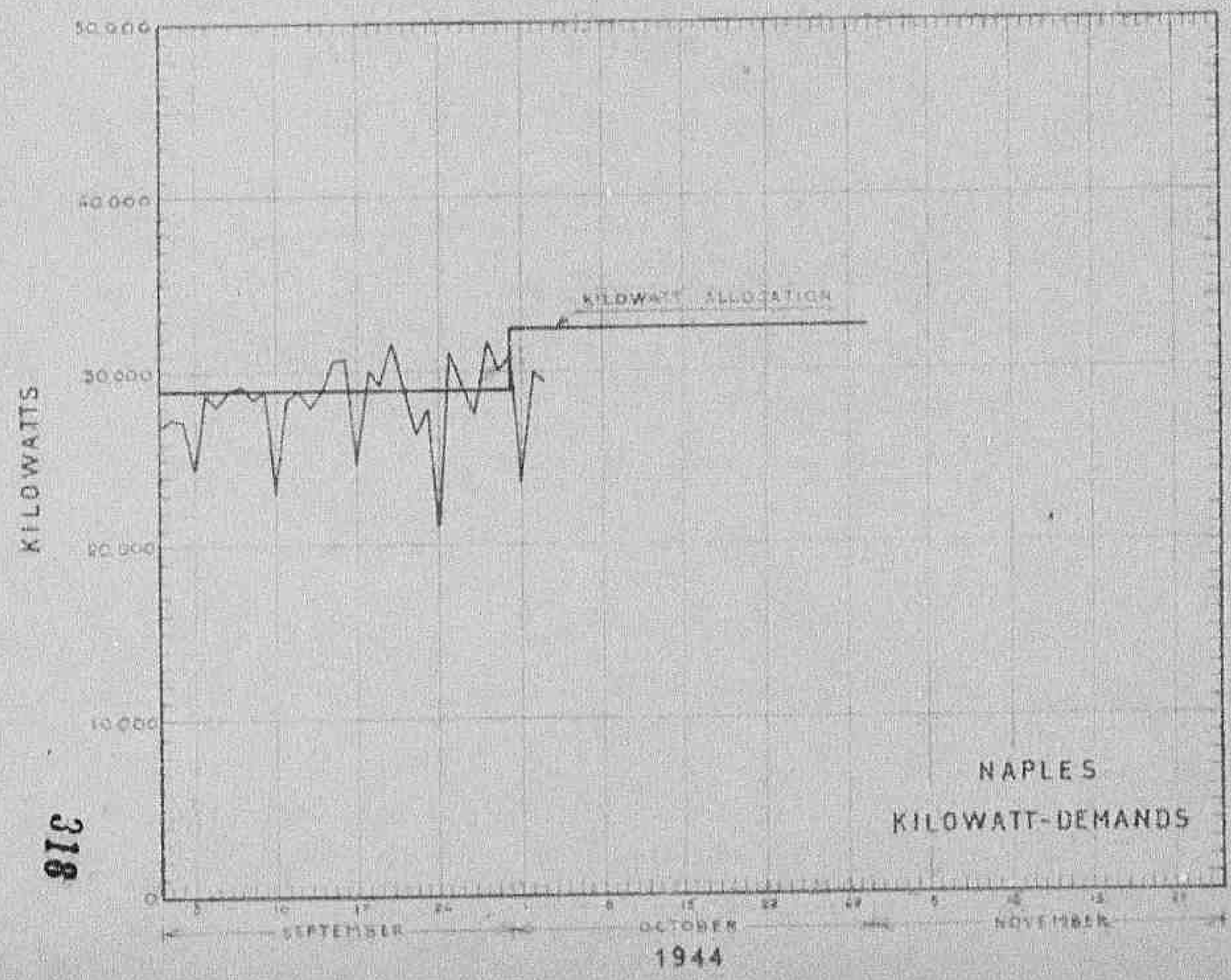
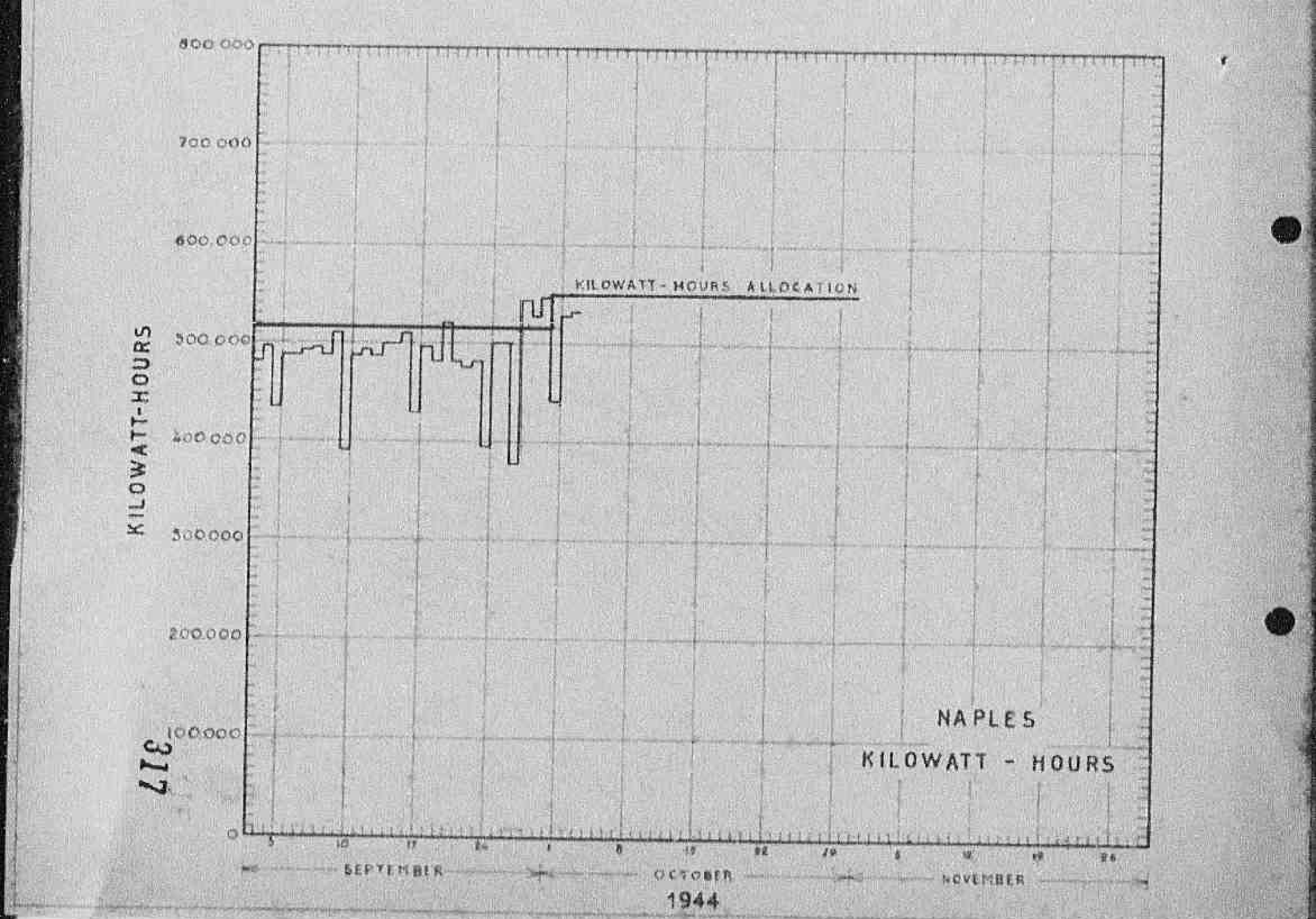
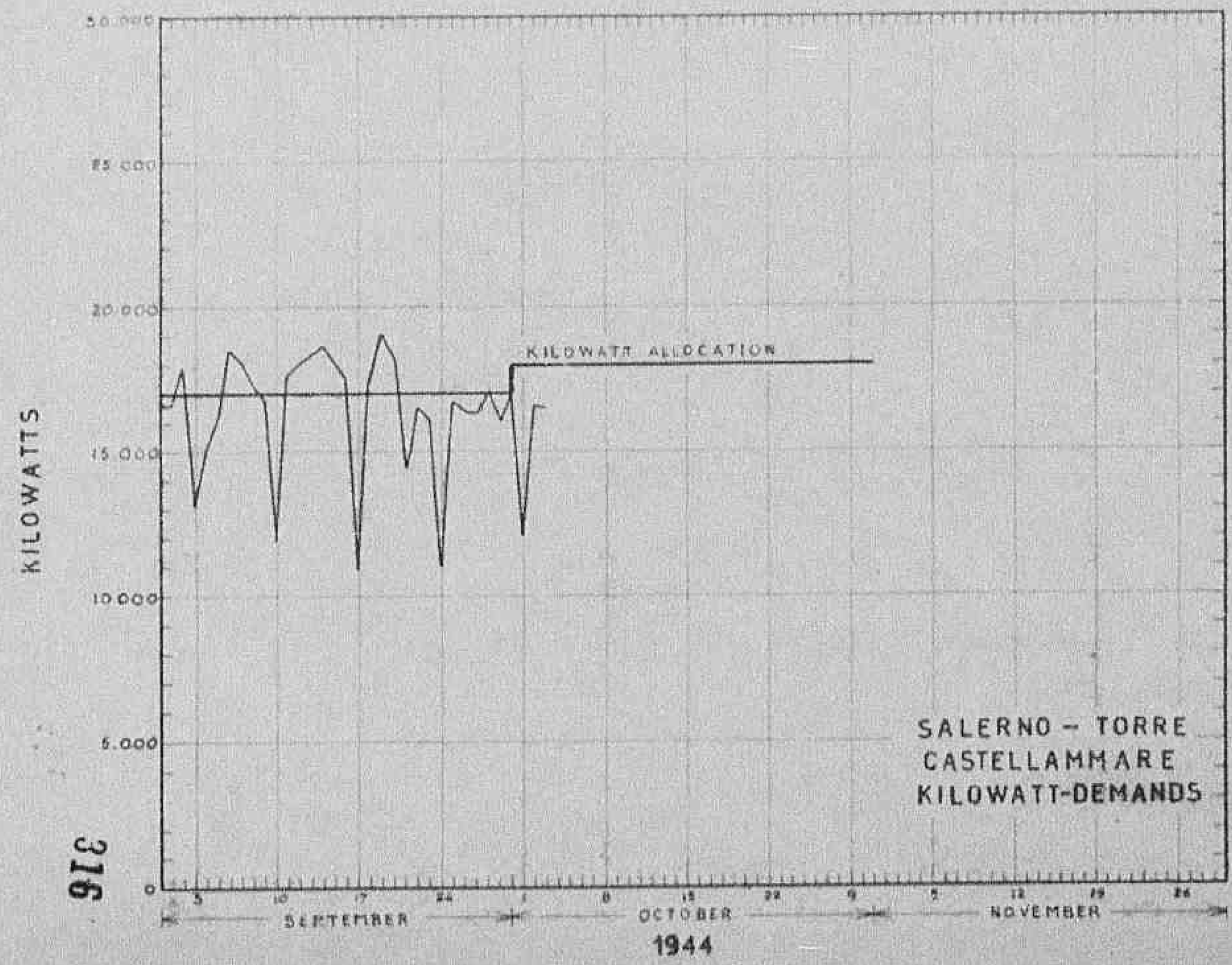


Declassified E.O. 12356 Section 3.3/NND No. 785019



Declassified E.O. 12356 Section 3.3/NND No. 785019



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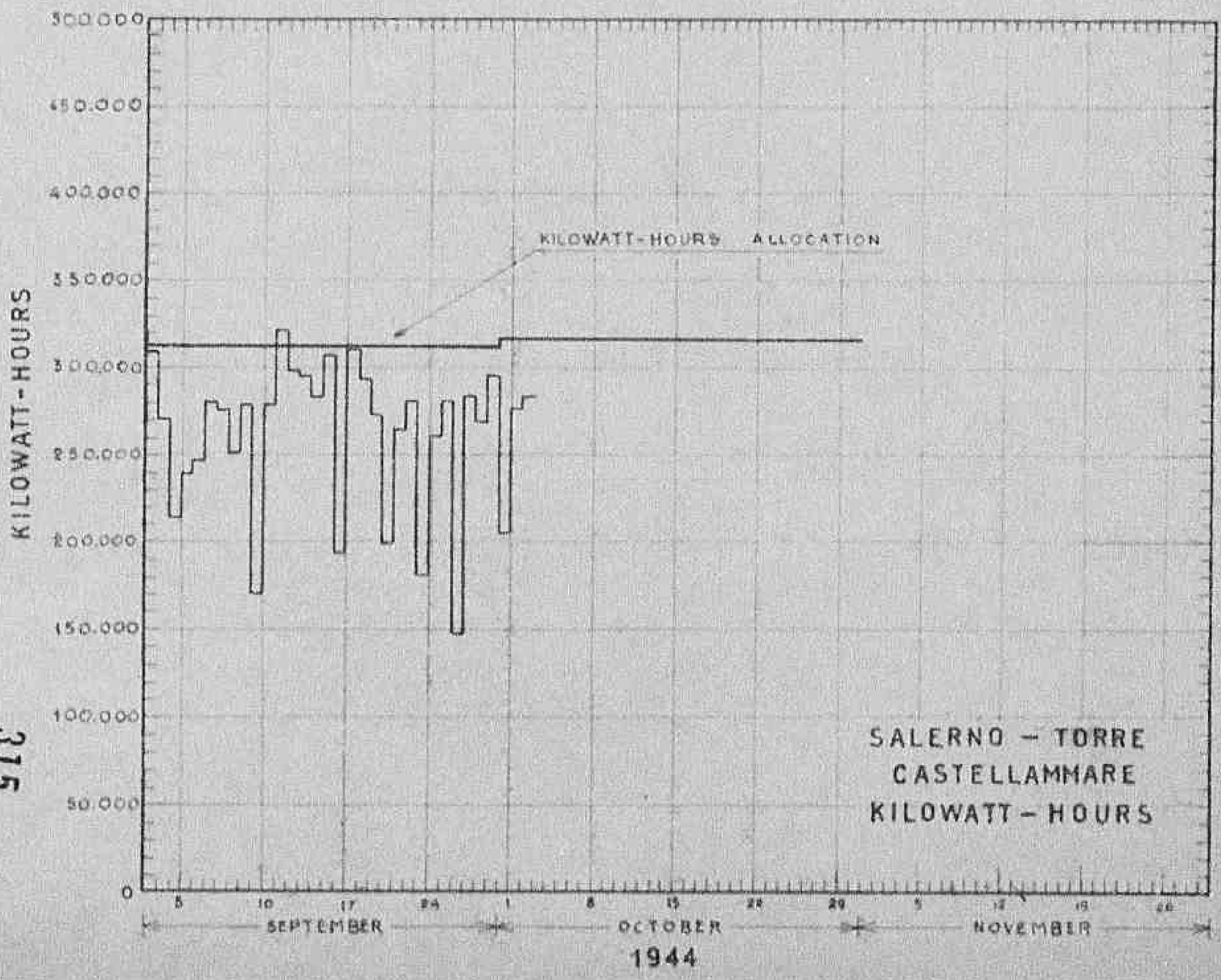

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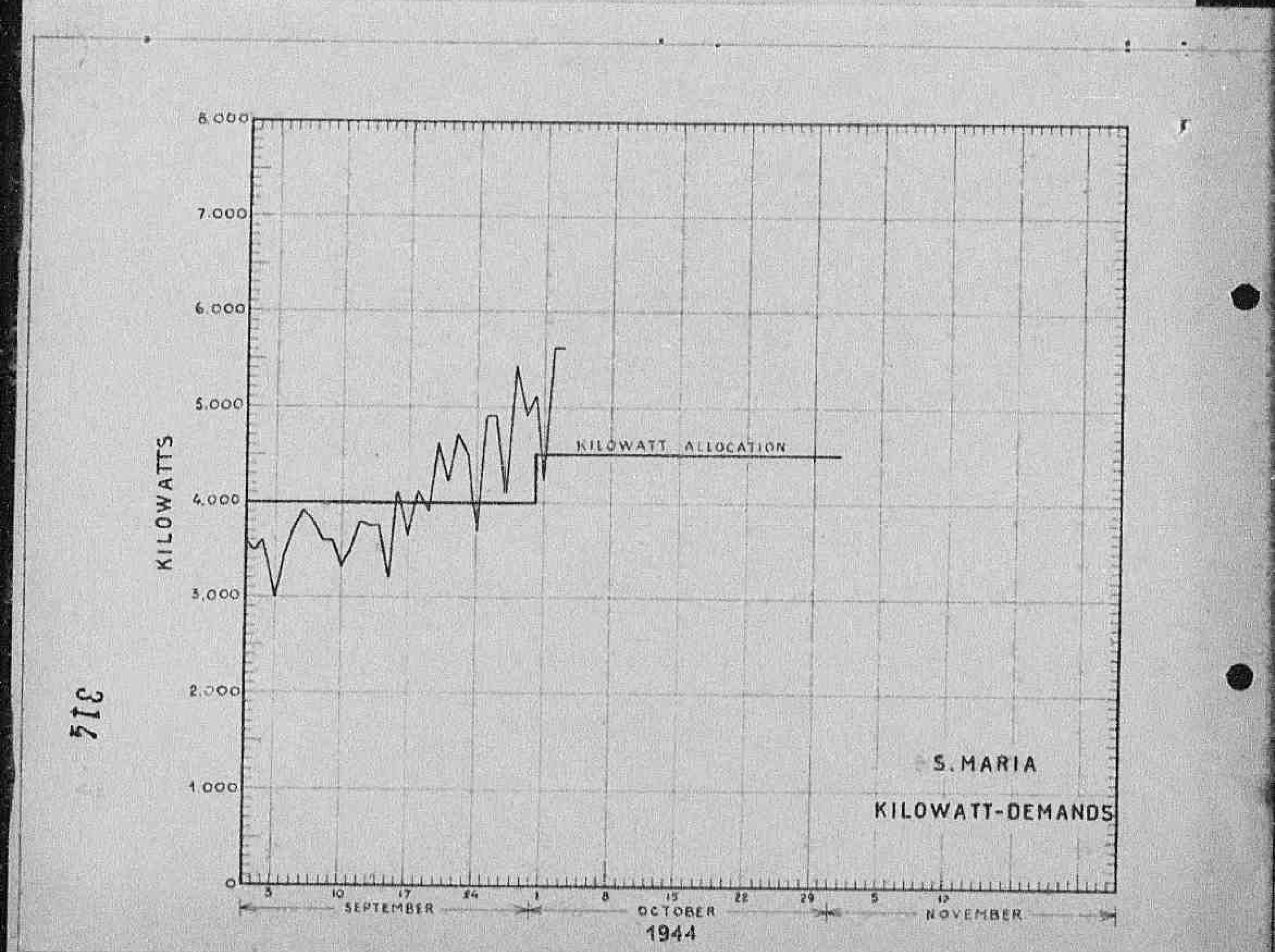

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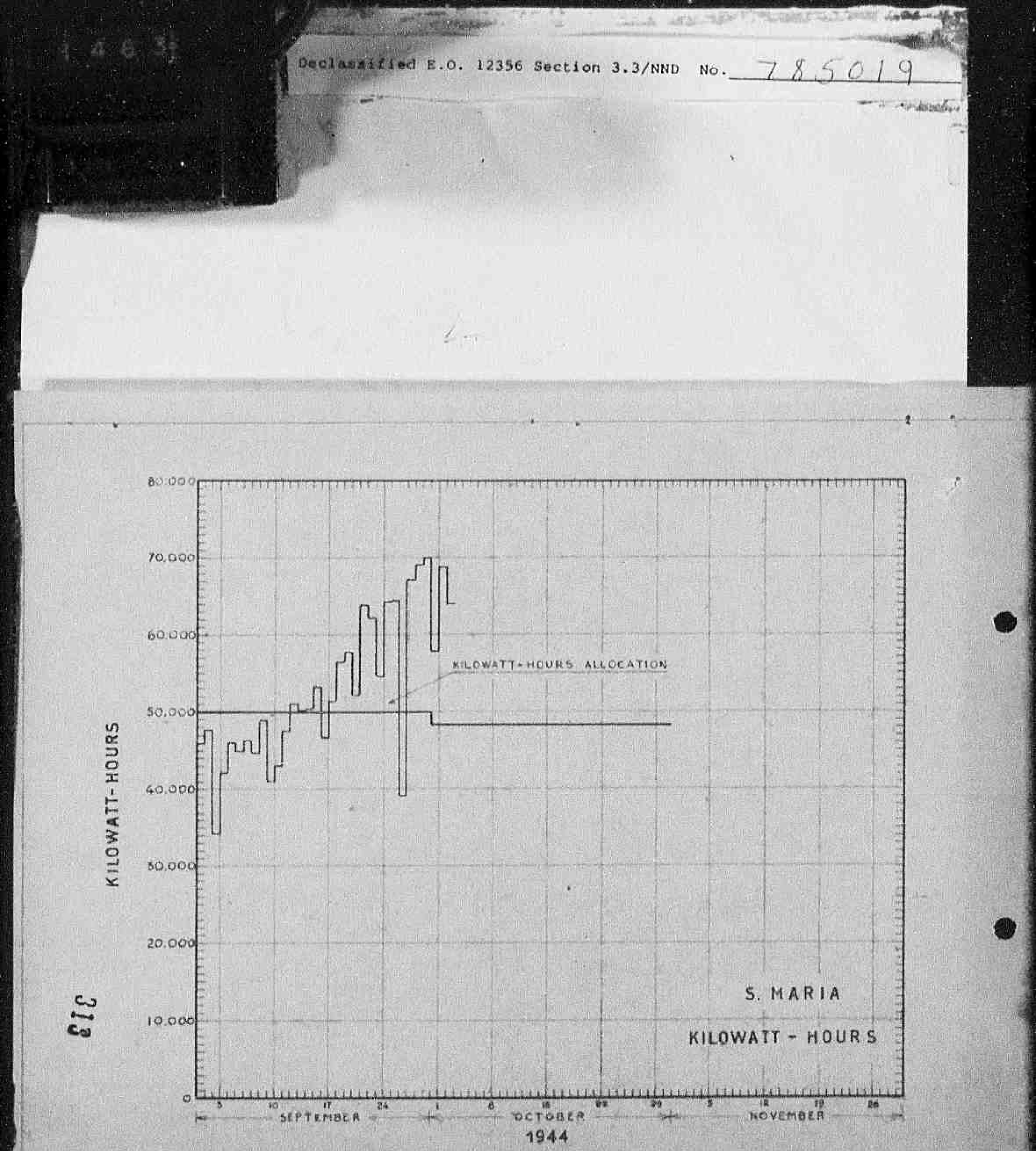

Fig 3

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Tel.489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LWL/ac

156

ACC/158/PWU

15 Oct. 44

Subject : Electric Power Committee Members
A.F.L.R.S. - R.A.A.C. - G.M.F.

To : ALLIED FORCE HQ.
(Attention Chief Engineer)

1) - Enclosed letter requests the appointment of a representative and alternate from the Electrical Reconstruction Committee.

2) - According to the Administrative Memorandum N° 43 of the 5th of October these appointments should be made from your office.

312

E.J.BARRY
Major, C.E.
Acting Chief Elec.Div.

1 enclosure
Letter 30/9/44 LRS/2184/4

Declassified E.O. 12356 Section 3.3/NND No. 785019

Col. O'Rorty.

[illegible] a report of [illegible]
[illegible] and shown by him
[illegible] I do not know anything
[illegible] do with the construction of [illegible]
[illegible] but it is [illegible] responsibility
[illegible] obtained engineering officers
[illegible] any that may no longer need
[illegible].

[illegible]

377.

Declassified E.O. 12356 Section 3.3/NND No. 785019

4-4

[illegible] part of the A.C.C.
I know what action you are
[illegible] your
[illegible] tion. G.E. Rhodes
[illegible]

Region.

[illegible] HE ATTACHED
[illegible] ER HERE.

Declassified E.O. 12356 Section 3.3/NND No. 785019

TERNI - SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

ANONIMA - SEDE LEGALE IN ROMA - DIREZIONE GENERALE IN GENOVA

CAPITALE L. 1.200.000.000

Indirizzo:
Posta: Casella Postale Terni
Telegr.: ELETTROTERNI
Telefono: 58

C.P.C.: Roma 18651 - Genova 12078
Milano 283295 - Perugia 12045
Rieti 6478 - Teramo 20586
Terni 4149
C/C postale Genova numero 4/526

SERVIZI ELETTRICI

Vs

Ns 1684

Al Maggiore B E L L
A. C. C.

Papigno. 9/10/1944

T E R N I

Vi trasmettiamo il rapporto settimanale sull'esercizio elettrico relativo al periodo dal 1/10 al 7/10/1944.

92160

SERVIZI ELETTRICI
IL CAPO DIRETTORE

310

Allegato n° 1

Ing. DP/AB

Tutte le copie non firmate dal Capo Ufficio Tecnico Servizi Elettrici sono prive di valore.

Declassified E.O. 12356 Section 3.3/NND No. 785019

ALLIED POWER LOCAL RESOURCES SECTION
R.A.A.C., C.M.F.

LRS/213A/4. 30 Sep 44.

SUBJECT: Electric Power Committee - Members. Telephone: RMS 66275.

TO: HQ, AAI.
No. 1 District.
No. 2 District.
No. 3 District.
CE, MTO.
RAAC.
DGMR.
AGC.
Electrical Reconstruction Committee.

1. Reference para. 3 of the eleventh meeting of the Electric Power Committee held on 28 Sep 44.

2. You have been given representation on this Committee. Would you please be kind enough to notify this Section of the rank and name of your representative, and the substitute who will attend in the event of his absence.

S. J. B. Louden, Captain,
for Brigadier,
A.P.L.R.S.

SJBL/cws.

HEADQUARTERS
30 SEP 1944
A. C. C.

File 155

RESTRICTED

Tel. 489041 VSR/cdg

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/159/PWU 13 October 1944

Subject : Agencies Responsible for Electric Facility Rehabilitation in Italy.

To : Sub-Commissions and Officers Shown in Distribution List.

1. Transmitted herewith for your information is a copy of Administrative Memorandum 45, dated 5 October 1944, issued by Allied Force Headquarters, Subject: Power Rehabilitation. Particular attention is invited to Paragraph (2) c. wherein the responsibilities and the functions of the Allied Control Commission are set forth. The Electrical Division of the Public Works and Utilities is now carrying out these functions.

G.E. [illegible]
Lieut.-Colonel, R.E.,
Acting Director.

DISTRIBUTION LIST: (2 each)

Agriculture Sub-Commission
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Communications Sub-Commission
Finance Sub-Commission
Food Sub-Commission - Medical supplies
Food Sub-Commission - Property Control
Industry Sub-Commission
Labour Sub-Commission
Shipping Sub-Commission
Transportation Sub-Commission
Pub. Relations Branch
PWU Div. - Archives
Regional Commissioner:
Abruzzi-Marche Region
Emilia Region
Lazio Region
Liguria Region
Lombardia Region
Piemonte Region
Sardegna Region
Sicilia Region
Southern Region
Toscana Region

Regional Engineer:
Abruzzi-Marche Region
Emilia Region
Lazio Region
Liguria Region
Lombardia Region
Piemonte Region
Sardegna Region
Sicilia Region
Southern Region
Toscana Region
Venezia Region

308

Declassified E.O. 12356 Section 3.3/NND No. 785019

1. Transmitted herewith for your information is a copy of Administrative Memorandum 43, dated 5 October 1944, issued by Allied Force Headquarters, Subject: Power Rehabilitation. Particular attention is invited to Paragraph (2) c. wherein the responsibilities and the functions of the Allied Control Commission are set forth. The Electrical Division of the Public Works and Utilities is now carrying out these functions.

G.B. [illegible]
Lieut.Colonel, R.E.,
Acting Director.

DISTRIBUTION LIST: (2 each)

Agriculture Sub-Commission
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Food Sub-Commission - Medical supplies
Food Sub-Commission - Property Control
Industry Sub-Commission
Labour Sub-Commission
Shipping Sub-Commission
Transportation Sub-Commission
Pub. Relations Branch
INFO Div. - Archives
Regional Commissioner:
Abruzzi-Marche Region
Emilia Region
Lazio Region
Liguria Region
Lombardia Region
Piemonte Region
Sardegna Region
Sicilia Region
Southern Region
Toscana Region
Venezia Region.

Regional Engineer:
Abruzzi-Marche Region
Emilia Region
Lazio Region
Liguria Region
Lombardia Region
Piemonte Region
Sardegna Region
Sicilia Region
Southern Region
Toscana Region
Venezia Region

308

copy to file OSI/PWU

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

File 154

GER/bb

Tel: 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

11 Oct 44

ACC/158/PWU

SUBJECT: Administrative Memorandum from AFHQ 43
(Electric Power Rehabilitation).

TO : ECONOMIC SECTION (att. Lt. Col. Densmore)

1. I attach herewith a copy of the above AFHQ Memorandum dated 5th Oct. 1944. It will be realized that it is of major importance insofar as this Sub-Commission is concerned. It lays down clearly the duties of the Chief Engineer AFHQ, those of A.A.I., those of Natousa, and of British Districts (Armies).

2. In particular, and of out-standing importance to ACC, para.2 (c) indicates under 8 sub-heads the precise obligations of this Sub-Commission, insofar as its Electrical Division is concerned. In fact it makes this Sub-Commission the main spring of all Electric Power activities in Italy. To the extent of furnishing a Secretariat, planning all Emer rehabilitation, preparation of planning programs, direction and supervision of all constructional works of rehabilitation (by use of Italian Labour and materials), the actual operation of Power systems, and the issue of all orders to Italian Power Companies and other Civilian Agencies. Further, we are to keep the Chief Engineer AFHQ advised of all these activities.

3. Two points arise out of the Memorandum:-

(a) To what extent are these activities to be carried out directly with the Chief Engineer AFHQ and the Electrical Reconstruction Committee, or are these contacts to be maintained from now onwards through-channels i.e. through the Economic Section?
(As to this it is to be borne in mind that the work is of a highly technical character, and of a type where direct contacts are usually essential. It would be possible, of course, to keep the Economic Section fully informed of the position, as it might change or develop from week to week.)

(b) The question of Personnel electrical also arises i.e. number of Allied Officer Personnel at this Hq. The recent main "Manpower Committee" decided that the number at Hq. should be limited to five, subject to review in three month's time. Action in accordance with this, has already

Declassified E.O. 12356 Section 3.3/NND No. 785019

been taken. But that Committee did not have before them at the time, and neither did this Sub-Commission, the orders of AFHQ of the 5th October now under reference. Had these orders been published some weeks ago the number would not be limited, in all probability, to five only. We do not think, in fact, that we can possibly undertake the heavy responsibilities now set out in the Memorandum with so few a number of officers at H.Q. It may be, also, that a greater number of similarly qualified officers may prove to be necessary in the various Regions.

4. We are not prepared, at the moment, to put forward positive proposals as to whether the number mentioned will have to be doubled, trebled, or otherwise increased. In the meantime the added duties laid on us are immediate, and we ask that you will concur in having the number raised forthwith at any rate from five to nine, as a first step.

G.E.T.

G.E. THOMAS,
Lieut-Colonel, R.E.,
Acting Director.

Copy to file C51.
Enclos: Copy of Administrative Memorandum number 43.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

P.W.B. + G.

RESTRICTED - 9 OCTRed DCK/ur (3 Copies)

137 Gen

ALLIED FORCE HEADQUARTERS
APO 512

ADMINISTRATIVE MEMORANDUM)
NUMBER 43)

HEADQUARTERS
9 OCT. 1944
A. C. C.

5 October 1944

POWER REHABILITATION

1. The function of power rehabilitation having been transferred to control of AFHQ the following will govern:

2. a. The Chief Engineer, AFHQ, will

(1) Exercise staff supervision of power rehabilitation activities.

(2) Recommend rehabilitation policies

(3) Coordinate power rehabilitation activities of the various agencies concerned.

b. Electrical Reconstruction Committee.

(1) The Central Electrical Board, Italy, is dissolved. There is hereby created an Electrical Reconstruction Committee (Italy), with membership as follows:

Chief Engineer AFHQ (Chairman)

Representatives of: ACC, R.N., AAI and CZ, NATOUSA. It is requested that ACC, R.N., AAI and CZ, NATOUSA, advise AFHQ of representatives selected for membership.

(2) The Electrical Reconstruction Committee will:

a. Meet at the call of the Chairman

b. Recommend studies for determining power requirements as may be required

c. Recommend study of and preparation of plans for power rehabilitation as may be required

d. Review ACC plans for power rehabilitation, correlating them with the requirements and make recommendations as to extent and nature of rehabilitation

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e. Recommend designation of agency to perform specific construction work of rehabilitation, when necessary

f. Make such other recommendations regarding power rehabilitation as it deems necessary.

C)El.
This is so important that I want 3 copies of it at once. I want to discuss it with E.S. before Gen. sees it.
9/10.

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c. The ACC will:
(1) Furnish Secretariat for the Electrical Reconstruction Committee
(2) Be responsible for planning power rehabilitation throughout Italy.
(3) Maintain liaison with AAI and keep informed as to existence and condition of power plants and probable rehabilitation needs in operational area
(4) Ascertain power requirements from AAI, CZ, NATOUSA, Districts (Br), and other sources
(5) Submit plans for rehabilitation to the Chief Engineer for consideration and approval of the Electrical Reconstruction Committee
(6) Using Italian labor and local materials, direct, administer and supervise construction work of rehabilitation and operate the power systems except those projects specifically assigned other agencies by AFHQ and except as provided in paragraphs 2d (2) and 2e (1).
(7) Will issue all orders necessary to implement the program to Italian Power Companies or other civilian agencies
(8) Keep the Chief Engineer , AFHQ, advised of its activities.

d. AAI will:
(1) Cooperate with ACC in determining existence and condition of power plants and probable rehabilitation needs in the operational area
(2) Insofar as practicable initiate, construct and operate such power installations within the operational area as it considers necessary, coordinating with plans of ACC
(3) Advise the Chief Engineer, AFHQ, of any power rehabilitation work undertaken.

e. CZ, NATOUSA and Districts (Br) under command AFHQ will:
(1) Initiate, construct and operate such power installations as are required locally for their own activities.
(2) Undertake such general power rehabilitation projects as may be specifically assigned by AFHQ
(3) Cooperate with ACC and AAI and render them such aid and assistance as is practicable within available means and without detriment to their own operations
(4) Advise the Chief Engineer, AFHQ, of any power rehabilitation work undertaken.

3. Orders to implement plans will be issued through normal staff channels in respect to work for which military agencies are to be responsible.

4. The agencies mentioned above will furnish the required personnel from their own allotments.

By command of General WILSON:

/Copies to Gen. Lee
" " Introductory S.C
" " Labor Sec.

H. V. ROBERTS,
Colonel, AGD,
Adjutant General.

DISTRIBUTION:
"C"

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VHR/cdg

153

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

12 October 1944

ACC/158/PWU

Subject : Transmittal of information concerning Thermo Electric Generating Stations.

To : HQ., AAI, MDW.,
Attention Capt. John Rosbery.

1. In accordance with the conversation between yourself and Major V.H. Renton of the Electric Division, Public Works and Utilities Sub-Commission, there are transmitted herewith two copies of a list entitled "Thermal Electric Generating Stations" (Piure, Pola, Trieste). This list was prepared from information received from the Ministry of Public Works.

M.J. BARRY
Major, C.E.,
Acting Chief, Elec.Div.

Enclosure:

2 copies of list.

304

THERMAL ELECTRIC GENERATING STATIONS

(Fiume, Pola, Trieste)

Commune	Company	Name of Plant	Province	Type of plant	Terme Plants			Outgoing voltage	Frequency
					Installed power		Fuel		
					Turbines	Generators			
					KW	KVA		KV	
Abbazia	Municipale Fiume	Abbazia	FM	C	700	865	Oil	5	42
Albona	"Arsa"	Stazzania	PL	V	1,325	1,300	Coal	10	42
Albona	S P E M A	Stabilim.	PL	V	1,200	1,500	Coal	0,38	50
Albona	do	do	PL	C	37	55	Oil	0,38	50
Brioni	Alberghi Brioni	Brioni	PL	C	270	285	Oil	0,25	—
Cherso	Zaccini	Zaccini	PL	C	110	80	Oil	0,110	—
Cittanova	Cons. dell'Istria	Antenale	PL	C	111	130	Oil	0,10	42
Clana	A.Medervelic	Clana	FM	V	48	55	Coal	0,38	50
Dovani	Cons. dell'Istria	Bersini	PL	C	34	34	Oil	0,22	42
Fiume	Cart. Quarnaro	Cantiere	FM	C	480	600	Oil	0,33	42
Fiume	do	do	FM	C	400	500	Oil	0,33	42
Fiume	Municipale Fiume	Fiume	FM	V	7,800	9,435	Coal	5	42
Fiume	Silurificio Whitehead	Stabilim.	FM	C	400	500	Oil	0,115	42
Isola Istria	G.Arrigoni & Co.	Isola	PL	C	186.5	260	Oil	0,22	42
Lussinpiccolo	do	Lussinpiccolo	PL	C	10	14	Oil	0,19	42
Unie	do	Unie	PL	C	10	14	Oil	0,115	a.c.
Lussinpiccolo	Ing.Elettr. Lussino	Sansego	PL	C	15	18	Oil	303	50
Lussinpiccolo	do	Unie	PL	C	15	18	Oil	0,125	50
Pinguente	Cons. dell'Istria	S.Giovanni	PL	C	295	300	Oil	0,5	42
Rovigno	Veneta Siluri	Rovigno	TS	V	3,000	3,000	Coal	30	42

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Albona	"Arsa"	Stermanio	PL	V	1,325	1,500	Coal	10	42
Albona	S P E M A	Stabilim.	PL	V	1,200	1,300	Coal	o,38	50
Albona	do	do	PL	C	37	55	Oil	0,38	50
Brioni	Alberghi Brioni	Brioni	PL	C	270	835	Oil	0,25	—
Cherso	Zaccini	Zaccini	PL	C	110	80	Oil	0,110	—
Cittanova	Cons. dell'Istria	Antenale	PL	C	111	138	Oil	0,10	42
Cluna	A.Madrevadio	Cluna	PM	V	45	55	Coal	0,36	50
Dcauri	Cons. dell'Istria	Mersindi	PL	C	34	34	Oil	0,22	42
Fiume	Cant. Canaro	Cantiere	FM	C	480	600	Oil	0,33	42
Fiume	do	do	FM	C	400	500	Oil	0,33	42
Fiume	Municipale Fiume	Fiume	FM	V	7,800	9,435	Coal	5	42
Fiume	Silurificio Whitehead	Stabilim.	FM	C	400	500	Oil	0,115	42
Isola Istria	G.Arrigoni & Co.	Isola	PL	C	186.5	268	Oil	0,22	42
Lussinpiccolo	do	Lussinpiccolo	PL	C	10	14	Oil	0,19	42
Unie	do	Unie	PL	C	10	14	Oil	0,115	e.o.
Lussinpiccolo	Esp.Elettr. Lussino	Sansego	PL	C	15	18	Oil	303	50
Lussinpiccolo	do	Unie	PL	C	15	18	Oil	0,125	50
Pinguente	Cons. dell'Istria	S.Giovanni	PL	C	295	320	Oil	0,5	42
Rovigno	Venezia Giulia	Rovigno	FM	V	5,000	5,000	Coal	50	42
Muggia	Cant. Adriatico	Cant. S.Rocco	FM	C	157	-	Oil	0,22	-
Pirano	Venezia Giulia	Pirano	PL	C	180	240	Oil		
Pola	Venezia Giulia	Pola	PL	C	1,600	1,600	Oil		
Pola	Istriana Cemenți	Fabbrica	PL	V	1,000	1,050	Coal	0,5	42

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(continued) 2.

Commune	Company	Name of Plant	Province	Type of plant	Terna Plants			Outgoing voltage	Frequency
					Installed power		Fuel		
					Turbines	Generators			
					KW	KVA		KV	
Portole	Cons. Sal-l'Istria	S.Stefano	PL	G	154	188	Oil	0,5	42
Pola	Canapificio Istriano	Canapificio	PL	G	45	60	Oil	0,38	42
Postumia	Veneta Silicia	Postumia	PL	G	50	65	Oil	0,19	42
S.Canziano	Brunner	In. Marcuini	TS	G	25	30	Oil	0,20	42
Trieste	"Aquila"	Daule	TS	G	96	125	Oil	0,5	42
Trieste	Cant. Adriatico	Cant. S.Marco	TS	G	324	405	Oil	0,22	42
Trieste	Qualfid	Chiarbola	TS	V	2,875	2,910	Oil	0,36	42
Trieste	I L V A	Servola (Ilvania)	TS	V	1,280	1,560	HP gas	5,25	50
Trieste	do	do	TS	G	2,200	2,700	HP gas	5,25	50
Trieste	do	do	TS	V	1,110	1,150	HP gas	0,25	—
Trieste	Lloyd Triestino	Arsenale	TS	G	380	470	Oil		—
Umago	G.Arrigoni & Co.	Umago	PL	G	10	14	Oil	0,115	a.c.
Monfalcone	Cant. Adriatico	Cant. Monfalcone	TS	G	1,400	1,750	Oil	0,22	42

ABBREVIATIONS:

G - Diesel

FM - Fiume

PL - Pola

TS - Trieste

V - Steam

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Hqr/1am

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ACC/153/PWU

6 October 44.

SUBJECT: Dam in River Tiber at San Paolo Power Station.

TO : Regional Engineer, Lazio Region.

In response to a telephoned enquiry from Maj. Michel it has been determined that the dam which was constructed in the River Tiber for the purpose of ensuring a continued supply of cooling water to the condensers of the San Paolo Power Station will not be of further service during the present season. You are, therefore, authorized to terminate suitably the existing contract with the "Ferrobeton" company.

G.E. RHODES
Lieut-Colonel, R.E.
Acting Director

Copy to Major Michel, for info. only.

Written at the request of
Acting Chief, C&C. Div.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489091

JHL/mc

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
AFO 394

ACC/158/PWU

9 Oct. 1944

Subject: Engineers - Franco Tosi.

To : Lt.Col. Turner-Coles A.C.C. Taranto.

1. The attached copy letters are forwarded for information.

2. The Engineers may have difficulties in obtaining materials from the Navy and also in getting the men released.

3. Any help you can give in this matter if difficulties arise will be most appreciated.

G.E. RHODES,
Lieut-Colonel, R.E.,
Acting Director.

Declassified E.O. 12356 Section 3.3/NND No. 785019

4th

Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

RAE/mc

149

ACC/158/PWU

6 Oct. 44

Subject : Log of Major Bell

To : Lt.Col.W.M.LAPPER - Chief Elec. Div.
HEADQUARTERS RADIO REGION (Attention Regional Engineer)
HEADQUARTERS TOSCANY REGION (Attention Regional Engineer)
P.W.B. ENGINEERS (Attention Col. Cooley)
HEADQUARTERS 5TH ARMY (Attention Capt. Geither)
PROVINCIAL COMMISSIONER - TERNI (Attention Maj.Fricker)

1) - Attached is copy of the log of Maj. R.A.Bell for the period October 2nd to October 6th inclusive.

for E.J.MARKY
Maj. C.E.
Acting Chief Elec.Div.

1 enclosure

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 469081

(COPY)

Vs/rif:

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 534

ACC/158/PWU 7 Ottobre 1944

Oggetto : Energia elettrica dalla Centrale Idroelettrica di Tarquinia.

A : Cartiera di Tarquinia.

1. A causa della scarsezza di energia elettrica verificatosi nell'Italia Centrale, la Commissione Alleata di Controllo, circa un mese fa, ritenne opportuno richiedere alla Societa' Romana di Elettricita' di prendere accordi con codesta Societa' onde ottenere energia dalla centrale idroelettrica annessa alla Cartiera di Tarquinia.

2. Questo Comando, quando richiese alla Societa' Romana di ottenere elettricita' dalla cartiera, a causa di un malinteso, non informo' codesta Societa' della necessita' di usare qualunque possibile sorgente di energia elettrica. Si e' molto dolenti di non aver informato codesta Societa' in quanto si ritiene che se fosse stata informata del bisogno di energia essa sarebbe stata disposta a cedere tutta quella che era in grado di fornire.

3. La Commissione Alleata di Controllo e' stata informata che il vostro Direttore non ritiene desiderabile usare la Centrale elettrica quale mezzo di alimentazione per l'Italia Centrale.

4. Attualmente e' ancora considerato necessario usare tutta l'energia disponibile alla centrale di Tarquinia e si gradirebbe la massima cooperazione da parte di codesta Societa' per raggiungere questo scopo. Se dovesse sorgere un ulteriore questione in questo argomento o si rendesse necessaria qualunque forma di assistenza per raggiungere un accordo satisfacente fra codesta Societa' e la Romana di Elettricita', questa Commissione Alleata di Controllo e' a vostra disposizione per riceverVi in qualunque momento.

B.J. BARRY
Major, C.E.,
Acting Chief, Elec.Div.

Copy to Societa' Romana di Elettricita'

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(COPY)

VIII/odg

Tel. 489061

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AOG/153/PWU

7 October 1944

Subject : Electric Energy from Tarquinia Hydro Electric Plant.

To : Paper Mill - Tarquinia.

1. Because of the shortage of electricity in Central Italy, it became necessary, about one month ago, for the Headquarters Allied Control Commission, to request the Societa' Romana di Elettricita' to arrange with your company to receive the energy from the hydro-electric plant at the Tarquinia Paper Mill.

2. At the time that the Romana Company, was requested to obtain electricity from the paper mill an oversight was made because your company was not informed by this Headquarters that it was necessary to use every possible source of electric energy. It is regretted that your company was not told of this situation because it is believed that had your company been informed of the need for electricity you would have been willing to supply all the electricity it is within your ability to furnish.

3. The Headquarters Allied Control Commission have been informed that your Director feels that it is undesirable to use the electric plant as a source of electricity supply to Central Italy.

4. At the present time, it is still considered necessary to use all the available power from the Tarquinia Paper Mill, and your fullest cooperation is requested in order that this may be done. If there is further any question over this matter, or if any assistance is required in reaching a friendly agreement between your company and the Societa' Romana di Elettricita', you are invited to come to the Headquarters, Allied Control Commission, Public Works and Utilities Sub-Commission at any time.

E.J. BAMBX
Major, C.E.,
Acting Chief, Elec.Div.

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Copy to Societa' Romana di Elettricita

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 480081

VSR/mc

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

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ACC/158/PWU

30 Sept. 1944

Subject: Periodic Electric Operating Reports
Required by Allied Control Commission.

To : Societh Romana di Elettricità.

1. In order that the Electrical Division of Headquarters, Allied Control Commission may have certain data concerning the operation of your company, and also in order that your company may not be called upon to furnish unnecessary information, it has been decided to request the periodic reports, described below, and to follow certain procedures, as stated hereinafter.

2. a) A fuel daily report relating to both the Montemartini and San Paolo Steam plants will be submitted by telephone each day. This report will be given by telephone to the office of Major Price, Headquarters Allied Control Commission each day by 1000 hours, and will cover the previous day. It will contain the following information:-

San Paolo Station

Kilowatt-hours generated:
Total Coal consumed:
Total Coal in Storage :
Total Coal Received:

Imported Coal Consumed:
Imported Coal in Storage:
Imported Coal Received:

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San Paolo Station (Cont'd)

Lignite Consumed:
Lignite in Storage:
Lignite Received:

Sardinian Coal Consumed:
Sardinian Coal in Storage:
Sardinian Coal Received:

Montemartini Station

The same information concerning coal, and in addition the following:-

Boiler Fuel Oil Consumed:
Boiler Fuel Oil in Storage:
Boiler Fuel Oil Received:

Diesel Oil Consumed:
Diesel Oil in Storage;

Diesel Oil Received:

b) The above will also be prepared as a written report each day, and will be picked up by a representative of this Division.

A daily report showing outages of generating and transmission lines affecting Rome City, together with the cause and effect of each will be prepared each day and will be available at your office to be picked up by 1100 hours on the following day. An example is shown below this report may be written in Italian.

Time of Outage	Cause	Effect
From 1100 to 1115	Punctured insulator on Tivoli-Rome 60 KV Line.	Prevented output of Subiaco, Scalelle and Cosunacqua from reaching Rome.

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c) Daily load curves showing the following:

1. The hourly kilowatt load of the two steam stations in Rome, and other principal stations feeding into the Rome net-work.
2. The total energy generation of each of the two steam stations in Rome.
3. The hourly demand of the Rome distribution system, both the total and categories of military, preferential civilian, non-preferential civilian, railway, and Rome Province.

d) A weekly report showing the total kilowatt-hours generated by each plant of the system, the maximum demand on each plant, the maximum operable capacity at each plant and any reasons why each plant is not operating at maximum capacity. An example is given below:

Name of Plant	Total Pre-War Generating Capacity KW.	Present Maximum Capacity KW.	Maximum Demand for Week-KW	Energy output for Week KW-hr	Reasons for not reaching maximum capacity
San Paolo	30,000	10,000	10,000	1,000,000	a. One boiler out of service defective superheater. b. One turbine out of service excessive vibration.

e) A weekly tabulation showing the weekly energy distribution in kilowatt-hours and the maximum demand at important load centers, such as Civitavecchia.

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f) A weekly tabulation showing the condition of the transmission lines of the company for voltages of 30 KV and above.

An example of this tabulation is as follows:-

Voltage	Operable Km.	Damaged under Repair Km.	Damaged but not under Repair Km.	Total Km.
30 KV	=	=	=	=
60 KV	=	=	=	=
150 KV	=	=	=	=

g) A weekly tabulation showing the progress of work on each rehabilitation project involving generation and transmission facilities.

An example is given below:

Project	Work Accomplished During Week	Number Men Working	Percentage Completed.	Estimated Completion Date.
60 KV. Ceccano Segni Transmission Line	Erection of 2 Km. of line	20	90	1 October

h) A list of any plants, machines or transmission lines which resumed operation during the previous week.

3. Because the operation of the electric power systems is of primary interest to the Electrical Division, Public Works and Utilities Sub-Commission, Headquarters Allied Control Commission, it is desired that all requests of military agencies for operating information involving generating or transmissions of 30 KV. lines be referred to this Division, and that no information be given to other agencies unless this Division is first notified. The purpose of this instruction is not to prevent agencies having legitimate use of data from obtaining it, but to avoid unnecessary work of compiling information which

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is not necessary during the present emergency conditions. This instruction is not intended to stop information concerning distribution data to agencies locally concerned.

4. It is requested that a copy of each report submitted to this Headquarters be furnished Region IV, Allied Control Commission, Electrical Utilities Officer.

P.J. BARRY
Major C.E.,
Acting Chief Elec. Div.

C.C. Region IV Electrical Utilities Officer.

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Rel. 439081

VEH/cdg

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AOG/150/PWU

4 October 1944

Subject : Transmission of Information Concerning Italian Manufacturers of Electrical Apparatus and Materials.

To : Regional Engineers, Piemonte-Ligurin Region
Lombardin Region
Veneto Region

1. Transmitted herewith is a report received from an intelligence source entitled "Manufacturers of Electrical Apparatus and Materials", containing information relating to the manufacture of electrical equipment which may be useful in your Region.

M.J. BARRY
Major, C.E.,
Acting Chief, Elec.Div.

Enclosure:
1 - Report

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MANUFACTURERS OF ELECTRICAL APPARATUS AND MATERIALS

The manufacturers have been listed according to the following classes:-

Class 1 Water wheels and their Accessories .
" 2 Steam Turbines, Gas and Oil Prime Movers .
" 3 A - C and D - C Generators, Motors and Converters. Transformers and Regulators.
" 4 Rectifiers.
" 5 Switchgear and Switchgear Devices (Incl Relays).
" 6 Meters, Instruments and Measuring Apparatus .
" 7 Electrical Conductors and Cables.
" 8 Line Materials (Clamps, Joints, Connectors-Brackets, Poles)
" 9 Lighting Appliances (Incl. Lamps)
" 10 Heating and Refrigerating - Industrial & Domestic Appliances.
" 11 Electric Traction Equipments .
" 12 Marine Equipments .
" 13 Batteries .
" 14 Wire Telephony and Telegraphy Apparatus
" 15 Radio Communication Apparatus (Incl. Tubes)
" 16 Insulating Materials (Incl. Porcelain)
" 17 Electrical Miscellaneous Materials.
" 18 Important Contractors (for Hydro Plant & construction and transmission line erection works.)

NOTE 1. For each class the main manufacturers only have been listed and by order of importance in the Italian market.

NOTE 2. The invested capitals for limited companies are specified in Lire, as they were officially known in 1937.

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Class 1.

WATER WHEELS and ACCESSORIES.

a) S.A. Costruzioni Meccaniche RIVA-Milano Capital L. 12,000,000).

S.A. Alessandro Calzoni-Bologna(Capital L.leyxx 10000000.)

b) S.A.De Pretto - Escher Wyss - Schio(Vicenza) (Capital L.5,500.000).

Connected by technical and commercial agreement with firm Escher - Wyss of Switzerland.

c) S.A. Franco Tosi - Legnano(Milano) - Capital L. 51,000.000).

S.A. San Giorgio-Sestri (Genova) -Capital L. 60,000.000)

These two companies are connected by technical and commercial agreements for the manufacture and sale of hydraulic turbines and their accessories only.

d) A. Bellizzari & Figli - Arsignano(Vicenza).

e) S.A. Acciaierie e Tubificio -Brescia- (Capital L. 20,000.000).

Tubi Tubi Patent- this firm is specialised in steel ring reinforced penstocks only and hydraulic accessories.

NOTE 1. The first three concerns (a;b,c,) can supply water wheels up to maximum sizes, governors and all other accessories.

The fourth firm(d) is only a manufacturer of centrifugal pumps.

NOTE 2. Highest ratings reached. Hydraulic power plants have been equipped by these manufacturers with water. Wheels up to 70,000 HP capacity.

Penstocks have been built for heads up [illegible] metres in Italy.

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CLASS 2. STEAM TURBINES,GAS and OIL PRIME MOVERS.

a) S.A. FRANCO TOSI-Legnano(Milano)-(see 1/a)

b) ANSALDO S.A. - Genova Sampierdarena (Capital L.150,000,000).

c) Cantieri Riuniti dell'Adriatico S.A. Trieste - Capital L.100,000,000).

d) Fiat S.A. Torino (Capital L.400,000,000). Only large Diesel Motors.

e) Società Farni e Impianti Industriali-Milano

Steam boilers only and erection work.

NOTE 1. Highest ratings reached - Steam turbines have been built up to 30,000 KW - Diesel motors for stand-by plants up to 10,000 HP.

NOTE 2. The first two manufacturers (a,b) have built the main Diesel motor generator sets for stationary installations.

FIAT S.A. have built the main Diesel motor for marine installation.

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Class 3. A-C and D-C GENERATORS,MOTORS,CONVERTERS, TRANSFORMERS and REGULATORS.

a) Tecnomasio Italiano Brown-Boveri -Milano(Capital L.64,000.000).

Connected by technical, commercial and financial agreement with Brown Boveri Co of Baden,Switzerland.

b) Compagnia Generale di Elettricità - Milano - (Capital L.64,000.000).

It was majority owned by the General Electric Co.of Schenectady N.Y.U.S.A. Connected by technical and commercial agreement with the G.E. Co. and A.E.G. Berlin.

c) Ercole Marelli & Co. Sesto S.Giovanni - Milano (Capital L. 31,000.000).

Connected by technical and commercial agreement with the Westinghouse Electric & Mfg.Co. of East Pittsburg,Pa. USA

d) Ansaldo S.A. Stabilimento Elettrotecnico - Genova-Cornigliano (see 2/b)

This firm was controlled by I.R.I. (Institute for Industrial Recovery-Government Organization).

This electrical manufacturing workshop was part of the "Ansaldo" Group which includes Shipyards, Steel Mills and Mechanical Workshops-Weapon Manufacturing.

e) S. Giorgio S.A.I. - Genova - Sestri - (see 1/e)

This firm was financially connected with Terni - Società per l'Industria e l'Elettricità -Genova-Roma- and with Odero-Terni Shipyards of Genova.

f) S.I. Ernesto Breda - Milano (Capital L.31,000.000).

The main lines of activity of this manufacturer are steam locomotives, mechanical workshop, airplane manufacturing-automatic weapon manufacturing.

g) Officine Ri Savigliano S.M. - Torino -(Capital L.30,000000)

The main line activity of this firm is mechanical constructions.

h) Cantieri Riuniti dell'Adriatico S.A. Officine Elettromeccaniche Trieste (see 2/c).

The main activities of this firm are naval constructions and shipyards.

i) A. Pellizzari & Figli - Arnigiano (Vicenza).

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It was majority owned by the General Electric Co. of Schenectady N.Y.U.S.A. Connected by technical and commercial agreement with the G.E. Co. and A.E.G. Berlin.

c) Ercole Marelli & Co. Sesto S.Giovanni - Milano (Capital L. 51,000.000).

Connected by technical and commercial agreement with the Westinghouse Electric & Mfg.Co. of East Pittsburg,Pa. USA

d) Ansaldo S.A. Stabilimento Elettrotecnico - Genova-Cornigliano (see 2/b)

This firm was controlled by I.R.I. (Institute for Industrial Recovery-Government Organization).

This electrical manufacturing workshop was part of the "Ansaldo" Group which includes Shipyards, Steel Mills and Mechanical Workshops-Weapon Manufacturing.

e) S. Giorgio S.A.I. - Genova - Sestri - (see 1/c)

This firm was financially connected with Fermi - Societa per l'Industria e l'Elettricita -Genova-Rome- and with Odero-Terni Shipyards of Genova.

f) S.I. Ernesto Breda - Milano (Capital L.84,000.000).

The main lines of activity of this manufacturer are steam locomotives, mechanical workshop, airplane manufacturing-automatic weapon manufacturing.

g) Officine di Savigliano S.M. - Torino -(Capital L.30,000000)

The main line activity of this firm is mechanical constructions.

h) Cantieri Riuniti dell'Adriatico S.A. Officine Elettromeccaniche Trieste (see 2/c).

The main activites of this firm are naval constructions and shipyards.

i) A. Pellizzari & Figli - Arsignano (Vicenza).

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l) Officine Elettroferroviarie Tallero S.A.-Milano-Capital L.15,000.000).

Motors and distribution transformers only.

The main activities of this company are mechanical constructions and railroad card.

m) Officina Trasformatori Elettrici (O.T.E.) Bergamo

Power and distribution transformers only.

n) S.A. Industrie Elettriche di Legnano -Legnano(Milano Capital L.3,000.000).

o) Ercoli, Brioschi & C -S.A.-Novara-(Capital L.6,000.0

Distribution and Regulating transformers only.
Subsidiary of the Compagnia Generale di Elettricità (see I/b).

p) S.A. Elettromeccaniche Lomberdo Ingg. Frugnola & Solari - Sesto S. Giovanni (Milano) Capital L. 1,000.000)

Motors and special transformers only.

q) Società Trentina Elettromeccaniche S T E) Trento Transformers (up to 5000 KVA) only.

r) A. Nobili & C - Torino .

Distributing and Regulating transfor ers only.

s) Officine Elettrotecniche Italiane - Ing.V.Arcioni Milano

Regulating and special transformers only.

t) Officine Consorzio Elettrotecniche - Milano

Industrial Motors only .

u) Fabbrica Italiana Motori Elettrici Torino-Torino.

Small motors only.

v) Bozzi Sarico S.A. Elettromeccanica - Lambrate-Milano.

Small and special motors only.

w) Officine Lombarde Costruzioni Elettromeccaniche

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o) Scotti, Brioschi & C -S.A.-Severo-(Capital L.6,000.0 (

Distribution and Regulating transformers only.
Subsidiary of the Compagnia Generale di Elettricità (see i/o).

p) S.A. Elettromeccaniche Lombarde Ing. Cruciola & Galavi - Monte S. Giovanni (Milano) Capital L. 3,000,000)

Motors and special transformers only.

q) Società Trentina Elettromeccaniche S T E M) Trento
Transformers (up to 3000 KVA) only.

r) A. Nobili & C - Torino .

Distributing and Regulating transformers only.

s) Officina Elettrotecniche Italiane - Ing.F.Arcioni Milano

Regulating and special transformers only.

t) Officine Consorzio Elettro-chniche - Milano

Industrial Motors only .

u) Fabbrica Italiana Motori Elettrici Torino-Torino.

Small motors only.

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v) Bezzi Enrico S.A. Elettromeccaniaca - Lambrate-Milano.

Small and special motors only.

w) Officina Costruzioni Riparazioni Elettromeccaniche Napoletana OCREN Napoli (1941 Capital L. 5,000,000)

This company is financially connected with the SME group of Utilityes Companyes.

Distribution transformers only.

Electrical equipment repair shop.

x) Alfieri & Colli - Milano (Capital L.1,600,000)
Power and distribution transformers only.Hope

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7. E.I.T.E.P. S/A ROMA (Capital L.5,000.000).

Distribution transformers only.
Electrical equipment repair and maintenance shop.

NOTE 1. Among these manufacturers the first five (a,b,c,d,e) have built the largest sizes of generators, motors and transformers installed in the country.

A- Generators (hydraulic)	up to	50,000 KVA	
Turbo-generators	"	30,000 KVA	
Industrial motors		8,000 KVA	
Frequency convertors(with scherbius set)		20,000 KVA	
Synchronous converters up to	12,000 Amps	130 Volts	
D/C generators	" 12,800	"	350 Volts
Power transformers (3-phase) up to	110,000 KVA	at 220 KV	

NOTE 2. A)
Since 1931, due to the rapidly falling down of arket prices which occured during the generally business depression of that time, the most important manufacturers of this class at the suggestion of the Tecnomasio Brown-Boveri, agreed upon the organization of a commercial trust for the sale on the Italian arket only of electrical machinery above certain sizes and capacities.

The purposes of the trust were:

a) To insure a fair level of selling prices of said apparatus so that the prices could have taken into account not only the cost of materials and workmanship but also a fair percentage of engineering and general expenses, which later were higher for the main firms than for the smaller manufacturers.

b) To allot yearly to each manufacturer willing to enter the trust a fair quota of customers orders to be proportional to the average production capacity of his manufacturing plant. This quota was to be allotted according to the average production of each manufacturer during the previous three years.

The apparatus covered by the agreement were mainly:

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2) Rotating apparatus of greater size than 1000 KW at 1000 rpm or equivalent.

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Frequency Converters(with motorized set) 20,000 KVA
Synchronous converters up to 12,000 Amps 130 Volts
T/G generators " 12,000 " 350 Volts
Power transformers ( )-phase) up to 110,000KVA at 220 KV

Note 2. a)
Since 1931, due to the rapidly falling down of market prices which occured during the generally business depression of that time, the most important manufacturers of this class at the suggestion of the Tecnomasio Brown-Boveri, agreed upon the organization of a commercial trust for the sale in the Italian market only of electrical machinery above certain sizes and capacities.

The purposes of the trust were:

a) To insure a fair level of selling prices of said apparatus so that the prices could have taken into account not only the cost of materials and workmanship but also a fair percentage of engineering and general expenses, which later were higher for the main firms than for the smaller manufacturers.

b) To allot yearly to each manufacturer willing to enter the trust a fair quota of customers orders to be proportional to the average production capacity of his manufacturing plant. This quota was to be allotted according to the average production of each manufacturer during the previous three years.

The apparatus covered by the agreement were mainly:

285

1) Rotating apparatus of greater size than 1000KVA at 1000 rpm or equivalent.

2) Power transformers about 1200 KVA capacity.

Light and heavy traction equipment and marine equipment were not included in the agreement due to the rather complicate existing agreements between some of the manufacturers and the railway operating companies and shipyards.

This commercial trust was not compulsory for the manufacturers and it did not have at all the character of monopoly. The manager of one of the main utility concerns

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in Italy was appointed as president of the trust. By so doing the fascist government control which was not of course desired in this organisation could be avoided.

During the first years of its operation, the first seven manufacturers as above listed (a,b,c,d,e,f,g.) joint the trust, while later only the first five remained.

Roughly the production quota were as follows:
Telefunken Italiana Brown-Boveri 12%
Compagnia Generale di Elettricità 18%
The next three firms(c,d,e) 40%

In spite of competition by the minor manufacturers and difficulties originated by some of the main customers who never could realise the advantages of a more organised manufacturing and selling activity in this country this trust was in most cases reaching its scope.

The Government Concerns and Utilities were also ordering through these organisations, which fact proved that it was admitted by the majority of customers that the existence of a by far excessive number of manufacturers was actually a disadvantage for the general economy of the country, rather than an advantage.

It is to be noted that the prices quoted by the Italian Commercial Trust for the sale in this country were always considerably lower than the international market prices, with the exception of some cases which were actually due to " dumping" policy on the part of German and Swedish manufacturers.

The above mentioned commercial trust was not taking care of any export activity but only of the sale in the domestic market.

B) As to the export activity for large electrical apparatus this had its best years in 1931-1934 as a consequence of commercial agreements between the Russian and Italian Governments; important supplies of power plant, substation equipment and hydroelectric generators were made during those years to the U.S.S.R. and these orders were negotiated separately by each firm.

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In spite of competition by the minor manufacturers and difficulties originated by some of the main customers who never would realise the advantages of a more organised manufacturing and selling activity in this country this trust was in most cases reaching its scope.

The Government Concern and Utilities were also ordering through these organisations, which fact proved that it was admitted by the majority of customers that the existence of a by far excessive number of manufacturers was actually a disadvantage for the general economy of the country, rather than an advantage.

It is to be noted that the prices quoted by the Italian Commercial Trust for the sale in this country were always considerably lower than the international market prices, with the exception of some cases which were actually due to " dumping" policy on the part of German and Swedish manufacturers.

The above mentioned commercial trust was not taking care of any export activity but only of the sale in the domestic market.

B) As to the export activity for large electrical apparatus this had its best years in 1931-1934 as a consequence of commercial agreements between the Russian and Italian Governments; important supplies of power plant, substation equipment and h[illegible] traction locomotives were made during these years to the U.S.S.R. and these orders were negotiated separately by each firm.

Later in 1937, in Italy an other commercial trust was formed for the export of electrical equipments in general, including power plants equipment and traction

The main manufacturers of such equipment, including water wheels, turbines and all accessories for supply complete electrical ins[illegible]llations, joined this trust which was supported, although unofficially by the Italian Government.

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The Government was of course interested in some exporting activity even through this trust, as it was keen to import foreign currency.

The activity of these exporting trusts due to several difficulties which arose after 1930, was rather limited with the exception of some traction equipment.

Some important supplies were made in the Balcany States.

c) An attempt was also mad , back in 1916, to come to a commercial agreement between the manufacturers of large electrical apparatus and some of the most important manufacturers which had not joined the previous trust for the sale of industrial motors of average and small power and of distribution transformers.

The agreement should have been based on a fixed average selling price per KVA and for each class of such apparatus, but after one experimental year the idea had to be dropped due to the very strong competition of the minor manufacturers.

Most of these were located near the more industrial centers; Turin-Milan, and were concentrating their commercial activity in the same centers and in Rome for negotiations with Government Concerns.

The General expenses , both commercial and engineering of these small manufacturers were so low that their selling prices were far below the actual cost of production of the more important firms.

The engineering quality of their produce was often quite inferior with respect to the standard of the larger firms.

NOTE 1.

As a conclusion, considering the limited exporting activity, the experience made throught the commercial trust for the domestic sale proved that the number of manufacturares and suppliers which would supply apparatus up to the maximum ratings in the Italian market was by far above a reasonable limit.

If it were not for difficulties due to the presence of certain individuals and certain positions a greater concentration of the manufacturing activity would have been highly desirable.

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Even if a selling trust was organized for better distribution of the total required yearly production, the amount of quotas for several of the manufacturers did not justify their activity in the various lines.

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Even if a selling trust was organized for better distribution of the total required yearly production, the amount of quotas for several of the manufacturers did not justify their activity in the various lines.

In order to give an idea of average production figures, it may be interesting to recall few statistical data on power generation and energy consumption in this country for the last ten years.

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Year	Total Installed Generating Power Thousands KW	Total Yearly Consumption Millions KWh	Average KW h consumption per inhabitant	Total KM of electrified Railheads
1932	4500	10,200	238	2016
1937	4750	15200	350	4107
1941	5950	20200	460	5530

Although the percentage rate of electrical development cannot be said to be small, if the absolute figures are considered and it is considered that at least seven main manufacturing firms were contributing to the production work, together with at least about 50 more minor manufacturer covering various other lines, it is confirmed that a greater concentration of manufacturing workshops and a more spread standardisation of electrical products in general, would allow to reach a far better efficiency of the electrical manufacturing industry in this country.

CLASS 4. RECTIFIERS.

a) Tecnomasio Italiano Brown Boveri Milano (see 3/a).
Mercury-arc, steel tank, water and air cooled rectifiers.

b) Compagnia Generale di Elettricith - Milano (see 3/b).
Mercury arc, ~~xxxxxxxxxxxxx~~ steel tank rectifiers.

c) S. Giorgio S.A.I. Genova Sestri (see 3/c).
Mercury-arc, glass tube only.

d) S.A. Compagnia Italiana Westinghouse Freni & Segnali -Torino
(Capital L. 25,000.000).

Junction type, copper oxide " Kostox" rectifiers.

The main activity of this company was Braking Equipments for railhead card and traction in general.

It was connected by technical and financial agreement with the Westinghouse Brake & Signal Co. of Wilmerding,Pa.U.S.A. 291

e) Officine Subalpine Apparecchiature Elettriche - Torino -
Junction type, selenium oxide"Selex" Rectifiers.

f) I.V.E.M. - Industrie Vicentine Elettromeccaniche-Vicenza 282
Junction type.

NOTE 1. Complete data [illegible] to rectifiers

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CLASS 4. RECTIFIERS.

a) Tecnomasio Italiano Brown Boveri Milano (see 3/a).
Mercury-arc, steel tank, water and air cooled rectifiers.

b) Compagnia Generale di Elettricità - Milano (see 3/b).
Mercury arc, ~~steel tank~~ steel tank rectifiers.

c) S. Giorgio S.A.I. Genova Sestri (see 3/c).
Mercury-arc, glass tube only.

d) S.A. Compagnia Italiana Westinghouse Freni & Segnali -Torino
(Capital L. 25,000.000).

Junction type, copper oxide " Nester" rectifiers.

The main activity of this company was Braking Equipments for railhead cars and traction in general.

It was connected by technical and financial agreement with the Westinghouse Brake & Signal Co. of Pittsburg,Pa.U.S.A.

e) Officine Subalpine Apparecchiature Elettriche - Torino -
Junction type, selenium oxide"Selex" Rectifiers.

f) I.V.E.M. - Industrie Vicentine Elettromeccaniche-Vicenza
Junction type.

NOTE 1. When the State Railroads had to order considerable number of High powered 3600 Volts D/C rectifiers, required that these were manufactured in Italy, only two main companies were equipped for this production namely the Tecnomasio Italiano Brown-Boveri with the Brown Boveri design and the Compagnia Generale di Elettricità which was using the G.E. Co. design.
The standard type for this application is a 2000KW,3600 volts rectifier; this type was also supplied air cooled.

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The standard type for this application is a 2000 KW, 3600 volts rectifier; this type was also supplied air cooled.

NOTE 2 Maximum ratings reached:

up to 20,000 volts, 1000 KW for Radio Station service
up to 10,000 amps at 600 volts for chemical industry.

CLASS 3. SWITCHGEAR AND SWITCHGEAR DEVICES.(INCL. RELAYS).

a) Magrini S.A. Bergamo (Capital L.10,000.000).

This company was connected by technical agreement and majority owned by the Westinghouse Electric International Co of New York,U.S.A.

b) Tecnomasio Italiano Brown Boveri - Milano (see 3/a).

c) Compagnia Generale di Elettricita-Milano (see 3/b)

d) "AGE" Officine Elettromeccaniche e meccaniche-Lodi-
(Capital L.5,000.000)

It was majority owned and connected by technical agreement with the " Delle" Co of Lion, France.

e) Officine Elettromeccaniche Scarpa e Magnano Savona
(Capital L.3,200,000).

High voltage switch gear only.
This company was majority owned by the Edison Group of Utility Coys.

f) M.A.C.E. Societh anonima Costruzioni Elettromeccaniche, Bergamo

Medium and low voltage switchgear only.

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g) Bagnagatti A. - Milano Greco.

Switchboards and H.V. disconnecting switches only.

h) La Telemeccanica Elettrica Ing. Luria & Gregorini-Milano

Contactors and motor control devices only.

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i) Elettromeccanica Fantini - Milano.
Low voltage switchgear only.

l) Palazzoli Federico & Co. - Brescia.
Low voltage switchgear only.

m) C.I.M.E. Compagnia Italiana Materiali Elettrici -Milano
Contractors and motor control devices only.

n) S.A. Venessi - Milano.
Contractors and motor control devices only.

o) Officina Elettrotecnica Comense -S.A. - Como.
Low voltage switchgear only.

p) Officine Elettromeccaniche Rapisai - Parabiago - Milano.
Low voltage Nofuze small breakers and current limiters only.

q) Laboratorio Meccanico di Precisione - "Comarel"- Milano.
Panel switches only.

r) Greci A.à Farinelli - Milano.
Panel switches and wiring material only.

s) Muratori A. Laboratorio Elettrotecnico -Roma.
Protective and auxiliary relays only.

t) Ferraris Ing. Vittorio - Milano.
Mercury bulb auxiliary relays only.

u) Alo - Costruzioni Elettromeccaniche - Milano.
Auxiliary relays only.

v) Inmirzi Ing. E. - Napoli.
Supervisory controls only.

NOTES1. Maximum ratings reached:

A-C Automatic Circuit Breakers up to 230 KV.1200 Amp. up to 2500,000 KVA interrupting capacities at highest voltage ratings. both of the oil-poor design and of the compressed -air design, with maximum total breaking time of cycles 3, on 50 cycles basic.

Automatic Low-voltage air circuit breakers up to 20,000 Amperes A-C, or D-C (up to 600 volts)-automati 280
High speed D-C. automatic circuit breakers up to 3600 volts, and up to 3000 amperes.

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Low voltage switchgear only.

p) Officine Elettromeccaniche Rapisardi - Parabiago - Milano.
Low voltage Nofuze small breakers and current limiters only.

q) Laboratorio Meccanico di Precisione - "Comarel" - Milano.
Panel switches only.

r) Greci A.& Farinelli - Milano.
Panel switches and wiring material only.

s) Muratori A. Laboratorio Elettrotecnico - Roma.
Protective and auxiliary relays only.

t) Ferraris Ing. Vittorio - Milano.
Mercury bulb auxiliary relays only.

u) Alo - Costruzioni Elettromeccaniche - Milano.
Auxiliary relays only.

v) Imairzi Ing. E. - Napoli.
Supervisory controls only.

NOTE1. Maximum ratings reached:

A-C Automatic Circuit Breakers up to 230 KV.1200 Amp.
up to 2500,000 KVA interrupting capacities at highest voltage ratings.
both of the oil-poor design and of the compressed-air design, with maximum total breaking time of cycles 3, on 50 cycles basis.

Automatic Low-voltage air circuit breakers up to 20,000 Amperes A-C, or D-C (up to 600 volts)-automati 280
High speed D-C. automatic circuit breakers up to 3600 volts, and up to 3000 amperes.

NOTE 2 The three first manifacturers only have built and supplied complete switchgear equipments for all applications(A-C and D-C) up to the highest ratings.

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e) [illegible] Continentale Breda - Milano.

Only motors manufacturer.

f) S.I.C.M.A. (Società Italiana Costruzioni Materiali - Torino.

Only motors manufacturer.

g) Olivetti, Ing.Camillo & C. - Milano (Capital L. 2,000,000).

Instruments and measuring apparatus.

h) Officine Galileo S.A. - Firenze - (Capital L. 60,000,000).

This firm was mainly a manufacturer of optical and precision instruments but was manufacturing electrical instruments and measuring apparatus as a side activity.

It was financially connected with the S.A.I.S. Group of Galileo workers' Administration di Partecipazioni - Venice.

i) S.I.F.I.L. - Pozzi & Trevano - Milano.

Electrical instruments only.

NOTE - The same considerations as to excessive number of manufacturers and lack of standardization apply to this class as outlined for Item j.

Class 7. [illegible] and [illegible].

a) [illegible] S.A., Milano (Capital L. 500,000,000).

This concern is the most important producer of aluminium for the manufacture of hard aluminium. These are known both as pure aluminium and aluminium alloys (Ergal) by some of the subsidiary or connected companies, such as:

I.R.A. - Industrie Riunite Leghe Leggere - Porto Marghera (Venezia) (Capital L. 18,000,000).

I.N.A. - Industria Nazionale Alluminio - Milano.

S.A.V.A. - Società' Alluminio Veneto Azzoni - Porto Marghera (Venezia) (Capital L. 40,000,000).

b) Società' Metallurgica Italiana - Milano (Capital L. 60,000,000).

Aluminium and copper base wires and finished products of all types.

c) Società S.A., Stabilimento Mills - Genova Sampierdarena. (See Item 2/b).

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Aluminium tubes, wire and special alloys containers. With activity, at the inside Co, it was formerly connected to the Aluminium Co. of America for the manufacture in Italy of aluminium ophthalmic

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Opta (Ism was mainly a manufacturer of optical and precision instruments and was manufacturing electrical instruments and measuring apparatus as a side activity.

It was financially connected with the S.A.E.S. Group of Utilities Societa' Adriatica di Elettricita' - Venice.

4) S.I.P.I.E. - Pozzi & Invrea - Milano.

Electrical instruments only.

NOTE - The same considerations as to excessive number of manufacturers and lack of standardization apply to this class as outlined for Class 3.

Class 7. ELECTRICAL CONDUCTORS and CABLES.

a) Nazionale S.A. Milano (Capital L. 800,000,000).

This concern is the most important producer of aluminium for the manufacture of bare conductors. These are drawn both as pure aluminium and aluminium alloys (Almelec) by some of its subsidiary or associated companies, such as:

L.L.A. - Lavorazione Leghe Leggere - Porto Marghera (Venezia) (Capital L. 15,000,000).

I.S.A. - Industria Svizzera Alluminio - Brianza.

S.A.V.A. - Societa' Alluminio Veneto Anonima - Porto Marghera (Venezia) (Capital L. 40,000,000).

b) Societa' Metallurgica Italiana - Milano (Capital L. 60,000,000).

Aluminium and Copper bare wires and stranded conductors of all types.

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c) Arnaldo S.A., Stabilimento Nolo - Cavaso Treviglione. (See Class 2/5).

Aluminium steel-core and special alloys conductors. This activity, of the Arnaldo Co. is now formerly connected to the Aluminium Co. of America for the manufacture in Italy of aluminium steel-core conductors.

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d) Societa' Metallurgica C. Cornaglia - Napoli. (Capital Lire 10,000,000).

Copper and bronze bare conductors.

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e) Société Italiana Pirelli - Milano (Capital L. 300,000,000).

Most important manufacturer of insulated wires, conductors, and high voltage cables and their accessories up to the maximum voltages (up to 220,000 Volts - All insulated, Pirelli patent).

This company has considerable international activity and it owns several manufacturing and industrial plants abroad).

f) I.N.C.I.S.I. Industrie Nazionale Cavi Elettrici, Torino.
Capital L. 40,000,000.

Low voltage, telephone and high voltage cables and accessories.
Commercially connected with Pirelli Co.

g) S.A.C.S.A. Società' Italiana Conduttori Elettrici, Livorno.
Capital L. 8,000,000.

h) S. Guttalamai S.A., Milano (Capital L. 2,400,000).

i) S.A. Adolfo Parisi, Milano. (Capital L. 1,500,000).

Insulated conductors only.

l) S.A.F.I. Società' di Fili Isolati, Milano.

Wire winding on Italian patents.

m) F.I.S.E. Napoli (Capital L. 7,500,000).

Insulated conductors and cables only.
Subsidiary of the Pirelli Co.

Sect. 5. Line materials (Clamps, joints, connectors - aluminum and steel).

a) S. Valgata, Milano.

Moldy clamps and joints.
It was working on Russian patents.

b) I.F.I. Impresa Fornitore Industriali, Milano.

Specialized in jointing sleeves for aluminum conductors and bi-metal connectors.

c) Metallomeccaniche S.A. Milano.

Moldy clamps and joints.
It was working in connection with the German Thos Hoffman.

d) Metallurgica Bresciana S.A. Villa d'Ognate (Brescia) (Capital L. 30,000,000).

Mainly individual castings with a specialized branch of production

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Commercially connected with Pirelli Co.

g) S.I.S.E. Società Italiana Costruzioni Elettriche. Rivera. Capital L. 8,000,000.

h) S. Ambrogio S.A. Milano (Capital L. 2,400,000).

i) S.A. Adolfo Conte, Milano. (Capital L. 1,200,000).

Insulated conductors only.

l) S.A.F.I. Società An. Fili Isolati. Milano.

Use welding on Swiss patents.

m) F.I.C.S. Napoli (Capital L. 7,500,000).

Insulated conductors and cables only.
Subsidiary of the Pirelli Co.

B.... S. [illegible] (Steel, Joists, Structures - Riveted and Welded).

a) S. Valpolo, Milano.

Mainly sheets and joists.
It was working on American patents.

b) I.P.I. Ingegneri Produttori Industriali, Milano.

Specialized in jointing sleeves for aluminium conductors and bi-metal connectors.

c) Metallocostruzioni S.A. Milano.

Mainly sheets and joists.
It was working in connection with the German firm Hoffman.

d) Metallurgica Gardanese S.A. Villa d'Adda (Bergamo) (Capital L. 30,000,000).

Mainly mechanical working with a specialized branch of production of steel details and tackles for overhead line constructions. 278

e) Brioni Alessandro, Milano.

Mainly sheets and joints.

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f) Cardwell Lamps - Lecco (Como).

Safety lamps and juices.

g) S. Antonio Electrotecnica, Schenio, Brugi & Co. Milano.

Lamps and juices in general.
Specialized in mill apparatus for electrified railways.

h) Belgian A.A. Building (Belgium) Capital L. 30,000,000.

Specialized in drawn steel tubes (not welded Mannesmann type) and steel frames.

i) S.A.I.A. Società Anonima Industrie Automobilistiche, Trento (Capital L.).

Specialized in concrete steel poles of the open type (base jointed) for all types of line supports up to 220 KV transmission voltage).

j) Metal Tecnofilo S.A. Milano.

(specialized) in galvanized plus poles.

m) Pirelli Cables, Cadrelga (Milan).

(galvanized plus poles).

Class J. - LIGHTING APPLIANCES (including L.CAR).

a) C A R A E - Società' Riunite Lampe, Milano Centrale, Milano.

All types of lamps and lighting accessories.

b) PHILIPS S.A. Milano.

All types of lamps and lighting accessories.

c) Milano S.A. Novi Ligure (Alessandria).

Only lamps.

d) Tungsram Electric Italiana S.A. Milano.

Only lamps.

e) Belgian Lamps Distribuzione "Filgam" - Novi Ligure (Alessandria).

Only lamps.

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specialized in steel poles (for cables terminal towers) and steel towers.

d) S.E.A.M. Società' Generale Accumuli Centrifughi, Monte (Capital L.).

Specialized in concrete steel poles of the span type (less foldable) for all types of line supports up to 220 KV transmission voltage).

i) Ducati Trasmissioni S.A. Milano.

Specialized in prepared pine poles.

n) Pirelli Cabinet, Cabrelga (Udine).

Prepared pine poles).

CLASS 3. - Lighting and Signals (including Lamps).

a) O S R A M - Società' Rhumkorff Osram, Milano (Società Milano).

All types of lamps and lighting accessories.

b) [illegible] S.A., Milano.

All types of lamps and lighting accessories.

c) Philips S.A., Novi Ligure (Alessandria).

Only lamps.

d) Tungram Società' Italiana Philips S.A., Milano.

Only lamps.

e) Società' Lampade Elettriche "Tungram" - Novi Ligure (Alessandria).

Only lamps.

f) Neher S.A., Rome.

Luminous Tube signs only.

g) S.A. Fabbriche Riunite "Neon" - Milano.

Specialized in luminous tubes.

h) S.A.I.L.E. - Trieste.

Luminous tubes (low voltage).

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i) Telephone - Milano.

Specialized in Diffusing Equipment.

l) Ing. Cesare Reviglio - Milano.

Specialized in Street Lighting Equipment.

m, ...co Galileo S.a. - Florence - Reflectors.

n) La Filotecnica - A. Belmondo S.r. Milano - Reflectors.

NOTE - In the lighting accessories line, it was much felt in the country the exportation of German firms such as Siemens etc.

CLASS 40. - HEATING and REFRIGERATING - INDUSTRIAL and DOMESTIC APPLIANCES.

a) Termomeccanica Italiana Breda Severi - Milano (see p/a).

Induction, arc and Resistance Furnaces.
Electric-arc steam boilers.
Heating Domestic Appliances. Bread Ovens.

b) Compagnia Generale di Elettricita' Milano (see p/b).

Industrial and domestic Heating Appliances.

c) Ercole Marelli & Co. S.a. Sesto S.Giovanni (Milano) (see p/c).

Fans and Ventilation equipments.
Small motors for all kind of domestic appliances.

d) Ing. F. Terni & Co S.A. Milano.

Industrial resistance furnaces only.
Technical agreement with Swedish firms.

e) Ing. L. Englisberti & Co. S.A. Milano.

Arc furnaces for steel mills only.

f) S.P.I.M.I.P. - Società Milanese, Milano.

Resistance furnaces only.

g) E.F.Natherit - Berlin.

Technical agreement with Westinghouse Electric & Mfg. Co. East Pittsburgh, Pa. U.S.A.

a) Foradini S.A. - Milano.

Connected with English firms.

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Group 11. - Heating and Refrigeration - Industrial and domestic appliances.

a) Termomeccanica Italiana Società Anonima - Milano (see p/a).

Induction, Arc and Resistance Furnaces.
Electric-gas steam boilers.
Heating domestic appliances. Bread ovens.

b) Compagnia Generale di Elettricità' Milano (see p/b).

Industrial and domestic heating appliances.

c) Società Anonima A. Ge. S.A. Società Applicazioni Gilleano (Milano) (see p/c).

Fans and ventilation equipments.
Small motors for all kind of domestic appliances.

d) Ing. F. Tosi & Co. S.A. Milano.

Industrial resistance furnaces only.
Technical agreement with English firms.

e) Ing. L. Englefard & Co. S.A. Milano.

Arc furnaces for steel mill. only.

f) S.A.F.E.L.E. - Società Milanese, Milano.

Resistance furnaces only.

g) E.F.Derbyt - Torino.

Technical agreement with Portuguese Electric & Mfg. Co. East Pittsburgh, Pa. U.S.A.

h) Derbyt S.A. - Milano.

Connected with English firm.

i) S.O.R.I. - Novara.

Connected with English firms.

l) Soc. Elettro Siderurgici - Milano.

Electric furnaces up to 3000 K.

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a) N.A. Antonelli & Orlandi, Varese.

Wood ovens only.

b) Ing. G. Mazzucchi, Milano.

Electric and steam boilers.

c) Fabbriche Elettrotecniche Riunite, Milano.

Miscellaneous domestic appliances.

d) F.I.A.R. Torino (see 2/d).

Main manufacturer of domestic refrigerators with technical agreement for using patents of the Westinghouse Electric & Mfg. Co, East Pittsburg, Pa., U.S.A.

e) Ing. G. Dell'Orto, Milano.

Industrial and domestic refrigerating appliances.

f) Z. Zanelli, Milano.

Refrigerators.

NOTE 1 As to electric furnaces of the resistance type, the considerable development of industrial appliances caused the activity of quite a number of manufacturers and in this case also greater than what the local market had required.

Several of the manufacturers, at the exception of a,b,g were buying the electrical parts of the equipment from other manufacturers, in order to sell a complete installation.

NOTE 2 As to the domestic appliances the sale of electric cookers and other heaters had been considerably increasing during the last ten years. Due to the interest of the main distributing companies and the cooperation of the main manufacturers, the quality of these products was kept to a fairly good level although the prices were considerably low. The firms a, b, and c, were leading producers although other minor firms and German importers (Siemens) were holding their share.

The expansion of domestic refrigerators and other refrigerating appliances had been very intense.

Only recently the Fiat co. (Westinghouse refrigerator), and the firms g, and r, developed more activity in this line.

As to washing machines and other appliances, although the [illegible] co. could supply suitable motors, there was only selling activity of German imported products.

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NOTE 3 It can be said generally in this branch there was a much [illegible] of electrification, also now lack of control by official [illegible], which first was exercised both by the utility companies and

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main manufacturer of domestic refrigerators with technical assistance for using patents of the Westinghouse Electric & Mfg Co, East Pittsburg, Pa., U.S.A.

c) Ing. G. Dell'Orto, Milano.

Industrial and domestic refrigerating appliances.

z) S. Pertelli, Milano.

Refrigerators.

POINT 1 As to electric furnaces of the resistance type, the considerable development of industrial appliances caused the activity of quite a number of manufacturers and in this case also greater than what the local market had required.

Several of the manufacturers, at the exception of n.5.z were buying the electrical parts of the equipment from other manufacturers, in order to sell a complete installation.

POINT 2 As to the domestic appliances the sale of electric ranges and water heaters had been considerable increasing during the last ten years. Due to the interest of the main distributing companies and the cooperation of the main manufacturers, the quality of these products was kept to a fairly good level although the prices were considerably low. The firms a, b, and c, were leading producers although other minor firms and German importers (Miele) were taking their share.

The operation of domestic refrigerators and other refrigerating appliances had been very narrow.

Only recently the Pilot Co. (Westinghouse refrigerator), and 7 of the firms q, and z, developed more activity in this line.

As to washing machines and other appliances, although the Pilot Co. could supply suitable motors, there was only selling activity of German imported products.

POINT 3 It can be said that particularly in this branch there was a much felt lack of standardization rules and lack of control by official boards, which fact was complained both by the utility companies and the manufacturers.

Sect 11. ELECTRIC TRACTION EQUIPMENT.

a) Società Italiana Ernesto Breda - Milano - (see 3/a).

Electric and Diesel-electric locomotives. Storage-battery locomotives. Self propelled cars for tramway and railway service. Trolley buses. Electric brakes.

(This company had an agreement with the Fiat Co. for the supply of Diesel-electric locomotives, and with the C.G.E. and Alfa-Romeo for the supply of complete trolley buses. Manufacturer of brill brake on American patents).

b) Ansaldo S.A.I. Stabilimento Elettrotecnico, Genova, Sampierdarena. (See 3/b).

Electric locomotors and self propelled cars. Trolley-buses (with an agreement with AEG Graz for complete supplies).

c) Officine Meccaniche di Elettricità Milano. (see 3/c).

Electric locomotors and self propelled cars. Trolley buses. Electric brakes (Storage battery).

This company had agreements with the Fiat Co. for chassis and mechanical parts.

d) Ercole Marelli & C. S.A. Sesto S.Giovanni, Milano (see 3/d).

Electric locomotors and self propelled cars. Trolley buses. Connected by industrial agreement with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. U.S.A.

(This company had an agreement with the Fiat Co. for chassis and mechanical parts).

e) Officine di Savigliano S., Torino. (see 3/e).

Electric locomotors. Storage battery locomotives. It was manufacturing locomotives mainly for the Italian State Rail Roads (F.S.) on the contractor's design.

f) Società Italiana Brown Boveri, Milano. (see 3/f).

Electric locomotors and self propelled cars. It was mainly a steam locomotive manufacturer. It was manufacturing electric locomotives to Italian State R.R. designs.

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g) Società Nazionale Officine Savigliano S.A. - Reggio Emilia.

Electric locomotives and self propelled cars. Mechanical parts. Mainly railroad car manufacturer.

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b) Ansaldo S.A. Stabilimenti Elettromeccanici, Genova. Specialized. (see 3/8).

Electric locomotives and self propelled cars. Trolley-buses (with an agreement with Alfa Romeo for complete supplies).

c) Compagnia Generale di Elettricita' Milano. (see 3/5).

Electric locomotives and self propelled cars. Trolley buses. Electric trucks (storage battery).

This company has agreements with the Fiat Co. for chassis and mechanical parts.

d) Breda Ernesto & C. S.A. Sesto S.Giovanni, Milano (see 3/6).

Electric locomotives and self propelled cars. Trolley buses. Connected by technical agreement with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. U.S.A.

(This company has an agreement with the Fiat Co. for chassis and mechanical parts).

e) Officine di Savigliano S., Torino. (see 3/2).

Electric locomotives. Storage battery locomotives. In the manufacturing licenses solely for the Italian state rail roads (F.S.) on the customer's design.

f) Societa' Italiana Ernesto Breda, Milano. (see 3/7).

Electric locomotives and self propelled cars. It was mainly a steam locomotive manufacturer. It was manufacturing electric locomotives on Italian State R.R. design.

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g) Officine Meccaniche Italiane Reggiane S.A. - Reggio Emilia.

Electric locomotives and self propelled cars. Mechanical parts. Mainly railroad car manufacturer.

NOTE 1. The customers usually wanted to negotiate the complete supply of locomotives, self propelled cars, trolley buses etc. with the manufacturer of the electrical equipment so that the full responsibility of the operation was given to the electrical manufacturing company only.

This fact has as a consequence that a number of special agreements between electrical and mechanical manufacturers

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were stipulated or, in few cases, that the electrical manufacturer had to organize specialized mechanical departments in order to be able to make complete supplies.

This was also due to the relatively scarce specialization of the Italian mechanical manufacturers in the electric railway construction when the important program of railroad electrification were decided by the Government. During the last 15 years there was considerable activity in the State R.R. net electrification as well as in the private interurban electrification and tramways renewal.

NOTE 2 Biggest plants built.

Locomotives up to 3000 KW, 3600 Volts D=C, 80 miles per hr.
Electric Motor Trains (State R.R.) multiple control - 6 motors - 3600 volts D=C - 1100 KW - 100 miles per hr. top speed.
Tramways, three truck, high acceleration, multiple control, automatic starting.
Three axle trolley bus, 200 passenger, automatic starting.

NAME OF MANUFACTURER.

a) Ercole Marelli & C. S.A. Sesto S.Giovanni (Milano) (see 3/a).

Electric propulsion equipments for ships and submarines.
This company was not manufacturing the switchgear and special switchboards for this application, and was buying these mainly from the Magrini Co.

b) Magrini S.A. Bergamo (see 3/a).

Special switchboard and switchgear devices for marine application.

c) Compagnia Generale di Elettricita', Milano. (see 3/b).

Electric propulsion equipments for ships and submarines, complete with switchgear.

d) Tosi Societa Italiana Ernesto Tosi, Milano. (see 3/a).

Complete electric propulsion equipments for ships and submarines.

e) S.Giorgio S.A.I. - Genova Sestri. (see 3/c).

Electric propulsion equipments per Umbriaglia for submarines.
No switchgear.
It was working in connection with the Ansaldo-Fiat-Odero (A.F.O.) shipyards.

f) Cantieri Riuniti dell'Adriatico S.A. - Trieste (see 3/c).

Electric propulsion equipments. No switchgear. It was working in connection with the A.F.O. (same owners). Shipyards.

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3600 volts D-C - 1440 KW - 100 miles per hr. two speed.
Passenger, three truck, high acceleration, multiple control, automatic starting.
Three axle trolley bus, 200 passenger, automatic starting.

Class 12 MARINE EQUIPMENT.

a) Ercole Marelli & C. S.A., Sesto S.Giovanni (Milano) (see 3/a).

Electric propulsion equipments for ships and submarines.
This company was not manufacturing the switchgear and special switchboards for this application, and was buying these mainly from the Magrini Co.

b) Magrini S.A. Bergamo (see 3/a).

Special switchboard and switchgear devices for marine application.

c) Ansaldo Cantieri di Sestri-Ponente, Genova. (see 3/b).

Electric propulsion equipments for ships and submarines, complete with switchgear.

d) Costruzioni Meccaniche Nicolaio Breda Soc. A. Milano. (see 3/a).

Complete electric propulsion equipments for ships and submarines.

e) A.Giorgio S.A.I. - Genova Sestri. (see 3/a).

Electric propulsion equipments particularly for submarines.
No switchgear.
It was working in connection with the Ansaldo-Fiat-Orlando (A.F.O.) Shipyards.

f) Cantieri Riuniti dell'Adriatico S.A. - Trieste (See 3/a). 273

Electric propulsion equipments. No switchgear. It was working in connection with the C.R.A. (same concern). Shipyards.

g) Ansaldo S.A. - Genova Cornigliano - (See 3/a).

Electric propulsion equipments. No switchgear.
It was working in connection with the Ansaldo Shipyards.

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Annex 45. [illegible]

a) Società Generale Italiana Accumulatori Elettrici - Milan (Milano).
Capital L. 24,000,000.

"TUDOR" trade mark accumulator and dry batteries for all applications.

b) Fabbrica Accumulatori Hensemberger S.r. - Monza (Milano).

"Hensemberger" trade mark batteries.
It was controlling and subsidiary company here in Naples, i.e. the "Partenope" Co. (Società di Napoli) specialized in the manufacture of batteries for marine application.

c) Fabbrica Italiana Magneti Marelli - Sesto S.Giovanni (Milano).

d) Accumulatori Dott. Gnemi S.r. Milano (Capital L. 7,[illegible]).

e) Elettromeccanica Partelli Pedrelli - Monza (Milano).

Nickel-iron-alkaline batteries only.

NOTE - With (a) and one of the main battery manufacturers and very actively cooperating with other important firms for the development of storage battery electric trucks and vehicles.

Annex 46. WIRE TELEGRAPH and TELEPHONE APPARATUS.

a) F.A.T.M.E. - Brevetti Ericsson - Rome (Capital L. [illegible]).

This factory was owned and controlled by L.M.Ericsson Co. Sweden. - Capital L. 7,000,000 - which is a contracting society doing erection, installation and maintenance under every where in the country.

b) G.I.A.P. Milano.

This company was controlled and connected by agreements with the Siemens & Halske Co. (Germany).

c) S.A. Brevetti Arturo Perego, Milano.

All kind of telephone apparatus and connected equipments automatic stations - Relays - Special Switchboard telephone equipment for high-voltage transmission line equipment. Carrier current telephony.

d) F.A.C.M. Milano.

Telephone and telegraph apparatus and devices. Relays.

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manufacture of batteries for marine applications.

c) Fabbrica Italiana Magneti Marelli - (cap.) L.Newmark (Milano).

d) Accumulatori Dett. anonimi S.A. Milano (Capitale L. 7,[illegible]).

e) Elettrocarbonium Pertilli Bonelli - Monza (Milano).

Nickel-iron-alkaline batteries only.

NOTE - Plan (a) was one of the main battery manufacturers and was actively cooperating with other important firms for the development of storage battery electric trucks and vehicles.

Sect. 14. OTHER TELEPHONY and TELEGRAPHY APPARATUS.

a) P.A.T.M.E. - Prodotti Attuosa - Roma (Capital L. 2,000,000).

This factory was owned and controlled by S.I.E.M.E.N.S. Co. Rome. - Capital L. 7,000,000 - which is a contracting company doing erection, installation and maintenance works every where in the country.

b) C.I.A.P. Milano.

This company was controlled and connected by agreements with the Siemens & Halske Co. (Germany).

c) S.a. Prodotti Arturo Perego, Milano.

All kind of telephone apparatus and connected equipments Automatic switches - Relays - Special insulated telephone equipment for high-voltage transmission line application. Carrier current telephony.

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d) F.A.C.E. Milano.

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Telephone and telegraph apparatus and devices. Relays.

e) Allocchio Bacchini & Co. Milano (See also 6/g).

Carrier and high frequency telephone and telegraph equipments.

f) S.A.F.A.R. Milano. (See 15/a).

Special telephone and telegraph devices.

NOTE - The telephone service in the towns and their districts are run by private companies while the national telephone grid is a State property.

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The private companies in Italy have each a certain area of operation and may usually own or control repair, maintenance or sign manufacturing workshops, so that they were taking care of the operation and maintenance of radio installations.

Area 13. RADIO-TELEGRAPHIC SERVICES (Including PTT).

a) S.e.P.A.R. Milano.

Radio transmitter and receiver sets - Television - Not manufacturer of tubes.

b) Allgemeine Lenchkraft e.G. Milano. (See also 14/c and 5/g)

Radio transmitter and receiver sets. Television. Not manufacturers of tubes.

c) Officine Galileo - Firenze - Firenze.

Radio transmitter and receiver sets. Television. Manufacturer of tubes.

d) F.a.R.E. - Milano (See also 14/d).

Radio transmitter and receiver sets. No tubes.

e) Fabbrica Italiana Magneti Marelli. Sesto S. Giovanni (Milano).

Mainly radio receiver sets.
It was using tubes manufactured by the subsidiary company.
F.I.V.R.E. (See 13/f).

f) Fabbrica Italiana Valvole Radioelettriche - F.I.V.R.E. - Milano.

Vacuum tubes only. Only important manufacturer in the country.

g) Geloso (Società Elettrotecnica) - Milano. (See 5/b).

Radio receiver sets only. No tubes.

h) F.I.M.I. - S.A. Milano - Saronno.

Radio receiver sets only. No tubes.

i) Ducati - Società Industriale Radio Elettrotecnica Ducati - Bologna.
(Capital L. 12,000,000) (See also 17/j/a).

Specialized in the manufacture of radio equipment.

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Several other companies were specialized in the manufacture and assembling of whole sets parts and general items, etc. Their use [illegible]

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d) [illegible] - [illegible] - Geneva.

Radio transmitter and receiver sets, television apparatus or tubes.

e) F.A.C.E. - Milan (See Item 11/4).

Radio transmitter and receiver sets. No tubes.

f) Fabbrica Italiana Magneti Marelli, Sesto S. Giovanni (Milan).

Mainly radio receiver sets.
It was being taken over/controlled by its subsidiary company.
F.I.V.R.E. (See 15/5).

g) Fabbrica Italiana Valvole Radioelettriche - F.I.V.R.E. - Milano.

Vacuum tubes only. Only important manufacturer in the country.

g) Compagnia Generale di Elettricità - Milano. (See V/1).

Radio receiver sets only. No tubes.

h) F.I.M.I. - S.A. Milano - Monza.

Radio receiver sets only. No tubes.

i) Ducati - Società Anonima Radio Brevetti Ducati - Bologna.
(Capital L. 12,000,000) (See also V/7/c).

Specialized in the manufacture of radio condensers.

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[illegible] Several minor enquiries were specialized in the manufacture and assembling of radio set parts and record sets, with their own tubes exploitation and frequently using foreign patents.

Page 16. INSULATING MATERIALS.

A) MICANITE and MICANITE PRODUCTS.

a) Società' Italo - Inglese per l'Amianto - Torino.

b) Società' Micanite Valtellinese - Sondrio.

c) Società' Ital. "Stamia" - Genova.

B) INSULATING PAPER (MICA).

d) Ges. Anon. Cartiere Burgo - Verzuolo - (Cuneo).

e) Scientific Insulation - S.A. - Genk - (Belgium).

C) CARTON TUBE (PASTEBOARD, FIBRE).

f) Italo Vitturia - Bologna.

g) Westerfield & Tomlinson Italia Fenzi - Sappiano (Firenze).

D) CERAMIC PARTS.

h) Società' Italiana Ceramica - Milano.

Licensee of the Lapidite Corp. of U.S.A.

E) VARNISHES, COMPOUNDS - TREATED PAPER and FABRICS - SPECIAL PRODUCTS and MOLDED MATERIALS.

i) Giorgio Negri & C. - Milano.

Insulating varnishes - Micanite and lapidite products.

l) Imperial S.A. - Bergamo - (see 5/a).

Treated paper and fabrics. Micarta products manufactured on Westinghouse Electric & Mfg. Co. patents and processes. Micanite products. Micarta gears. Special micarta plates. Molded materials.

m) Vanzetti & Martinek S.A. - Milano.

Synthetic resins. Lapidite products. Insulating varnishes. Molded materials. Wire and micanite products. For this manufacture see Note.

n) Ing. S.A. Fabbricazione Isolanti Elettrici. Milano.

Treated paper (phenolized). Cylinders. Tubes.

o) Società Lapidite Lapidite Eng. Prodi. Milano.

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e) Artificio Lumaco - S.A. - Lumo - (Bergamo).

d) [illegible] (INSULATING, PLATE).

f) Keller Vittorio - Saronno.

g) Materiale e Tessuto Gelio Vonti - Saggiono (Milano).

D) [illegible].

h) Società' Italiana Resine - Milano.

Licensee of the Bakelite Corp. of U.S.A.

E) VARNISHES, COMPOUNDS - TREATED PAPER and FABRICS - SYNTHETIC RESINS and MOLDED MATERIALS.

i) Giorgio Negri & C. - Milano.

Insulating varnishes - micanite and bakelite products.

l) Ungrind S.A. - Bergamo - (see S/c).

Treated paper and fabric. Micarta products manufactured on Westinghouse Electric & Mfg. Co. patents and processes. Micanite products. Micarta gears. Special micarta plates. Molded materials.

m) Resti & Martini S.A. - Milano.

Synthetic resins. Bakelite products. Insulating varnishes. Molded materials. Mica and micanite products. For this manufacture see Note.

n) Isola S.A., Fabbricazione Isolanti Elettrici. Milano. 270

Treated paper (shellacked). Cylinders. Sheets.

o) Fabbrica Isolanti Bakelite Dep. Orsati. Milano.

p) Società' Industrie Mica Italiana. [illegible].

F) VULCANIZED FIBER MATERIAL.

q) S.A. Fibra Vulcanizzata. Milano.

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E) [illegible] and [illegible]

a) Società' It. Ghisa Centrifugati. Mecca. (S. Indiano) Milano.

Moldati materiale and special resins.

a) Società' Italiana Pirelli. Milano. (See also 7/c).

E) [illegible] Oils.

b) S.A. Petrolifera A. Feltrec. Genova.

c) Ferma. S.A. Raffinerie Petrolifere. Genova.

F) Glass and Pottery.

a) Filmeca S.A. Vetraria. Milano. (Capital L. 5,400,000).

Glass insulators. Miscellaneous glass products.

a) Manifattura Isolatori Vetro Angui - M.I.V.A. - Milano - Angui.

Glass and pyrex insulators. Miscellaneous glass products.

a) S.I.V.I. Consorzio Italiano Vetrio Isolatori. Milano.

This concern was a selling trust among the most important electrical porcelain manufacturers in Italy such as: -

Ginori - Florence.
Cascades - Liguria.
Ceramica - Trentino.
F.I.L. - Abruzzi.

All porcelain insulators therefore were ordered through this selling trust, without possibility for the customer to select any particular manufacturer belonging to the trust.
Ties were made by this trust to standardize the most important lines of porcelain insulators for the usual applications.

y) S. Italiana del Gres - Ing. Gola - Bergamo.

Glass insulators and gres products.

NOTE - The firm Società Anonima (14/a) has been trying to take over all the production and sale of insulating materials of all kinds, except porcelain, in the Italian market.
It was working in other words toward the formation of a monopoly; various competitive firms were bought up or controlled by the Società Anonima, such as the Cemmai e Vitta de. (see 17/b) and Isola S.A. (see 14/a), with which latter it had commercial Agreements, the Ingenieri Ge. (see 16/1), the F.A. Ceramiche Ghisleria di Lecco (see 3/c) and other minor firms.

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2) Glass and ceramic.

v) Filmen S.r.l. Vetraria, Milano. (Capital L. 5,400,000).

Glass insulators. Miscellaneous glass products.

w) Manifatture Isolatori Vetro Angeli - M.I.V.A. - Milano - Angeli.

Glass and tyres insulators. Miscellaneous glass products.

x) C.I.V.I. Consorzio Italiano Vasellio Isolatori, Milano.

This consort was a selling trust among the most important electrical porcelain manufacturers in Italy such as -

Ginori - Florence.
Chevalier - Ligure.
Cerosian - Trentino.
F.I.I. - Libourne.

All porcelain insulators therefore were ordered through this selling trust, without possibility for the customer to select any particular manufacturer belonging to the trust.
The work made by this trust to standardize the most important kinds of porcelain insulators for the usual applications.

y) S. Italiana del Vetro - Dr. Gola - Bergamo.

Glass insulators and glass products.

Note - The firm Montì & Martini (16/a) has been trying to take over all the production and sale of insulating materials of all kinds, except porcelain, in the Italian market.
It was trying in other words toward the formation of a monopoly; various competitive firms were bought or [illegible] by the Montì & Martini, such as the Nuovoni & Villa Co. (See 17/y/c) and Isola S.A. (See 16/n) with which latter it had commercial agreements, the Negrini Co. (See 16/1), the S.A. Industrie Elettriche di Legnano (See 3/n) and other minor firms.
As to the Negrini Co. (See also 3/n) which is the property of the Westinghouse Electric International Co. of New York, the Montì & Martini was looking at this manufacturer as one of its strongest competitors especially because of the far better quality of production of the Negrini Co. This to such an extent that late in 1940, after the war broke, the Montì & Martini managed in Rome, with the support of the Fascist government, to take the control of the Negrini by buying only a very small percentage (4%) of the competitive company shares.

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Also the Ansaldi & Martini come to some agreement with the fascist
magnates (Tim Martini V. (Via Settembrini, 37 - Milano) which was
trading mica and plastic-mass insulating materials.
As the quality of the production of the Ansaldi & Martini had always
been rather poor, the trust headed by this manufacturing was controlling
through the fascist government in fact practically all importation
permits from abroad, and licenses which could have been released to
other firms for the manufacture of insulated materials.

CLASS 17 - INSULATING MATERIAL PRODUCTS.

A) Cables and wires

a) Società di Cavi, Milano, Berlino.

b) Società S.A. Cavi.

c) S A F I L H Bologna. S. Viola.

d) S.A. Fabbrica di f. Milano.

e) Officine di Savigliano S.E. Torino.

f) Officine Elettrotecniche Taliaro. Milano.

g) "Pirelloni" Officine Meccaniche Ind. S.A. Reggio Emilia.

B) Wires and insulators.

a) Officine Meccaniche Riglio S.A. Milano.

b) "S A F I" Bologna.

This firm was connected with American firm.

c) S A F I L H Bologna S. Viola.

This company was connected by technical agreement with the
Westinghouse Electric & Mfg.Co., East Pittsburgh, Pa., U.S.A.

C) Ceramic insulators & Stoneware.

a) Società Italiana Ceramo-Cervi - Milano.

b) Compagnia Generale di Elettricità - Milano.

c) Ercole Marelli & C. S.A. Fabbr. Ceramiche - Milano.

d) Ing. Stefano Malagoli - Milano.

e) Officine Elettrotecniche Taliaro - Milano.

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a) Ceretti & Tanfani, Milano, Savigliano.

b) Ansaldo S.A., Genova.

c) A N S A L D O Bologna. 3. Viale.

d) S.A. Schneider & C. Milano.

e) Officine di Savigliano S.A. Torino.

f) Officine Elettroferroviarie Tallero. Milano.

g) "Breda" Officine Meccaniche Ital. S.A. Viale Sarca.

h) [illegible] and Engineering.

a) Officina Meccanica Stigler S.A. Milano.

b) "T I S" Naples.

This firm was connected with American firm.

c) S A B I E H Bologna 3. Viale.

This company was composed by technical agreement with the Westinghouse Electric & Mfg.Co., East Pittsburgh, Pa., U.S.A.

d) [illegible] Apparecchi.

a) Fabbrica Italiana Lenti-Zerboni - Milano.

b) Compagnia Generale di Elettricita' - Milano.

c) Ercole Marelli & C. S.A. Sesto S.Giovanni - Milano.

d) Ing. Gaetano Maggini - Milano.

e) Officina Elettrotecnica Tallero - Milano.

f) I P E T A - S. Ann. Milano - Precotto.

g) A. Zerbi & c. Pavino.

h) Scotti Arienti & C. S.A. - Novara (See 3/c).

i) G E N E - S. Ital. Generali Elettrici.

j) [illegible] Ercolano.

a/Fabbrica Italiana N.E. Milano - (See 3/c).

b) S.A. Pompeo & Villa - Milano (See 6/3/a).

It was manufacturing also condenser bushings.

c) Ramati - Soc. Scient. Radio Brevetti - Bologna.

d) A.Pellizzari & Figli - Arcignano (Vicenza) (See 3/4)

e) Magrini S.A. - Bergamo - (See 5/a).

f) "Microfarad" - Fabbrica Ital. Condensatori - Milano.

E) LEYDEN ARRESTERS.

a) Magrini S.A. - Bergamo (See 5/a).

b) Compagnia Generale di Elettricita' - Milano (See 3/b).

Parts of the arresters were imported.

c) Tecnomasio Italiano BB - Milano (See 3/a).

Parts of the arresters were imported.

d) Ing. J. Haber - Milano.

Parts of the arresters were imported. Connected with Corona Flam.

F) [illegible] WINDING.

a) Ing. S. Belotti & C. S.A. Milano.

b) Laboratorio Chimico Verban - Milano.

c) I N O I - Milano.

d) S.A. Ital Lavori - Marelli - Milano.

G) [illegible] and RESISTORS.

a) Soc. Ital. Forni Elettrici & Elettrocarbonium - Ascoli Piceno
Connected with Corona Flam.

b) Officine Micro-Elettromeccaniche S.A. - Milano.

c) Marelli & Martini - S.A. Milano (See 16/3/a).

d) Ing. S. Belotti & C. S.A. Milano.

e) Soc. Elettrografite di Forno (Milano, Milano.

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E) [illegible].

a) Ingrind S.A. - Bergamo (see 5/a).

b) Compagnia Generale di Elettricita' - Milano (See 5/b).

Parts of the structure were imported.

c) Termomeccanico Italiano SE - Milano (see 5/a).

Parts of the structure were imported.

d) Ing. J. Huber - Milano.

Parts of the structure were imported. Connected with German firm.

F) [illegible].

a) Ing. A. Balzaretti & C. S.A. Milano.

b) Laboratorio Chimico Verban - Milano.

c) S I S I - Milano.

d) S.A. Vial Saldare - Electric - Milano.

G) [illegible].

a) Soc. Ital. Forni Elettrici & Elettrometallurgici - Ansaldi Milano
Connected with German firm.

b) Officine Elettro-Metallurgiche S.A. - Milano.

c) Ercole & Marzoni - S.A. Milano (see 16/5/a).

d) Ing. A. Balzaretti & C. S.A. Milano.

e) S.A. Elettrografite di Forno Allione, Milano.

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Arc-furnace electrodes and electrodes for electrolytic cells.

f) Societa' "Il Carbonio" Milano (Capital L. 1,300,000).

H) [illegible].

a) Ernesto Haldberg & C. S.A. Milano.

b) Elpem - S.A. Lavoriginferiori - Milano.

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c) [illegible] S.r.l. - Milano.

d) S.r.l. S.O.A.S. - Ing. A.Gervasi - Monte S.Giovanni - Milano.

f) [illegible].

a) Fabbriche Italiane Magneti Marelli - Monte S.Giovanni - Milano.

b) S.A.N.F.A.S. - Milano.

h) [illegible], [illegible] and [illegible] for [illegible].

a) Terni S.A. Terni (Roma).

Magnetic steel laminations.

b) Fonderia Milanese di Acciaio Vanzetti - Milano.

Special steel and cast iron alloys.

m) [illegible],

a) Ing. Pasquini & C. Milano.

b) Croci A. & Parisotti - Milano.

c) O.M.C. - Officine Elettromeccaniche Comerio - Varese.

d) Federico Finzi & C. - Arcore.

e) Officine Elettromeccaniche Ingianni - Pandiago - Milano.

f) ALO' - Costruzioni elettromeccaniche - Milano.

g) Elettromeccanica Marabelli & Ferraresi - Milano.

h) Fabbrica Ital. Apparecchi Elettrici - Milano.

i) Offic. Elettromeccaniche C. Colombo - Monte Amiata.

l) Offic. Elettrotecniche A.Baldassi - Milano Lavagna.

m) Giovanni Bosco - Offic. Elettromecc. Torino.

n) Ing. Paolo Alta. Torino.

o) F. Apili & C. Monte Calvario, Varese.

p) Siemens S. A. C. Milano.

q) [illegible] - Elettromeccanici riuniti - Bari.

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a) Terni S.A. Terni (Rome).

Magnetic steel laminations.

b) Fonderia Milanese di Acciaio Vanzetti - Milan.

Special steel cast iron alloys.

M) STEEL MATERIAL.

a) Ing. Franchini & C. Milan.

b) Orsi A. & Perfumelli - Milan.

c) O.T.O. - Officina Elettrotecnica Comense - Como.

d) Federico Falconi & C. - Brescia.

e) Officine Elettromeccaniche Naplesi - Pandiago - Milan.

f) ALO' - Costruzioni elettromeccaniche - Milan.

g) Elettromeccanica Marabelli & Verrasni - Milan.

h) Fabbrica Ital. Apparecchi Elettrici - Milan.

i) Off.ic. Elettromeccanica G. Colombo - Rho (Milan).

l) Off.ic. Elettrotecnica A.Balbaci - Milan Precotto.

m) Giovanni Bruno - Off.ic. Elettromec. Turin.

n) Ing. Paolo Ajta. Turin.

o) F. Ballì & C. Santo Caloredo. Varese.

p) Metallurgica S. & C. Milan.

q) "Safe" - Elettroimpianti originali - Rome.

r) S A S I B - S.A. S.Bernardi - Bologna.

s) S I E I - S.Ind. Elettromeccanica Lombarda - Milan Brescia.

t) " A V E " - Vestone (Brescia).

u) S I E I - Unione Italiana Tubi Isolanti - Milan.

Protective pipes of the Bergmann type only.

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v) S.A. G.Ratelli & F. Milano.

Only protective pipes.

w) S.A. Ing. I. Tibi Metallini Flessibili, Torino.

Flexible metal protective pipes only.

Note - Particularly in this branch of manufacturing industry there are an excessive number of manufacturers, the above listed ones being only the more important. No authentication value were effectively issued about the wiring material which in this country are not undergoing any approval by control boards or control laboratories.

Class 13. Erection contractors.

a) Impresa Umberto Girola - Milano - Lecco.

Most important contractor for hydro-electric plant construction work. Lecco and artificial lakes.

b) Torno Giuseppe & C. S.A. - Milano.

c) S.A.F. - Società' An. Elettrificazione - Milano.

Specialised in railroad electrification work.

d) S.E.A.E. - Trento.

Specialised in the erection of high voltage transmission lines, especially with steel concrete span poles.

e) Vitaliano Gotti - Milano - Roma - Napoli.

Electric transmission and telephone lines and installations.

f) S I E L T E - Milano and all important towns.

Specialised in the erection of telephone lines.

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REMARKS.

1. The above classified list of manufacturers includes only the main Italian or foreign manufacturers having their plants and workshops in Italy.

Several minor firms were not mentioned which cannot be considered as important because they were mostly assemblers of materials bought from other manufacturers and sometimes imported from abroad. There were of course also organizations of foreign companies such as Siemens Schuckert (Berlin), A E G A (Sweden), Brown (Switzerland) and others, which were occasionally supplying electrical materials and apparatus of special characteristics.

Other informations on manufacturers and sellers in the Italian market can be obtained from the "Repertorio Elettrotecnico Italiano" published in 1941 by the Associazione Elettrotecnica Italiana (A.E.I.) Milano (Via Pasquale 10) 6th Edition.

It is to be noted however that the information as given by this publication on the actual production and engineering standing of the listed manufacturers were not checked by the publishers.

2. The Italian C.E.I. (Comitato Elettrotecnico Italiano) had been issuing in recent years a complete set of Standard Rules for the specification of characteristics and tests of electrical apparatus and materials in general.

These standards were supposed to be a basis for the ordering specifications and for the witnessed tests of such apparatus and materials. These rules however, while being always accepted by the manufacturers were very frequently disregarded by the Italian customers who had always been asking the manufacturers for special designs and characteristics and particularly for sub-of-standard apparatus, devices and materials. This fact was occurring also with very important customers and was one of the causes for the very poor level of standardization reached in the country.

It is to be noted that the standards as issued by the Italian C.E.I. were not in every case imposing definite lines of characteristics and data to be taken as compulsory; very frequently the C.E.I. rules were simply recommending some standards. This also explains why for instance a standardization of the operating frequencies, and of the operating voltages (both low-voltage and high voltages) was never reached.

Also no standardized line of horse power ratings for industrial motors nor for distribution transformers was ever adopted and the same situation existed even for house motors, lamps, domestic appliances etc. etc.

As to operating frequencies it can be said that roughly the country is split into three parts: 45 cycles in Southern and a portion of Central Italy (with exception of Sicily); 50 cycles in part of Central Italy and in North-western Italy; 42 cycles in Milano district and in North-eastern Italy.

As to distribution voltages it can be said that most of Southern Italy has 150/300 volts as standard, while Central Italy has 127/220 - Northern Italy uses both these voltages although

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As to distribution voltages it can be said that most of Southern Italy has 150/260 volts as standard, while Central Italy has 127/220 - Northern Italy uses both these voltages although the 127/220 is more spread. 264

3. As to the number of manufacturers working for the Italian market in each branch, it has been already pointed out in the footnotes to Classes 3, 5, and 16, that this number was by far

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executive for the needs of the market, which fact was causing very frequently unfair competition, too low selling prices and consequently poorer quality of production.

It can be mentioned that a large A-C generator could have been negotiated with at least five possible suppliers (see Class 3/a,b,c,d, e).

A distribution transformer could have been supplied by at least 16 manufacturers, and an industrial motor by at least 14 manufacturers.

A high voltage, high interrupting capacity automatic circuit breaker could have been built in Italy by at least 3 important manufacturers, while a low voltage automatic breaker by at least 9 manufacturers.

A large power electric locomotive could have been supplied by seven important manufacturers.

A meter could have been supplied by at least six important manufacturers.

As to the engineering equipments and testing laboratories existing with the manufacturers, it has been already mentioned that there was no high power testing laboratory in the country, while there were at least five high voltage impulse testing laboratories with the manufacturers (Class 3/c,e, Class 3/a, Class 7/e, Class 17/3b). Most of the important manufacturers were of course provided with high voltage and high current testing transformers.

Looking this situation back in 1939 the Italian fascist government had planned and was supposed since then to control through the so called Ministry of Corporations any installation of new manufacturing plants and also any extension of existing plants. Such a task would of course be a rather difficult one for the fascist government and the reasons why may be easily understood.

Most of the manufacturers in case of their interests who were either members of the fascist Chamber of Corporations or were strictly connected with members of the fascist government so that the idea of keeping through government control the industrial situation in the field of electrical construction as well as in all other branches of manufacturing activities in the country completely failed.

Rome, May 1944.

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Tel. 489061 VSB/cdc.

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/CA/PWU 158 4 October 1944

Subject : Transmittal of Electricity Consumption Report Central Italy.

To : Agencies shown in Distribution list.

1. Transmitted herewith is a copy of a statistical report entitled "Electricity Consumption Central Italy", September 1944.

2. The figures showing the peak load supplied to Rome by Hydro Plants are not exact because meters are not available on all of the incoming lines to Rome and the consumption in the area surrounding Rome is not definitely known. It is expected that the condition will be remedied by the time the next report is rendered.

E.J. BARRY
Major C.E.,
Acting Chief, Elec.Div.

Distribution:

CE AFHQ
CE AAI
DW AAI
Flag Officer Western Italy
CE No. 1 District
CE No. 2 District
CE No. 3 District
C.G. R.A.A.C.
Engineer P.B.S.
Electrical Officer, Region IV A.C.C.
Electrical Officer, Region V A.C.C.
Electrical Officer, Region VIII A.C.C.
Allied Force Local Resources Section R.A.A.C. CF.
Secretary A.F.L.R. (Italian) Board.

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ELECTRICITY CONSUMPTION
CENTRAL ITALY
SEPTEMBER 1944

ELECTRICAL DIVISION
PUBLIC WORKS AND UTILITIES
SUB-COMMISSION
HEADQUARTERS ALLIED CONTROL COMMISSION
APO 394

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ROME

Maximum permitted daily consumption: 166,000 kw-hr plus available output from Rome Steam plants.

Maximum permitted demand: 8,200 plus available capacity of Rome Steam plants.

Controlling Authority. R.A.A.C.

Date	Total Consumption kw-hr	Maximum demand kw	Supplied from Hydro kw-hr	Hydro Peak Load kw
September, 1944				
1	692,266	39,100	291,120	15,400
2	643,821	31,300	373,220	14,000
3	567,469	29,500	213,389	14,200
4	603,771	30,800	282,343	13,200
5	611,103	30,700	383,675	13,300
6	562,354	29,300	258,012	13,400
7	513,157	28,800	276,051	14,000
8	568,872	27,800	292,483	14,300
9	535,436	28,200	295,464	14,600
10	571,005	30,400	295,689	14,400
11	491,167	25,300	248,525	12,500
12	466,325	27,600	232,675	12,200
13	548,736	28,300	219,569	12,900
14	561,614	28,900	200,571	9,800
15	571,489	29,200	217,315	15,300
16	630,369	32,100	298,332	14,100
17	577,016	26,600	278,815	13,400
18	553,751	29,600	223,637	12,500
19	577,464	29,600	294,470	10,600
20	505,699	25,400	190,997	10,000
21	564,647	30,900	246,718	13,900
22	591,124	31,000	226,133	11,400
23	580,120	30,100	220,999	14,500
24	534,010	26,800	268,354	13,000
25	516,185	27,900	253,381	14,500
26	509,054	24,800	210,126	10,200
27	499,982	25,000	220,803	13,100
28	475,770	24,400	228,237	12,200
29	485,359	24,200	250,934	12,000
30	373,373	19,700	230,299	11,700

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C I V I T A V E C C H I A

Maximum permitted energy daily consumption:

Maximum permitted demand: 3,000 KW

Controlling Authority: F.B.S.

Date	Consumption in kw-hr			Average Maximum Daily Demand Kilowatts		
	City	Cement Mill	Total	City	Cement Mill	Total
Sept. 1944						
1	5,800	12,400	18,200			
2	4,500	17,600	22,100			
3	5,700	13,900	19,600			
4	7,300	19,100	26,400			
5	7,700	18,200	25,900			
6	8,400	17,200	25,600			
7	7,400	20,400	27,800			
8	6,700	19,200	25,900			
9	6,400	15,500	22,900			
10	7,800	14,800	22,600			
11	7,800	19,300	27,100			
12	7,700	19,500	27,200			
13	7,500	19,300	26,800	350	1200	1550
14	7,900	14,600	22,500			
15	7,100	8,000	15,100			
16	7,800	21,300	29,100			
17	6,500	15,500	22,000			
18	5,600	16,100	21,700			
19	5,700	18,700	24,400			
20	3,300	8,400	11,700			
21	3,700	13,600	17,300			
22	5,000	16,000	21,000			
23	6,800	9,700	16,500			
24	6,600	2,500	9,100			
25	4,900	11,700	16,600			
26	6,400	17,700	24,100			
27	5,000	8,200	13,200			
28	5,600	20,200	25,800			
29	5,400	13,100	18,500			
30	5,600	9,900	15,500			

Declassified E.O. 12356 Section 3.3/NND No. 785019

ELECTRICITY GENERATION AND DISTRIBUTION

T E R N I A R E A

Weekly production

Date	Cerwara Generation		Spoleto Generation		Steel-works Generation		Nera Montoro Generation (to Terni)	
	Weekly production kw-hr	Maximum demand kw	Weekly production kw-hr	Maximum demand kw	Weekly production kw-hr	Maximum demand kw	Weekly production kw-hr	Maximum demand kw
Sept.1944								
10 - 16	284,799	3,000	19,488	200			472,500	4,000
17 - 23	292,728		20,200		43,518		372,600	
24 - 30	247,818	4,600	20,482	130	64,310	1,200	308,700	4,000

Consumption of Terni Co. Plants

Date	Papigno Carbide Works		Terni Steel Works		Nera Montoro Chemical Plant		Spoleto Cement Plant and Mines		Electric Services	
	Weekly use kw-hr	Maximum demand kw	Weekly use kw-hr	Maximum demand kw	Weekly use kw-hr	Maximum demand kw	Weekly use kw-hr	Maximum demand kw	Weekly use kw-hr	Maximum demand kw
Sept.1944										
10 - 16	80,240	800	30,000	1,000	230,100	3,000	21,000	200	5,600	50
17 - 23	82,800				111,000		54,000		5,000	
24 - 30	90,000	800			55,739	1,000	65,100	800	12,600	

Distribution to other consumers

Date	Interessen Co. (Terni City Distribution)		Societa' Prodotti Esplosivi Antrochioi		Tramways (Terni)		UNES Co. (to Spoleto)		258 UNES Co. (to Rieti for Superfossile Co)	
	Weekly distribution kw-hr	Maximum demand kw	Weekly distribution kw-hr	Maximum demand kw	Weekly distribution kw-hr	Maximum demand kw	Weekly distribution kw-hr	Maximum demand kw	Weekly distribution kw-hr	Maximum demand kw

10 - 16	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	472,500	4,600
17 - 23	292,720		20,200		43,518		372,500			
24 - 30	247,816	4,000	20,482	130	64,310	1,200	308,700	4,000		

Consumption of Terni Co. Plants

Date	Papigno Carbide Works		Terni Steel Works		Nera Montoro Chemical Plant		Spoleto Cement Plant and Mines		Electric Services	
	Weekly use kw-hr	Maximum demand kW	Weekly use kw-hr	Maximum demand kW	Weekly use kw-hr	Maximum demand kW	Weekly use kw-hr	Maximum demand kW	Weekly use kw-hr	Maximum demand kW
Sept.1944										
10 - 16	80,240	800	30,000	1,000	230,100	3,000	21,000	200	5,600	50
17 - 23	82,800				111,000		54,000		5,000	
24 - 30	90,000	800			55,739	1,000	65,100	800	12,600	

Distribution to other consumers

Date	Interamna Co. (Terni City Distribution)		Societa' Prodotti Esplosivi Autorchioi		Tramways (Terni)		UNES Co. (to Spoleto)		UNES Co. (to Rieti for Supertessile Co)	
	Weekly distribution kw-hr	Maximum demand kW	Weekly distribution kw-hr	Maximum demand kW	Weekly distribution kw-hr	Maximum demand kW	Weekly distribution kw-hr	Maximum demand kW	Weekly distribution kw-hr	Maximum demand kW
Sept.1944										
10 - 16	154,978	2,000	2,066	50	7,820	1,000	232,040	2,500		
17 - 23	158,120		2,346		8,410		205,860		24,000	
24 - 30	173,482	1,500	2,217	20	9,940	170	221,299	2,000		

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19 AUG Recd 1580

Subject:- Electricity Intelligence Italy.

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HQ ALLIED ARMIES IN ITALY

Tel. FILPOT 31

2065/DW

18 Aug. 44.

H.Q., A.C.C. for Public Works & Utilities
Sub Commission.

Enclosed please find copy of schedule of the most important manufacturers of Electrical apparatus and materials, for your information.

E.J. ROWBERRY
Capt. R.E.
for Brigadier,
Director of Works

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Dy Col Depper
dtd. 19/8/44

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Circulate to
Major Barry
~~Major Hunter~~
~~Major Brandt~~
and return

Solicitation
As many copies
as possible
(say 10)

to Captain Smyth
for forwarding

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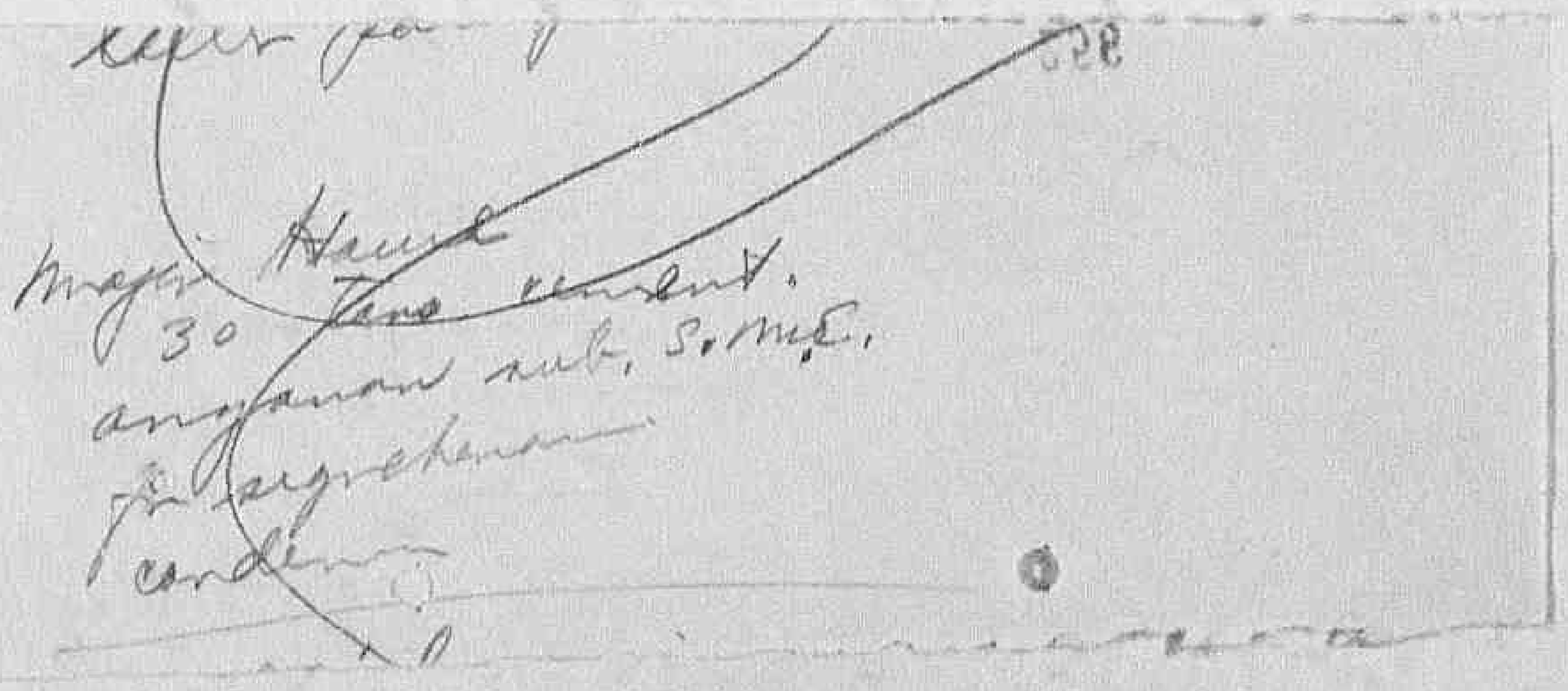

Ltd Lapp.

I T A L Y

MANUFACTURERS of ELECTRICAL APPARATUS and MATERIALS

Italy

Declassified E.O. 12356 Section 3.3/NND No. 785019

Italy

Declassified E.O. 12356 Section 3.3/NND No. 785019

I T A L Y - Info. No. . . . . .

MANUFACTURERS of ELECTRICAL APPARATUS and MATERIALS

The manufacturers have been listed according to the following classes :-

Class 1 Water wheels and their Accessories.
" 2 Steam Turbines, Gas and Oil Prime Movers.
" 3 A - C and D - C Generators, Meters and Converters.
" Transformers and Regulators.
" 4 Rectifiers.
" 5 Switchgear and Switchgear Devices (Incl Relays).
" 6 Meters, Instruments and Measuring Apparatus.
" 7 Electrical Conductors and Cables.
" 8 Line Materials (Clamps, Joints, Connectors -
" Brackets and Poles).
" 9 Lighting Appliances (Incl. Lamps)
" 10 Heating and Refrigerating - Industrial & Domestic
" Appliances.
" 11 Electric Traction Equipments.
" 12 Marine Equipments.
" 13 Batteries.
" 14 Wire Telephony and Telegraphy Apparatus.
" 15 Radio Communication Apparatus (Incl. Tubes).
" 16 Insulating Materials (Incl. Porcelain)
" 17 Electrical Miscellaneous Materials.
" 18 Important Contractors (for Hydro-plant construction and transmission line erection works).

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NOTE 1. For each class the main manufacturers only have been listed

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"		Transformers and Regulators.
"	4	Rectifiers.
"	5	Switchgear and Switchgear Devices (Incl Relays).
"	6	Meters, Instruments and Measuring Apparatus.
"	7	Electrical Conductors and Cables.
"	8	Line Materials (Clamps, Joints, Connectors -
"		Brackets and Poles).
"	9	Lighting Appliances (Incl. Lamps)
"	10	Heating and Refrigerating - Industrial & Domestic
"		Appliances.
"	11	Electric Traction Equipments.
"	12	Marine Equipments.
"	13	Batteries.
"	14	Wire Telephony and Telegraphy Apparatus.
"	15	Radio Communication Apparatus (Incl. Tubes).
"	16	Insulating Materials (Incl. Porcelain)
"	17	Electrical Miscellaneous Materials.
"	18	Important Contractors (for Hydro-plant construction and transmission line erection works).

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NOTE 1. For each class the main manufacturers only have been listed and by order of importance in the Italian market.

NOTE 2. The invested capitals for limited companies are specified in Lire, as they were officially known in 1937.

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Class 1. WATER WHEELS and ACCESSORIES.

a) S.A. Costruzioni Meccaniche RIVA - Milano - (Capital L. 12,000,000).

S.A. Alessandro Calzoni - Bologna - (Capital L. 10,000,000).

These two firms are connected by technical, commercial and financial agreements.

b) S.A. De Pretto - Escher Wyss - Schio (Vicenza) - (Capital L. 5,300,000).

Connected by technical and commercial agreement with firm Escher - Wyss of Switzerland.

c) S.A. Franco Tosi - Legnano (Milano) - (Capital L. 51,000,000)

S.A.I. San Giorgio - Sestri (Genova) - (Capital L. 60,000,000)

These two companies are connected by technical and commercial agreements for the manufacture and sale of hydraulic turbines and their accessories only.

d) A. Pellizzari & Figli - Arzignano (Vicenza).

e) S.A. Acciaierie e Tubificio - Brescia - (Capital L. 20,000,000)

Tubi Togni Patent - This firm is specialised in steel ring reinforced penstocks only and hydraulic accessories.

NOTE 1. The first three concerns (a,b,c) can supply water wheels up to maximum sizes, governors and all other accessories.

The fourth firm (d) is mainly a manufacturer of centrifugal pumps.

NOTE 2. Highest ratings reached. Hydraulic power plants have been equipped by these manufacturers with water. - Wheels up to 70,000 HP capacity.

Penstocks have been built for heads up to 1096 meters, in Italy.

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CLASS 2. STEAM TURBINES, GAS and OIL PRIME MOVERS.

a) S.A. Franco Tosi - Legnano (Milano) - (see 1/c).

b) ANSALDO S.A. - Geneva Sampierdarena (Capital L. 150,000,000).

c) Cantieri Riuniti dell'Adriatico S.A. - Trieste - (Capital L. 100,000,000).

d) FIAT S.A. Torino - (Capital L. 400,000,000).

Only large DIESEL motors.

e) Societa Forni e Impianti Industriali - Milano.

Steam boilers only and erection work.

NOTE 1. Highest ratings reached - Steam turbines have been built up to 30,000 KW - Diesel Motors for stand-by plants up to 10,000 HP.

NOTE 2. The first two manufacturers (a, b) have built the main Diesel motor generator sets for stationary installations.

FIAT S.A. have built the main Diesel motor for marine installation.

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CLASS 3. A-C and D-C GENERATORS, MOTORS, CONVERTERS, TRANSFORMERS and REGULATORS.

a) Tecnomasio Italiano Brown Boveri - Milano (Capital Lire 64,000,000).

Connected by technical, commercial and financial agreement with Brown Boveri Co. of Baden, Switzerland.

b) Compagnia Generale di Elettricita - Milano - (Capital L. 64,000,000).

It was majority owned by the General Electric Co. of Schenectady N.Y. U.S.A. Connected by technical and commercial agreement with the G.E. Co. and A.E.G. Berlin.

c) Ercole Marelli & Co. Sesto S. Giovanni - Milano (Capital L. 54,000,000).

Connected by technical and commercial agreement with the Westinghouse Electric & Mfg. Co. of East Pittsburg, Pa. U.S.A.

d) Ansaldo S.A. Stabilimento Elettrotecnico - Genova - Cornigliano (see 2/b).

This firm was controlled by I.R.I. (Institute for Industrial Recovery - Government Organization).

This electrical manufacturing workshop was part of the "Ansaldo" Group which includes Shipyards, Steel Mills and Mechanical Workshops - Weapon Manufacturing.

e) S. Giorgio S.A.I. - Genova Sestri (see 1/c).

This firm was financially connected with Terni - Societa per l'Industria e l'Elettricita - Genova - Roma - and with Odero - Terni Shipyards of Genova.

f) S.I. Ernesto Breda - Milano - (Capital L. 84,000,000)

The main lines of activity of this manufacturer are steam locomotives, mechanical workshop, airplane manufacturering - automatic weapon manufacturing.

g) Officine di Savigliano S.N. - Torino - (Capital L. 30,000,000)

The main line of activity of this firm is mechanical constructions.

h) Cantieri Riuniti dell'Adriatico S.A. Officine Elettromeccaniche Trieste (see 2/e).

The main activities of this firm are naval constructions and shipyards.

Declassified E.O. 12356 Section 3.3/NND No. 785019

agreement with the G.E. Co. and A.E.G. Berlin.

c) Ercole Marelli & Co. Sesto S. Giovanni - Milano (Capital L. 51,000,000).

Connected by technical and commercial agreement with the Westinghouse Electric & Mfg. Co. of East Pittsburg, Pa. U.S.A.

d) Ansaldo S.A. Stabilimento Elettrotecnico - Genova - Cornigliano (see 2/b).

This firm was controlled by I.R.I. (Institute for Industrial Recovery - Government Organization).

This electrical manufacturing workshop was part of the "Ansaldo" Group which includes Shipyards, Steel Mills and Mechanical Workshops - Weapon Manufacturing.

e) S. Giorgio S.A.I. - Genova Sestri (see 1/c).

This firm was financially connected with Terni - Societa per l'Industria e l'Elettricita - Genova - Roma - and with Odero - Terni Shipyards of Genova.

f) S.I. Ernesto Breda - Milano - (Capital L. 84,000,000)

The main lines of activity of this manufacturer are steam locomotives, mechanical workshop, airplane manufacturering - automatic weapon manufacturing.

g) Officine di Savigliano S.N. - Torino - (Capital L. 30,000,000)

The main line of activity of this firm is mechanical constructions.

h) Cantieri Riuniti dell'Adriatico S.A. Officine Elettromeccaniche Trieste (see 2/c).

The main activities of this firm are naval constructions and shipyards.

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i) A. Pellizzari & Figli - Arzignano (Vicenza).

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i) Officine Elettroferroviarie Tallere S.A. - Milano - (Capital L. 18,000,000).

Motors and distribution transformers only.

The main activities of this company are mechanical constructions and railroad card.

m) Officina Trasformateri Elettrici (O.T.E.) Bergamo.

Power and distribution transformers only.

n) S.A. Industrie Elettriche di Legnano - Legnano (Milano) (Capital L. 3,000,000).

o) Scotti, Brieschi & C - S.A. - Novara - (Capital L. 6,000,000)

Distribution and Regulating Transformers only.
Subsidiary of the Compagnia Generale di Elettricita (see 3/b).

p) S.A. Elettromeccanica Lombarda Ingg. Grugnola & Solari - Sesto S. Giovanni (Milano) (Capital L. 3,000,000).

Motors and special transformers only.

q) Societa Trentina Elettromeccanica (S T E M) Trento
Transformers (up to 5000 KVA) only.

r) A. Nobili & C - Torino.

Distributing and regulating transformers only.

s) Officine Elettrotecniche Italiane - Ing V Arcioni - Milano.

Regulating and special transformers only.

t) Officine Consorzio Elettrotecnico - Milano.

Industrial motors only.

u) Fabbrica Italiana Motori Elettrici Torino - Torino.

Small motors only.

v) Bassi Enrico S.A. Elettromeccanica - Lambrate (Milano).

Small and special motors only.

w) Officina Costruzioni Riparazioni Elettromeccaniche Napoletana

O C R E N - Napoli - (1941 - Capital L. 5,000,000).

This company is financially connected with the S.M.E. Group of Utility Companies.

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Distribution transformers only.

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o) Scotti, Brieschi & C - S.A. - Novara - (Capital L. 6,000,000)

Distribution and Regulating Transformers only.
Subsidiary of the Compagnia Generale di Elettricita (see 3/b).

p) S.A. Elettromeccanica Lombarda Ingg. Grugnola & Solari - Sesto S. Giovanni (Milano) (Capital L. 3,000,000).

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r) A. Nobili & C - Torino.

Distributing and regulating transformers only.

s) Officine Elettrotecniche Italiane - Ing V Arcioni - Milano.

Regulating and special tranaformers only.

t) Officine Commerzio Elettrotecnico - Milano.

Industrial motors only.

u) Fabbrica Italiana Motori Elettrici Torino - Torino.

Small motors only.

v) Bezzi Enrico S.A. Elettromeccanica - Lambrate (Milano).

Small and special motors only.

w) Officina Costruzioni Riparazioni Elettromeccaniche Napoletana

O C R E N - Napoli - (1941 - Capital L. 5,000,000).

This company is financially connected with the S.M.E. Group of Utility Companies.

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Distribution Transformers only.

Electrical equipment repair shop.

x) Alfieri & Colli - Malino - (Capital L. 1,600,000)

Power and distribution transformers only. Repair shop.

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y) M.A.T.E.R. S/A ROMA (Capital L. 5,000,000).

Distribution transformers only.
Electrical equipment repair and maintenance shop.

NOTE 1. Among these manufacturers the first five (a,b,c,d,e) have built the largest sizes of generators, motors and transformers installed in the country.

A-C Generators (hydraulic)	up to	60,000 KVA
Turbo - generators	" "	30,000 KW
Industrial motors	" "	8,000 HP
Frequency convertors (with scherbius set)	" "	20,000 KVA
Synchroncus converters up to 12.000 Amps.		130 Volts
D/C Generators " " 12,800 "		350 Volts
Power transformers (3-phase) up to 110,000 KVA at		220 KV

NOTE 2. A)

Since 1931, due to the rapidly falling down of market prices which occurred during the general business depression of that time, the most important manufacturers of this class at the suggestion of the Tecnomasio Brown Boveri, agreed upon the organisation of a commercial trust for the sale in the Italian Market only of electrical machinery above certain sizes and capacities.

The purposes of the trust were :-

a) To insure a fair level of selling prices for said apparatus so that the prices could have taken into account not only the cost of materials and workmanship but also a fair percentage of engineering and general expenses, which latter were higher for the main firms than for the smaller manufacturers.

b) To allot yearly to each manufacturer willing to enter the trust a fair quota of customers' orders to be proportional to the average production capacity of his manufacturing plant. This quota was to be allotted according to the average production of each manufacturer during the previous three years.

The apparatus covered by the agreement were mainly :-

1) Rotating apparatus of greater size than 1000 KVA at 1000 rp.m. or equivalent.

2) Power transformers above 1200 KVA capacity.

Light and heavy traction equipment and marine equipment were not included in the agreement due to the rather complicate existing agreements between some of the manufacturers and the Railway operating companies and Shipyards.

This commercial trust was not compulsory for the manufacturers and it did not have at all the character of monopoly. The manager of one of the main utility concerns in Italy was appointed as president of the trust. By so doing, the fascist government control which

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Power transformers (3-phase) up to 110,000 KVA at 220 KV

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During the first years of its operation, the first seven manufacturers as above listed (a,b,c,d,e,f,g) joined the trust, while later only the first five remained.

Roughly the production quota were as follows :-

Tecnomasio Italiano Brown Boveri	12%
Compagnia Generale di Elettricita	28%
The next three firms (c,d,e)	40%

In spite of competition by the minor manufacturers and difficulties originated by some of the main customers who never would realise the advantages of a more organized manufacturing and selling activity in this country, this trust was in most cases reaching its scope.

The Government Concerns and Utilities were also ordering through this organisation, which fact proved that it was admitted by the majority of customers that the existence of a by far excessive number of manufacturers was actually a disadvantage for the general economy of the country, rather than an advantage.

It is to be noted that the prices quoted by the Italian Commercial trust for the sale in this country were always considerably lower than the international market prices, with the exception of some cases which were actually due to "dumping" policy on the part of German and Swedish manufacturers.

The above mentioned commercial trust was not taking care of any export activity but only of the sale in the domestic market.

B). As to the export activity for large electrical apparatus, this had its best years in 1931 until 1934 as a consequence of commercial agreements between the Russian and Italian Governments; important supplies of power plant, substation equipment and heavy traction locomotors were made during these years to the U.S.S.R. and these orders were negotiated separately by each firm.

Later in 1937, in Italy, another commercial trust was formed for the export of electrical equipments in general, including power plant equipment and traction.

The main manufacturers of such equipment, including water-wheels, turbines and all accessories for supply complete electrical installations, joined this trust which was supported, although unofficialy, by the Italian Government.

The government was of course interested in some exporting activity even through this trust, as it was keen to import foreign currency.

The activity of this exporting trust, due to several difficulties which arose after 1938, was rather limited with the exception of some traction equipment.

Some important supplies were made in the Balkan States.

C). An attempt was also made, back in 1936, to come to a commercial agreement between the manufacturers of large electrical apparatus and some of the more important manufacturers which had not joined the previous trust, for the sale of industrial motors of average and small power and of distribution transformers.

The agreement should have been based on a fixed average selling price per KVA and for each class of such apparatus, but after one experimental year the idea had to be dropped due to the very strong competition of the minor manufacturres.

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Most of these were located near the more industrial centers (Turin-Milan) and were concentrating their commercial activity in the same centers and in Rome for negotiations with Government Concerns.

The general expenses, both commercial and engineering, of these small manufacturers were so low that their selling prices were far below the actual cost of production of the more important firms.

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The engineering quality of their produce was often quite inferior with respect to the standard of the larger firms.

NOTE 3. As a conclucion, considering the limited exporting activity the experience made through the commercial trust for the domestic sale proved that the number of manufacturers and suppliers which would supply apparatus up to the maximum ratings in the Italian market was by far above a reasonable limit.

If it were not for difficulties due to the presence of certain individuals and certain positions, a greater concentration of the manufacturing activity would have been highly desirable.

Even if a selling trust was organised for better distribution of the total required yearly production, the amount of quotas for several of the manufacturers did not justify their activity in the various lines.

In order to give an idea od average production figures, it may be interesting to recall few statistical data on power generation and energy consumption in this country for the last ten years.

Year	Total Installed Generating Power Thousands KW	Total Yearly Consumption Millions KW-hrs	Average KW-hrs consumption per inhabitant	Total Km. of electrified Rail-heads (State).
1932	4,500	10,200	238	2,016
1937	4,750	15,200	350	4,107
1941	5,990	20,200	460	5,530

Although the percentage rate of electrical development cannot be said to be small, if the absolute figures are considered and it is considered that at least seven main manufacturing firms were contributing to the production work, together with at least about 50 more minor manufacturers covering various other lines, it is confirmed that a greater concentration of manufacturing workshops and a more spread standardization of electrical products in general, would allow to reach a far better efficiency of the electrical manufacturing industry in this country.

CLASS 4. RECTIFIERS.

a) Tecnomasio Italiano Brown Boveri - Milano (see 3/a).
Mercury-arc, steel tank, water and air cooled rectifiers.

b) Compagnia Generale di Elettricita - Milano (see 3/b).
Mercury-arc, steel tank rectifiers.

c) S. Giorgio S.A.I. - Genova Sestri (see 3/c).
Mercury-arc, glass tube only.

d) S.A. Compagnia Italiana Westinghouse Freni & Segnali - Torino.
(Capital L. 25,000,000).

Junction type, copper oxide "Westox" rectifiers.

The main activity of this company was Braking Equipments for railroad coaches and traction in general.

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In order to give an idea of average production figures, it may be interesting to recall few statistical data on power generation and energy consumption in this country for the last ten years.

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Mercury-arc, glass tube only.

d) S.A. Compagnia Italiana Westinghouse Freni & Segnali - Torino.
(Capital L. 25,000,000).

Junction type, copper oxide "Bestox" rectifiers.

The main activity of this company was Braking Equipments for railroad cars and traction in general. 247

It was connected by technical and financial agreement with the Westinghouse Brake & Signal Co. of Wilmerding, Pa. U.S.A.

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e) Officine Subalpine Apparecchiature Elettriche - Torino - Junction type, selenium oxide "Selex" Rectifiers.

f) I.V.E.M. - Industrie Vicentine Elettromeccaniche - Vicenza - Junction type.

NOTE 1 When the State Railroads had to order considerable number of high powered 3600 Volts D/C rectifiers, required that these were manufactured in Italy, only two main companies were equipped for this production namely the Tecnomasio Italiano BrownBoveri with the Brown Boveri design and the Compagnia Generale di Elettricita which was using the G.E. Co. design.

The standard type for this application is a 2000 KW, 3600 volts rectifier; this type was also supplied air cooled.

NOTE 2 Maximum ratings reached :-

up to 20,000 volts, 1000 KW for Radio Station Service.
up to 10,000 amps at 850 volts for chemical industry.

Class 5. SWITCHGEAR and SWITCHGEAR DEVICES (Incl. RELAYS).

a) Magrini S.A. - Bergamo - (Capital L. 10,000,000).

This company was connected by technical agreement and majority owned by the Westinghouse Electric International Co. of New York, U.S.A.

b) Tecnomasio Italiano Brown Boveri - Milano - (see 3/a).

c) Compagnia Generale di Elettricita - Milano -(see 3/b).

d) "Adda" Officina Elettrotecniche e meccaniche - Lodi - (Capital L. 5,000,000).

It was majority owned and connected by technical agreement with the "Delle" Co. of Lion, France.

e) Officine Elettromeccaniche Scarpa & Magrano S.A., Savona. (Capital L. 3,200,000).

High Voltage switchgear only.
This company was majority owned by the Edison Group of Utility Coys.

f) S.A.C.E. Societa Anonima Costruzioni Elettromeccaniche, Bergamo.

Medium and low voltage switchgear only.

g) Bagnagatti A. - Milano Greco.

Switchboards and H.V. Disconnecting switches only.

h) La Telemeccanica Elettrica Ing. Luria & Gregorini - Milano.

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design.

The standard type for this application is a 2000 KW, 3600 volts rectifier; this type was also supplied air cooled.

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c) Compagnia Generale di Elettricita - Milano -(see 3/b).

d) "Adda" Officine Elettrotecniche e meccaniche - Lodi - (Capital L. 5,000,000).

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e) Officine Elettromeccaniche Scarpa & Magnano S.A., Savona. (Capital L. 3,200,000).

High Voltage switchgear only.
This company was majority owned by the Edison Group of Utility Coys.

f) S.A.C.E. Societa Anonima Costruzioni Elettromeccaniche, Bergamo.

Medium and low voltage switchgear only.

g) Bagnagatti A. - Milano Greco.

Switchboards and H.V. Disconnecting switches only.

h) La Telemeccanica Elettrica Ing. Maria & Gregorini - Milano.

Contactors and motor control devices only.
It was connected with the "Telemecanique Electrique", France.

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i) Elettromeccanica Fantini - Milano.

Low voltage switchgear only.

l) Palazzoli Federico & Co. - Brescia.

Low voltage switchgear only.

m) C.I.M.E. Compagnia Italiana Materiali Elettrici - Milano.

Contractors and motor control devices only.

n) S.A. Vanzzi - Milano.

Contractors and motor control devices only.

o) Officina Elettrotecnica Comense - S.A. - Como.

Low voltage switchgear devices only.

p) Officine Elettromeccaniche Turpizzi - Parabiago - (Milano).

Low voltage Nofuze small breakers and current limiters only.

q) Laboratorio Meccanico di Precisione - "Comarel" - Milano.

Panel switches only.

r) Greci A. & Parinelli - Milano.

Panel switches and wiring material only.

s) Muratori A. Laboratorio Elettrotecnico - Roma.

Protective and auxiliary relays only.

t) Ferraris Ing. Vittorio - Milano.

Mercury bulb auxiliary relays only.

u) Alo - Costruzioni Elettromeccaniche - Milano.

Auxiliary relays only.

v) Landirsi Ing. E. - Napoli.

Supervisary controls only.

NOTE 1. Maximum ratings reached:

A-C Automatic Circuit Breakers up to 230 KV. 1200 Amps.
up to 2,500,000 KVA interrupting
capacities at highest voltage
ratings.

both of the oil-poor design and of the compressed-air design 245

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o) Officina Elettrotecnica Comense - S.A. - Como.

Low voltage switchgear devices only.

p) Officine Elettromeccaniche Rapisardi - Parabiago - (Milano).

Low voltage Nofuze small breakers and current limiters only.

q) Laboratorio Meccanico di Precisione - "Comarel" - Milano.

Panel switches only.

r) Crocci A. & Parinelli - Milano.

Panel switches and wiring material only.

s) Muratori A. Laboratorio Elettrotecnico - Roma.

Protective and auxiliary relays only.

t) Ferraris Ing. Vittorio - Milano.

Mercury bulb auxiliary relays only.

u) Alo - Costruzioni Elettromeccaniche - Milano.

Auxiliary relays only.

v) Isadrzi Ing. E. - Napoli.

Supervisory controls only.

NOTE 1. Maximum ratings reached:

A-C Automatic Circuit Breakers up to 230 KV. 1200 Amps.
up to 2,500,000 KVA interrupting capacities at highest voltage ratings.

both of the oil-poor design and of the compressed-air design with maximum total breaking time of 3 cycles, on 50 cycles basis. 245

Automatic Low-voltage air circuit breakers up to 30,000 Amperes A-C, or D-C (up to 600 volts)- automatic.

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High Speed D-C. automatic circuit breakers up to 3600 volts, and up to 3000 amperes.

NOTE 2 The three first manufacturers only have built and supplied complete switchgear equipments for all applications (A-C and D-C) up to the highest ratings.

The fourth and fifth manufacturer, have built and supplied mainly A-C high-voltage circuit breakers and disconnecting switches up to the highest ratings.

NOTE 3 As to the guarantees on the specified interrupting capacities for automatic circuit breakers, it is to be noted that only the first three manufacturers were connected by technical agreements with foreign firms equipped with high-power testing laboratities which are among the most powered ones in the world.

This point was very important due to the lack in Italy of any high-power testing laboratory.

This fact was causing considerable misunderstandings between manufacturers and customers in this rather delicate engineering branch.

NOTE 4 The same consideration as pointed out for Class 3 of manufacturers (see Notes 2 and 3 for Class 3) hold as well for this class of switchgear manufacturers.

There was in the market a by far excessive number of minor manufacturing firms with inadequate or inexistent technical and engineering equipment so that the market prices and the very large number of different designs were causing considerable troubles to the larger and better equipped manufacturers.

This situation was made worse due to the fact that quite often even the larger customers were giving their preference to the lower priced switchgear apparatus.

NOTE 5 As to the activity in the switchboard manufacturing line, there were several minor contracting rather than manufacturing companies which were supplying even to the larger customers completely assembled switchboards and in doing so they were looking for the cheapest type of switchboard devices.

NOTE 6 As to the low voltage switchgear and small circuit breakers there was also a much felt lack of standardisation rules.

Class 6 METERS, INSTRUMENTS and MEASURING APPARATUS.

a) Istrumenti di Misura "C.G.S." S.A. Milano (Capital Lire 9,000,000).

This firm was manufacturing instruments, meters and also instrument transformers up to highest voltages. 244

b) Compagnia Generale di Elettricita - Milano (see Class 3/b).

c) Societa I S A R I A - Milano.

Only meters manufacturer.

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NOTE 3 As to the guarantees on the specified interrupting capacities for automatic circuit breakers, it is to be noted that only the first three manufacturers were connected by technical agreements with foreign firms equipped with high-power testing laboratories which are among the most powered ones in the world.

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Class 6 METERS, INSTRUMENTS and MEASURING APPARATUS.

a) Istrumenti di Misura "C.G.S." S.A. Milano (Capital Lire 9,000,000).

This firm was manufacturing instruments, meters and also instrument transformers up to highest voltages. 244

b) Compagnia Generale di Elettricita - Milano (see Class 3/b). 247

c) Societa I S A R I A - Milano.

Only meters manufacturer.

d) Stabilimenti Siry Chaman - Milano (Capital L. 9,000,000).

Only meters manufacturer.

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e) Compagnia Contenintale Brust - Milano.

Only meters manufacturer.

f) S.I.C.E. Societa Italiana Contatori Elettrici - Torino.

Only meters manufacturers.

g) Allocchio, Bacchini & C. - Milano. (Capital L. 2,000,000).

Instruments and Measuringapparatus.

h) Officine Galilee S.A. - Firenze - (Capital L. 60,000,000).

This firm was mainly a manufacturer of optical and precision instruments and was manufacturing electrical instruments and measuring apparatus as a side activity.

It was financially connected with the S.A.D.E. Group of Utilities - Societa Adriatica di Elettricita - Venice.

i) S.I.P.I.E. - Forzi & Trovero - Milano.

Electrical Instruments only.

NOTE - The same considerations as to excessive number of manufacturers and lack of standardisation apply to this class as outlined for Class 5.

Class 7. ELECTRICAL CONDUCTORS and CABLES.

a) Montecatini S.A. Milano - (Capital L. 800,000,000).

This concern is the most important producer of aluminum for the manufacture of bare conductors. These are drawn both as pure aluminium and aluminium alloys (Aldrey) by some of its subsidiary or connected companies, such as:

L.L.L. - Lavorazione Leghe Leggere - Porto Marghera (Venezia) (Capital L. 18,000,000).

I.N.A. - Industria Nazionale Alluminio - Bolzano.

S.A.V.A.- Societa Alluminio Veneto Anonima - Porto Marghera (Venezia) (Capital L. 40,000,000).

b) Societa Metallurgica Italiana - Milano (Capital L. 60,000,000).

Aluminum and Copper Bare Wires and Stranded Conductors of all types.

c) Ansaldo S.A. Stabilimento Delta - Genova Cornigliano. (See Class 2/b).

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Aluminum Steel-core and special alloys conductors. Side activity, of the Ansaldo Co. It was formerly connected to the Aluminum Co. of America for the manufacture in Italy of Aluminum steel-core

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This firm was mainly a manufacturer of optical and precision instruments and was manufacturing electrical instruments and measuring apparatus as a side activity.

It was financially connected with the S.A.D.E. Group of Utilities - Societa Adriatica di Elettricita - Venice.

i) S.I.P.I.E. - Pozzi & Trovero - Milano.

Electrical Instruments only.

NOTE - The same considerations as to excessive number of manufacturers and lack of standardisation apply to this class as outlined for Class 3.

Class 7. ELECTRICAL CONDUCTORS and CABLES.

a) Montecatini S.A. Milano - (Capital L. 800,000,000).

This concern is the most important producer of alumium for the manufacture of bare conductors. These are drawn both as pure aluminium and aluminium alloys (Aldrey) by some of its subsidiary or connected companies, such as:

L.L.L. - Lavorazione Leghe Leggere - Porto Marghera (Venezia) (Capital L. 18,000,000).

I.N.A. - Industria Nazionale Alluminio - Bolzano.

S.A.V.A.- Societa Alluminio Veneto Anonoma - Porto Marghera (Venezia) (Capital L. 40,000,000).

b) Societa Metallurgica Italiana - Milano (Capital L. 60,000,000).

Aluminum and Copper Bare Wires and Stranded Conductors of all types.

c) Ansaldo S.A. Stabilimento Delta - Genova Cornigliano. (See Class 2/b).

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Aluminum Steel-core and special alloys conductors. Side activity, of the Ansaldo Co. It was formerly connected to the Aluminum Co. of America for the manufacture in Italy of Aluminum steel-core conductors.

d) Societa Metallurgica G. Corradini - Napoli. (Capital Lire 10,000,000).

Copper and bronze bare conductors.

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e) Societa Italiana Pirelli - Milano (Capital L. 200,000,000).

Most important manufacturer of insulated wires, conductors, and high voltage cables and their accessories up to the maximum voltages (up to 220,000 volts - Oil insulated, Pirelli Patent).

This company had considerable international activity and it owns several manufacturing and industrial plants abroad).

f) I.N.C.E.T. Industria Nazionale Cavi Elettrici. Torrino. Capital L. 40,000,000.

Low voltage, telephone and high voltage cables and accessories. Commercially connected with Pirelli Co.

g) S.I.C.E. Societa Italiana Conduttori Elettrici. Livorno. Capital L. 8,000,000.

h) E. Castiglioni S.A. Milano. (Capital L. 2,400,000).

i) S.A. Adolfo Pasta, Milano. (Capital L. 1,500,000).

Insulated conductors only.

l) S.A.F.I. Societa an Fili Isolati, Milano.

Was working on Swiss patents.

m) F.I.C.E. Napoli (Capital L. 7,500,000).

Insulated conductors and cables only.
Subsidiary of the Pirelli Co.

CLASS 8. LINE MATERIALS (CLAMPS, JOINTS, CONNECTORS - BRACKETS and POLES).

a) E. Volpato, Milano.

Mainly clamps and joints.
It was working on American patents.

b) I.F.I. Impresa Forniture Industriali, Milano.

Specialsied in jointing sleeves for aluminium conductors and bi-metal connectors.

c) Elettrocenduttore S.A. Milano.

Mainly clamps and joints.
It was working in connection with the German firm Hoffman.

d) Metallurgica Ossolana S.A. Villa d'Ossola (Novara) (Capital L. 30,000,000).

Mainly mechanicalworkshop with a specialised branch of production of steel details and hardware for overhead line construction.

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g) S.I.C.E. Società Italiana Conduttori Elettrici. Milano. Capital L. 8,000,000.

h) E. Castiglioni S.A. Milano. (Capital L. 2,400,000).

i) S.A. Adolfo Pasta, Milano. (Capital L. 1,500,000).

Insulated conductors only.

l) S.A.F.I. Societa an Fili Isolati, Milano.

Was working on Swiss patents.

m) F.I.C.M. Napoli (Capital L. 7,500,000).

Insulated conductors and cables only.
Subsidiary of the Pirelli Co.

CLASS 8. LINE MATERIALS (CLAMPS, JOINTS, CONNECTORS - BRACKETS and POLES).

a) E. Volpato, Milano.

Mainly clamps and joints.
It was working on American patents.

b) I.F.I. Impresa Forniture Industriali, Milano.

Specialsied in jointing sleeves for aluminium conductors and bi-metal connectors.

c) Elettrocostruttore S.A. Milano.

Mainly clamps and joints.
It was working in connection with the German firm Hoffman.

d) Metallurgica Ossolana S.A. Villa d'Ossola (Novara) (Capital L. 30,000,000).

Mainly mechanicalworkshop with a specialized branch of production of steel details and hardware for overhead line construction.

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e) Prisma Alessandro, Milano.

Mainly clamps and joints.

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f) Cariboni Cavallo - Lecco (Como).

Mainly Clamps and joints.

g) S. Industria Elettrotecnica, Rebesie, Bregi & C, Milano.

Clamps and joints in general.
Specialised in rail connectors for electrified railroads.

h) Dalmine S.A. Dalmine (Bergamo) Capital L. 90,000,000).

Specialised in drums steel poles (not welded Mannesman Patent) and steel towers.

i) S.C.A.C. Societa Cementi Armati Conirifugati, Trento (Capital L.).

Specialised in concrete steel poles of the spun type (Scac Patents) for all types of line supports up to 220 KV transmission voltage).

l) Rossi Tranquillo S.A. Milano.

Specialised in creosoted pine poles.

m) Fratelli Chiabai, Codroipo (Udine).

Creosoted pine poles).

CLASS 9 - LIGHTING APPLIANCES (including LAMPS).

a) O S R A M - Societa Riunite Osram, Edison Clerici , Milano.

All types of lamps and lighting accessories.

b) PHILIPS S.A. Milano.

All types of lamps and lighting accessories.

c) Nitens S.A. Novi Ligure (Alessandria).

Only lamps.

d) Tungsram Elettrica Italiana S.A. Milano.

Only lamps.

e) Fabbrica Lampade Elettriche "Fulgens" - Novi Ligure (Alessandria).

Only lamps.

f) Mater S.A. Roma

Luminous Tube Signs only.

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i) S.C.A.C. Societa Cementi Armati Centrifugati, Trento (Capital L.).

Specialised in concrete steel poles of the spun type (Scac Patents) for all types of line supports up to 220 KV transmission voltage).

l) Rossi Tranquillo S.A. Milano.

Specialised in creosoted pine poles.

m) Fratelli Chiabai, Codroipe (Udine).

Creosoted pine poles).

CLASS 9 - LIGHTING APPLIANCES (including LAMPS).

a) O S R A M - Societa Riunite Osram, Edison Clerici , Milano.

All types of lamps and lighting accessories.

b) PHILIPS S.A. Milano.

All types of lamps and lighting accessories.

c) Mitena S.A. Novi Ligure (Alessandria).

Only lamps.

d) Tungsram Elettrica Italiana S.A. Milano.

Only lamps.

e) Fabbrica Lampade Elettriche "Fulgens" - Novi Ligure (Alessandria).

Only lamps.

f) Mater S.A. Roma

Luminous Tube Signs only.

g) S.A. Fabbriche Riunite "Neon" - Milano.

Specialised in luminous tubes.

h) S.C.A.L.E. - Trieste.

Luminous tube (low voltage).

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i) Elophano - Milano.

Specialised in Diffusing Equipment.

l) Ing. Gaetano Bonfiglio - Milano.

Specialised in Street Lighting Equipment.

m) Officine Galilee S.A. - Firenze - Reflectors.

n) La Filotecnica - A. Salmoiraghi S.A. Milano - Reflectors.

NOTE In the lighting accessories line, it was much felt in the country the competition of German firms such as Siemens etc.

CLASS 10 - HEATING and REFRIGERATING - INDUSTRIAL and DOMESTIC APPLIANCES.

a) Tecnomasio Italiano Brown Boveri - Milano (see 3/a).

Induction, Arc and Resistance Furnaces.
Electric-arc steam boilers.
Heating Domestic Appliances. Bread Ovens.

b) Compagnia Generale di Elettricita, Milano. (see 3/b).

Industrial and domestic heating appliances.

c) Ercole Marelli & Co. S.A. Seste S. Giovanni (Milano) (see 3/c).

Fans and ventilation equipments.
Small meters for all kind of domestic appliances.

d) Ing. P. Ferre & C. S.A. Milano.

Industrial resistance furnaces only.
Technical agreement with Swedish firms.

e) Ing. L. Tagliaferri & C. S.A. Milano.

Arc furnaces for steel mills only.

f) S.P.E.A.T. - Novate Milanese, Milano.

Resistance furnaces only.

g) E.P. Humbert - Torino.

Technical agreement with Westinghouse Electric & Mfg. Co. East Pittsburgh, Pa. U.S.A.

h) Fenwick S.A. - Milano.

Connected with English firms.

i) [illegible]

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the competition of German firms such as Siemens etc.

CLASS 10 - HEATING and REFRIGERATING - INDUSTRIAL and DOMESTIC APPLIANCES.

a) Tecnomasio Italiano Brown Boveri - Milano (see 3/a).

Induction, Arc and Resistance Furnaces.
Electric-arc steam boilers.
Heating Domestic Appliances. Bread Ovens.

b) Compagnie Generale di Elettricita, Milano. (see 3/b).

Industrial and domestic heating appliances.

c) Ercole Marelli & Co. S.A. Sesto S. Giovanni (Milano) (see 3/c).

Fans and ventilation equipments.
Small motors for all kind of domestic appliances.

d) Ing. F. Ferre & C. S.A. Milano.

Industrial resistance furnaces only.
Technical agreement with Swedish firms.

e) Ing. L. Tagliaferri & C. S.A. Milano.

Arc furnaces for steel mills only.

f) S.F.E.A.T. - Novate Milanese, Milano.

Resistance furnaces only.

g) E.P. Humbert - Torino.

Technical agreement with Westinghouse Electric & Mfg. Co.
East Pittsburgh, Pa. U.S.A.

h) Fenwick S.A. - Milano.

Connected with English Firms.

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i) S.O.M.I. - Novara.

Connected with English Firm.

l) Ing. Gaetano Malaguti - Milano.

Electric furnaces up to 3000° C.

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m) S.A. Antonelle & Orlandi, Verona.

Bread ovens only.

n) Ing. C. Mascarini, Milano.

Electric arc steam boilers.

o) Fabbriche Elettrotecniche Riunite, Milano.

Miscellaneous domestic appliances.

p) F.I.A.T. Torino (see 2/d).

Main manufacturer of domestic refrigerators with technical agreement for using patents of the Westinghouse Electric & Mfg Co, East Pittsburgh, Pa., U.S.A.

q) Ing. C. Dell'Orto, Milano.

Industrial and domestic refrigerating appliances.

r) R. Radaelli, Milano.

Refrigerators.

NOTE 1 As to electric furnaces of the resistance type, the considerable development of industrial appliances caused the activity of quite a number of manufacturers and in this case also greater than what the local market had required.

Several of the manufacturers, at the exception of a,b,g were buying the electrical parts of the equipment from other manufacturers, in order to sell a complete installation.

NOTE 2 As to the domestic appliances the sale of electric ranges and water heaters had been considerable increasing furing the last ten years. Due to the interest of the main distributing companies and the cooperation of the main manufacturers, the quality of these products was kept to a fairly good level although the prices were considerably low. The firms a, b, and c were leading producers although other minor firms and German importers (Siemens) were taking their share.

The expansion of domestic refrigerators and other refrigerating appliances of had been very scarce.

Only recently the Fiat Co. (Westinghouse refrigerator), and the firms q and r developed more activity in this line.

As to washing machines and other appliances, although the Marelli Co. could supply suitable motors, there was only selling activity of German imported products.

NOTE 3 It can be said that particularly in this branch there was a much felt lack of standardisation rules and lack of control by official boards, which fact was complainfed both by the utility companies and the manufacturers.

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p) [illegible]

Main manufacturer of domestic refrigerators with technical agreement for using patents of the Westinghouse Electric & Mfg Co, East Pittsburgh, Pa., U.S.A.

q) Ing. G. Dell'Orto, Milano.

Industrial and domestic refrigerating appliances.

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Refrigerators.

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CLASS 11 ELECTRIC TRACTION EQUIPMENT.

a) Tecnomasio Italiano Brown Boveri - Milano - (see 3/a).

Electric and Diesel-electric locomotors. Storage-battery locomotives. Self propelled cars for tramway and railway service. Trolley buses. Electric trucks.

(This company had an agreement with the Fiat Co. for the supply of Diesel-electric locomotives, and with the C.M.S. and Alfa-Romeo for the supply of complete trolley buses. Manufacturer of Brill truck on American patents).

b) Ansaldo S.A. Stabilimento Elettrotecnico, Genova. Cornigliano. (See 3/d).

Electric Locomotors and self propelled cars. Trolley-buses (with an agreement with Alfa Romeo for complete supplies).

c) Compagnia Generale di Elettricita, Milano. (see 3/b).

Electric locomotors and self propelled cars. Trolley buses. Electric trucks (storage battery).

This company had agreements with the Fiat Co. for chassis and mechanical parts.

d) Ercole Marelli & C. S.A. Seste S. Giovanni, Milano (see 3/c).

Electric locomotors and self propelled cars. Trolley buses. Connected by technical agreement with the Westinghouse Electric & Mfg Co., East Pittsburgh, Pa. U.S.A.

(This company had an agreement with the Fiat Co. for chassis and mechanical parts).

e) Officine di Savigliano N., Torrino. (see 3/g).

Electric locomotors. Storage battery locomotives. It was manufacturing locomotors mainly for the Italian State Rail Roads (FF.SS.) on the customer's design.

f) Societa Italiana Ernesto Breda, Milano. (see 3/f).

Electric locomotors and self propelled cars. It was mainly a steam locomotive manufacturers. It was manufacturing electric locomotors on Italian State R.R. designs.

g) Officine Meccaniche Italiane Reggiane S.A. - Reggio Emilia.

Electric locomotives and self propelled cars. Mechanical parts. Mainly railroad car manufacturer.

NOTE 1. The customers usually wanted to negotiate the complete supply

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b) [illegible] (See 3/d).

Electric Locomotors and self propelled cars. Trolley-buses (with an agreement with Alfa Romeo for complete supplies).

c) Compagnia Generale di Elettricita, Milano. (see 3/b).

Electric locomotors and self propelled cars. Trolley buses. Electric trucks (storage battery).

This company had agreements with the Fiat Co. for chassis and mechanical parts.

d) Ercole Marcelli & C. S.A. Seste S. Giovanni, Milano (see 3/c).

Electric locomotors and self propelled cars. Trolley buses. Connected by technical agreement with the Westinghouse Electric & Mfg Co., East Pittsburgh, Pa. U.S.A.

(This company had an agreement with the Fiat Co. for chassis and mechanical parts).

e) Officine di Savigliano N., Torrino. (see 3/g).

Electric locomotors. Storage battery locomotives. It was manufacturing locomotors mainly for the Italian State Rail Roads (FF.SS.) on the customer's design.

f) Societa Italiana Ernesto Breda, Milano. (see 3/f).

Electric locomotors and self propelled cars. It was mainly a steam locomotive manufacturers. It was manufacturing electric locomotors on Italian State R.R. designs.

g) Officine Meccaniche Italiane Reggiane S.A. - Reggio Emilia.

Electric locomotives and self propelled cars. 237
Mechanical parts. Mainly railroad car manufacturer.

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NOTE 1. The customers usually wanted to negotiate the complete supply of locomotors, self propelled cars, trolley buses etc. with the manufacturer of the electrical equipment so that the full responsibility of the operation was given to the electrical manufacturing company only.

This fact has as a consequence that a number of special agreements between electrical and mechanical manufacturers

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stipulated or, in few cases, that the electrical manufacturer had to organize specialised mechanical departments in order to be able to make complete supplies.

This was also due to the relatively scarce specialization of the Italian mechanical manufacturers in the electric railway construction when the important programs of railroad electrification were decided by the government. During the last 15 years there was considerable activity in the State R.R. net electrification as well as in the private interurban electrification and tramways renewal.

NOTE 2 Biggest sizes built.

Locomotors up to 3000 KW, 3600 Volts D-C, 80 milesper hr.
Electric Fast Trains (State R.R.) Multiple control - 6 motors - 3600 volts D-C - 4400 KW - 100 miles per hr. top speed.
Tramways, three truck, high acceleration, multiple control, automatic starting.
Three axle trolley bus, 200 passenger, automatic starting.

CLASS 12 MARINE EQUIPMENTS.

a) Ercole Marelli & C. S.A. Seste S. Giovanni (Milano) (see 3/c).

Electric propulsion equipments for ships and submarines.
This company was not manufacturing the switchgear and special switchboards for this application, and was buying these mainly from the Magrini Co.

b) Magrini S.A. Bergamo (see 3/a).

Special switchboard and switchgear devices for marine application.

c) Compagnia Generale di Elettricita, Milano. (see 3/b).

Electric propulsion equipments for ships and submarines, complete with switchgear.

d) Tecnomasio Italiano Brown Boveri, Milano. (See 3/a).

Complete electric propulsion equipments for ships and submarines.

e) S. Giorgio S.A.I. - Genova Sestri. (see 3/c).

Electric propulsion equipments particularly for submarines.
No. switchgear.
It was working in connection with the Odero-Terni-Orlando (O.T.O.) Shipyards.

f) Cantieri Riuniti dell'Adriatico S.A. - Trieste (see 3/c).

Electric propulsion equipments. No switchgear: It was working in connection with the C.R.A. (same concern), Shipyards.

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g) Ansaldo S.A. - Geneva Cornigliano - (see 3/d).

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automatic starting.
Three axle trolley bus, 200 passenger, automatic starting.

CLASS 12 MARINE EQUIPMENTS.

a) Ercole Marelli & C. S.A. Sesto S. Giovanni (Milano) (see 3/c).

Electric propulsion equipments for ships and submarines.
This company was not manufacturing the switchgear and special switchboards for this application, and was buying these mainly from the Magrini Co.

b) Magrini S.A. Bergamo (see 5/a).

Special switchboard and switchgear devices for marine application.

c) Compagnia Generale di Elettricita, Milano. (see 3/b).

Electric propulsion equipments for ships and submarines, complete with switchgear.

d) Tecnomasio Italiano Brown Boveri, Milano. (See 3/a).

Complete electric propulsion equipments for ships and submarines.

e) S. Giorgio S.A.I. - Genova Sestri. (see 3/c).

Electric propulsion equipments particularly for submarines.
No. switchgear.
It was working in connection with the Odero-Terni-Orlando (O.T.O.) Shipyards.

f) Cantieri Riuniti dell'Adriatico S.A. - Trieste (see 3/c).

Electric propulsion equipments. No switchgear. It was working in connection with the C.R.A. (same concern), Shipyards.

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g) Ansaldo S.A. - Geneva Cornigliano - (see 3/d).

Electric propulsion equipments. No switchgear.
It was working in connection with the Ansaldo Shipyards.

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CLASS 13. STORAGE - BATTERIES.

a) Societa Generale Italiana Accumulateri Elettrici - Melzo (Milano). Capital L. 24,000,000.

"TUDOR" Trade mark accumulator and dry batteries for all applications.

b) Fabbrica Accumulatori Hensemberger S.A. - Monza (Milano).

"Hensemberger" Trade mark batteries.
It was controlling one subsidiary company near Naples, i.e. the "Partenope" Co. (Casalnuovo di Napoli) specialized in the manufacture of batteries for marine application.

c) Fabbrica Italiana Magneti Marelli - Sesto S. Giovanni (Milano).

d) Accumulateri Dott. Somini S.A. Milano (Capital L. 7,000,000).

e) Elettromeccanica Fratelli Redaelli - Meana (Milano).

Nickel-iron-alkaline batteries only.

NOTE - Firm (a) was one of the main battery manufacturers and was actively cooperating with other important firms for the development of storage battery electric trucks and vehicles.

CLASS 14. WIRE TELEPHONY and TELEGRAPHY APPARATUS.

a) F.A.T.M.E. - Brevetti Ericson - Roma (Capital L. 6,000,000).

This factory was owned and controlled by S.I.E.L.T.E. Co. Roma. - Capital L. 7,0 0,000.- which is a contracting company doing erection, installation and maintenance work every where in the country.

b) C.L.A.P. Milano.

This company was controlled and connected by agreements with the Siemens & Halske Co. (Germany).

c) S.A. Brevetti Arture Perege, Milano.

All kind of telephone apparatus and connected equipments. Automatic stations - Relays - Special insulated telephone equipment for high-voltage transmission line application. Carrier current telephony.

d) F.A.C.E. Milano.

Telephone and telegraph apparatus and devices. Relays 236

e) Allocchio Bacchini & C. Milano. (see also 6/g).

Carrier and high frequency telephone and telegraph equipments.

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e) Elettromeccanica Fratelli Redaelli - Mouna (Milano).

Nickel-iron-alkaline batteries only.

NOTE - Firm (a) was one of the main battery manufacturers and was actively cooperating with other important firms for the development of storage battery electric trucks and vehicles.

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a) F.A.T.M.E. - Brevetti Ericson - Roma (Capital L. 6,000,000).

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c) S.A. Brevetti Arture Perege, Milano.

All kind of telephone apparatus and connected equipments. Automatic stations - Relays - Special insulated telephone equipment for high-voltage transmission line application. Carrier current telephony.

d) F.A.C.E. Milano.

Telephone and telegraph apparatus and devices. Relay 236

e) Allocchio Bacchini & C. Milano. (see also 6/g).

Carrier and high frequency telephone and telegraph equipments.

f) S.A.F.A.R. Milano. (see 15/a).

Special telephone and telegraph devices.

NOTE - The telephone service in the towns and their districts was run by private companies while the national telephone grid is a State property.

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The private companies in Italy have each a certain area of operation and they usually own or control repair, maintenance or also manufacturing workshops, so that they were taking care of the expansion and maintenance of their installations.

CLASS 15 RADIO COMMUNICATION APPARATUS (including TUBES).

a) S.A.F.A.R. Milano.

Radio Transmitter and receiver sets - Television - Not manufacturer of tubes.

b) Allocchio Bacchini & C. Milano. (see also 14/c and 6/g)

Radio Transmitter and receiver sets. Television. Not manufacturers of tubes.

c) Ufficio Marconi - Roma - Genova.

Radio Transmitter and receiver sets. Television. Manufacturer of tubes.

d) F.A.C.E. - Milano (see also 14/d).

Radio transmitter and receiver sets. No tubes.

e) Fabbrica Italiana Magneti Marelli. Sesto S. Giovanni (Milano).

Mainly radio receiver sets.
It was using tubes manufactured by its subsidiary company F.I.V.R.E. (see 15/f).

f) Fabbrica Italiana Valvole Radioelettriche - F.I.V.R.E. - Milano.

Vacuum tubes only. Only important manufacturer in the country.

g) Compagnia Generale di Elettricita - Milano. (see 3/b).

Radio receiver sets only. No tubes.

h) F.I.M.I. - S.A. Milano - Saronno.

Radio receiver sets only. No tubes.

i) Ducati - Societa Scientifica Radio Brevetti Ducati - Bologna (Capital L. 12,000,000) (see also 17/D/c).

Specialized in the manufacture of radio condensers.

NOTE. Several minor companies were specialised in the manufacture and assembling of radio set parts and renewal parts, with their own sales organisation and frequently using foreign patents.

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manufacturer of tubes.

b) Allocchio Bacchini & C. Milano. (see also 14/c and 6/g)

Radio Transmitter and receiver sets. Television. Not manufacturers of tubes.

c) Ufficio Marconi - Roma - Genova.

Radio Transmitter and receiver sets. Television. Manufacturer of tubes.

d) F.A.C.E. - Milano (see also 14/d).

Radio transmitter and receiver sets. No tubes.

e) Fabbrica Italiana Magneti Marelli. Sesto S. Giovanni (Milano).

Mainly radio receiver sets.
It was using tubes manufactured by its subsidiary company F.I.V.R.E. (see 15/f).

f) Fabbrica Italiana Valvole Radioelettriche - F.I.V.R.E. - Milano.

Vacuum tubes only. Only important manufacturer in the country.

g) Compagnia Generale di Elettricita - Milano. (see 5/b).

Radio receiver sets only. No tubes.

h) F.I.M.I. - S.A. Milano - Saronno.

Radio receiver sets only. No tubes.

i) Ducati - Societa Scientifica Radio Brevetti Ducati - Bologna (Capital L. 12,000,000) (see also 17/D/c).

Specialised in the manufacture of radio condensers.

NOTE. Several minor companies were specialised in the assembling of radio set parts and renewal parts, with their own sales organisation and frequently using foreign patents.

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CLASS 16 INSULATING MATERIALS.

A) ASBESTOS and ASBESTOS PRODUCTS.

a) Societa Italo - Russa per l'Amianto - Torino.

b) Societa Mineraria Valtellinese - Sondrio.

c) Societa Ital. "Eternit" - Genova.

B) INSULATING PAPER (PLAIN)

d) Soc. Anon. Cartiere Burgo - Verzuolo - (Cuneo).

e) Cartonificio Barzano - S.A. - Cone - (Bergamo).

C) COTTON TAPE (INSULATING, PLAIN).

f) Muller Vittorio - Genova.

g) Mastrificie e Tessitura Emilio Ponti - Cuggiono - (Milano).

D) SYNTHETIC RESINS.

h) Societa Italiana Rosine - Milano.

Licensee of the Bakelite Corp. of U.S.A.

E) VARNISHES, COMPOUNDS - TREATED PAPER and FABRICS - MICARTA PRODUCTS and MOLDED MATERIALS.

i) Giorgio Negri & C. - Milano.

Insulating varnishes - Micanite and bakelite products.

l) Magrini S.A. - Bergamo - (see 5/a).

Treated paper and fabric. Micarta products manufactured on Westinghouse Electric & Mfg. Co. patents and processes. Micanite products. Micarta gears. Special micarta plates. Molded materials.

m)
Moorti & Martini S.A. - Milano.

Synthetic resins. Bakelite products. Insulating varnishes. Molded materials. Mica and micanite products. For this manufacture see Note.

n) Isola S.A. Fabbricazione Isolanti Elettrici. Milano.

Treated paper (shellacked). Cylinders. Plates.

o) Fabbrica Isolanti Bakelite Ing. Cresti. Milano.

p) Societa Industria Mica Italiana. Sondrio.

F)

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e) Cartenificio Barsano - S.A. - Cone - (Bergamo).

C) COTTON TAPE (INSULATING, PLAIN).

f) Muller Vittorio - Genova.

g) Nastrificio e Tessitura Emilio Ponti - Cuggiono - (Milano).

D) SYNTHETIC RESINS.

h) Societa Italiana Resine - Milano.

Licensee of the Bakelite Corp. of U.S.A.

E) VARNISHES, COMPOUNDS - TREATED PAPER and FABRICS - MICARTA PRODUCTS and MOLDED MATERIALS.

i) Giorgio Negri & C. - Milano.

Insulating varnishes - Micanite and bakelite products.

l) Magrini S.A. - Bergamo - (see 5/a).

Treated paper and fabric. Micarta products manufactured on Westinghouse Electric & Mfg. Co. patents and processes. Micanite products. Micarta gears. Special micarta plates. Molded materials.

m)
Menti & Martini S.A. - Milano.

Synthetic resins. Bakelite products. Insulating varnishes. Molded materials. Mica and micanite products.
For this manufacture see Note.

n) Isola S.A. Fabbricazione Isolanti Elettrici. Milano.

Treated paper (shellacked). Cylinders. Plates.

o) Fabbrica Isolanti Bakelite Ing. Cresti. Milano.

p) Societa Industria Mica Italiana. Sondrio.

F) VULCANIZED FIBER MATERIALS.

q) S.A. Fibra Vulcanizzata. Milano.

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G) RUBBER PRODUCTS and THEIR SUBSTITUTES.

r) Societa It. Ebanite Sostituti. Monza. (S. Damiano) Milano.

Molded materials and special resins.

s) Societa Italiana Pirelli. Milano. (see also 7/c).

H) INSULATING OILS.

t) S.A. Lubrificanti E. Feltzer, Geneva.

u) Vacuum S.A. Predetti Petroliferi, Geneva.

I) GLASS and PORCELAIN.

v) Fidenza S.A. Vetraria. Milano. (Capital L. 5,400,000).

Glass insulators. Miscellaneous glass products.

w) Manifattura Isolateri Vetro Acqui - M.I.V.A. - Milano - Acqui.

Glass and Pyrex insulators. Miscellaneous glass products.

x) C.I.V.I. Consorzio Italiano Vendite Isolateri. Milano.

This concern was a selling trust among the most important electrical porcelain manufacturers in Italy such as:-

Ginori	-	Florence.
Ceramica	-	Ligure.
Ceramica	-	Trentina.
F.I.L.	-	Livorno.

All porcelain insulators therefore were ordered through this selling trust, without possibility for the customer to select any particular manufacturer belonging to the trust.

Aims were made by this trust to standardize the most important lines of porcelain insulators for the usual applications.

y) S. Italiana del Gres - Ing. Sala - Bergame.

Gres insulators and gres products.

NOTE - The firm Monti & Martini (16/m) has been trying to take over all the production and sale of insulating materials of all kinds, except porcelain, in the Italian market.

It was working in other words towards the formation of a monopoly; various competitive firms were bought or controlled by the Monti & Martini, such as the Pasaoni & Villa Co. (see 203 b) and Isola S.A. (see 16/n) with which latter it had commercial agreements, the Magrini Co. (see 16/1), the S.A. Industrie Elettriche di Legnano (see 3/n) and other minor firms.-

As to the Magrini Co. (see also 5/a) which is the property of

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v) Fidanza S.A. Vetreria. Milano. (Capital L. 5,400,000).

Glass insulators. Miscellaneous glass products.

w) Manifattura Isolatori Vetro Acqui - M.I.V.A. - Milano - Acqui.

Glass and Pyrex insulators. Miscellaneous glass products.

x) C.I.V.I. Consorzio Italiano Vendite Isolatori. Milano.

This concern was a selling trust among the most important electrical porcelain manufacturers in Italy such as:-

Cineri	-	Florence.
Ceramica	-	Ligure.
Ceramica	-	Trentina.
F.I.L.	-	Livorno.

All porcelain insulators therefore were ordered through this selling trust, without possibility for the customer to select any particular manufacturer belonging to the trust.

Aims were made by this trust to standardize the most important lines of porcelain insulators for the usual applications.

y) S. Italiana del Gres - Ing. Sala - Bergame.

Gres insulators and gres products.

NOTE - The firm Monti & Martini (16/a) has been trying to take over all the production and sale of insulating materials of all kinds, except porcelain, in the Italian market.

It was working in other words towards the formation of a monopoly; various competitive firms were bought or controlled by the Monti & Martini, such as the Passoni & Villa Co. (see 203 b) and Isola S.A. (see 16/n) with which latter it had commercial agreements, the Magrini Co. (see 16/1), the S.A. Industrie Elettriche di Legnano (see 3/n) and other minor firms.-

As to the Magrini Co. (see also 5/a) which is the property of the Westinghouse Electric International Co. of New York, the Monti & Martini was looking at this manufacturer as one of its strongest competitors especially because of the far better quality of production of the Magrini Co. This to such an extent that late in 1940, after the war broke, the Monti & Martini managed in Rome, with the support of the fascist government, to take the control of the Magrini Company by buying only a very small percentage (4%) of the competitive company shares.

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Also the Menti & Martini came to some agreement with the fascist supported firm Tardini V. (Via Settembrini, 91 - Milano) which was trading mica and miscellaneous insulating materials.

As the quality of the production of the Menti & Martini had always been rather poor, the trust headed by this manufacturing was controlling through the fascist government in Rome practicallyall importation permits from abroad, and licenses which could have been released to other firms for the manufacture of insulated materials.

CLASS 17 - MISCELLANEOUS ELECTRICAL PRODUCTS.

A) CRANES and HOISTS

a) Coretti & Tanfani. Milano, Bovisa.

b) Ansaldo S.A. Geneva.

c) S A B I E M. Bologna. S. Viola.

d) S.A. C. Redaelli & F. Milano.

e) Officine di Savigliano S.A. Torino.

f) Officine Elettroferroviarie Tallero. Milano.

g) "Reggiane" Officine Meccaniche Ital. S.A. Reggio Emilia.

B) ELEVATORS and ESCALATORS.

a) Officine Meccaniche Stigler S.A. Milano.

b) "O T I S" Naples.

This firm was connected with American firm.

c) S A B I E M Bologna S. Viola.

This company was connected by technical agreement with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., U.S.A.

C) ARC-WELDING EQUIPMENTS.

a) Tecnomasio Italiano Brown Boveri - Milano.

b) Compagnia Generale di Elettricita - Milano.

c) Ercole Marelli & C. S.A. Sesto S. Giovanni - Milano.

d) Ing. Gaetano Malaguti - Milano. 232

e) Officine Elettroferroviarie Tallere - Milano.

f) I P S E A - S. Aco. Milano - Precotto.

g) A. Nebili & C. Torino.

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d) S.A. C. Rodnelli & F. Milano.

e) Officine di Savigliano S.P. Torino.

f) Officine Elettroferroviarie Tallare. Milano.

g) "Reggiane" Officine Meccaniche Ital. S.A. Reggio Emilia.

B) ELEVATORS and ESCALATORS.

a) Officine Meccaniche Stigler S.A. Milano.

b) "O T I S" Naples.

This firm was connected with American firm.

c) S A B I E M Bologna S. Viola.

This company was connected by technical agreement with the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., U.S.A.

C) ARC-WELDING EQUIPMENTS.

a) Tecnomasio Italiano Brown Boveri - Milano.

b) Compagnia Generale di Elettricita - Milano.

c) Ercole Marelli & C. S.A. Sesto S. Giovanni - Milano.

d) Ing. Gaetano Malaguti - Milano.

e) Officine Elettroferroviarie Tallere - Milano.

f) I P S E A - S. Acc. Milano - Precotto.

g) A. Nebili & C. Torino.

h) Scotti Brisschi & C. S.A. - Novara (see 3/c).

i) C I M E - C. Ital Materiali Elettrici.

D) STATIC CONDENSERS.

a) Tecnomasio Italiano B.B. Milano - (see 3/a).

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b) S.A. Passoni & Villa - Milano (see 6/E/m).

It was manufacturing also condenser bushings.

c) Ducati - See Scient Radio Brevitti - Bologna.

d) A. Pelliccari & Figli - Arzignano (Vicenza) (see 3/i)

e) Magrini S.A. - Bergamo - (See 5/a).

f) "Microfarad" - Fabbrica Ital. Condensateri - Milano.

E) LIGHTING ARRESTERS.

a) Magrini S.A. - Bergamo (see 5/a).

b) Compagnia Generale di Elettricita - Milano (see 3/b).

Parts of the arresters were imported.

c) Tecnomasio Italiano BB - Milano (see 3/a).

Parts of the arresters were imported.

d) Ing. J. Bader - Milano.

Parts of the arresters were imported. Connected with German firm.

F) ELECTRIC RESISTORS.

a) Ing. S. Beletti & C S.A. Milano.

b) Laboratorio Chmico Vertua - Milano.

c) S I C I - Milano.

d) S.A. Ital Driver - Harris - Milano.

G) CARBON BRUSHES and ELECTRODES.

a) See Ital Forni Elettrici & Elettrecarbonium. Ascoli? Connected with Lumarzo

b) Officine Micro-Elettromeccaniche S.A. - Milano.

c) Monti & Martini - S.A. Milano (see 16/E/m).

d) Ing. S. Beletti & C. S.A. Milano.

e) S.A. Elettrografite di Forno Allione, Milano.

Arc-furnace electrodes and electrodes for electro 231 cells.

f) Societa "Il Carbonio" Milano (Capital L., 1,500,000).

H) ELECTROLYTIC BATH EQUIPMENTS.

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b) Compagnia Generale di Elettricita - Milano (see 3/b).

Parts of the arresters were imported.

c) Meccanasie Italiane RB - Milano (see 3/a).

Parts of the arresters were imported.

d) Ing. J. Bader - Milano.

Parts of the arresters were imported. Connected with German firm.

F) ELECTRIC RESISTORS.

a) Ing. S. Beletti & C S.A. Milano.

b) Laboraterie Chmice Vertua - Milano.

c) S E C I - Milano.

d) S.A. Ital Driver - Harris - Milano.

G) CARBON BRUSHES and ELECTRODES.

a) Soc Ital Forni Elettrici & Elettrocarbonium. Acesk P connected with Lonza

b) Officine Micro-Elettromeccaniche S.A. - Milano.

c) Monti & Martini - S.A. Milano (see 16/E/m).

d) Ing. S. Beletti & C. S.A. Milano.

e) S.A. Elettrografite di Forno Allione, Milano.

Arc-furnace electrodes and electrodes for electro 231 cells.

f) Societa "Il Carbonio" Milano (Capital L., 1,500,000).

H) ELECTROLYTIC BATH EQUIPMENTS.

a) Barattini Waldberg & C. S.A. Milano.

b) Elpews - S.A. Langbeinpfanhauser - Milano.

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e) Rancati S.A. - Milano.

d) S.A. S.C.A.E. - Ing. A. Garuti - Sesto S. Giovanni - Milano.

I) PERMANENT MAGNETS

a) Fabbrica Italiana Magneti Marelli - Sesto S. Giovanni - Milano.

b) S.A.M.P.A.S. - Milano.

L) STEEL, IRON and CAST IRON for ELECTRICAL APPLICATIONS.

a) Terni S.A. Terni (Rome).

Magnetic steel laminations.

b) Fonderia Milanese di Acciaie Vanzetti - Milano.

Special steel and cast iron alleys.

M) WIRING MATERIAL.

a) Ing. Francioni & C. Milano.

b) Crecci A & Farinelli - Milano.

c) O.E.C.- Officina Elettrotecnica Comense - Como.

d) Fabbrica Palazzoli & C. - Brescia.

e) Officine Elettromeccaniche Rapidzi - Parabiago - Milano.

f) ALO' - Costruzioni elettromeccaniche - Milano.

g) Elettromeccanica Mababelli & Veresi - Milano.

h) Fabbrica Ital. Apparecci Elettrici - Milano.

i) Offic. Elettromeccanica G. Colombo - Busto Arsizio.

l) Offic. Elettrotecnica A. Balducci - Milano Precette.

m) Giovanni Romano - Offic. Elettromecc. Torino.

n) Ing. Paolo Aita. Torino.

o) F. Boili & C. Sesto Calende. Varese.

p) Siciliani E & C. Milano.

q) "Zeis" - Elettroimpianti originali - Roma.

r) S A S I B - S.A. G. Innocenti - Bologna.

s) S I E L - S. Ind. Elettromeccanica Lombarda - Milano Brescia.

t) " A.V.E.

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b) Fonderia Milanese di Acciaio Vanzetti - Milano.

Special steel and cast iron alloys.

M) WIRING MATERIAL.

a) Ing. Francioni & C. Milano.

b) Creci A & Farinelli - Milano.

c) O.E.C.- Officina Elettrotecnica Comense - Como.

d) Federico Palazzoli & C. - Brescia.

e) Officine Elettromeccaniche Rapidzi - Parabiago - Milano.

f) ALO' - Costruzioni elettromeccaniche - Milano.

g) Elettromeccanica Marabelli & Vercesi - Milano.

h) Fabbrica Ital. Apparecci Elettrici - Milano.

i) Offic. Elettromeccanica G. Colombo - Busto Arsizio.

l) Offic. Elettrotecnica A. Balducci - Milano Procette.

m) Giovanni Romano - Offic. Elettromecc. Torino.

n) Ing. Paolo Alta. Torino.

o) F. Boili & C. Sesto Calende. Varese.

p) Siciliani E & C. Milano.

q) "Zeis" - Elettroimpianti originali - Roma.

r) S A S I B - S.A. S. Innocenti - Bologna.

s) S I E L - S. Ind. Elettromeccanica Lombarda- Milano Brescia.

t) " A V E " - Vestone (Brescia).

u) U I T I - Unione Italiana Tubi Isolanti - Milano.

Protective pipes of the Bergmann type only.

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v) S.A. G. Redaelli & F. Milano.

Only protective pipes.

w) S.A. Comp. I. Tubi Metallici Flessibili, Terrine.

Flexible metal protective pipes only.

NOTE- Particularly in this branch of manufacturing industry there was an excessive number of manufacturers, the above listed ones being only the more important. No standardization rules were effectively issued about the wiring material which in this country was not undergoing any approval by central boards or central laboratories.

CLASS 18. IMPORTANT CONTRACTORS.

a) Impresa Umberto Girola - Milano - Roma.

Most important contractor for hydro-electric plant constructionwork. Dams and artificial lakes.

b) Terne Guiseppe & C. S.A. - Milano.

c) S.A.E. - Societa An. Elettrificazione - Milano.

Specialised in railroad electrification work.

d) S.C.A.G. - Trento.

Specialised in the erection of high voltage transmission lines, especially with steel concrete spun poles.

e) Vitaliane Scotti - Milano - Roma - Napoli.

Electric transmission and telephone lines and installations.

f) S I E L T E - Milano and all important towns.

Specialized in the erection of telephone lines.

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REMARKS.

1. The above classified list of manufacturers includes only the main Italian or foreign manufacturers having their plants and workshops in Italy.

Several minor firms were not mentioned which cannot be considered as important because they were mostly assemblers of materials bought from other manufacturers and sometimes imported from abroad. There were of course sales organisations of foreign companies such as Siemens Shuckert (Berlin), A E G A (Sweden), Oerlikon (Switzerland) and others, which were occasionally supplying electrical materials and apparatus of special characteristics.

Other informations on manufacturers and sellers in the Italian market can be obtained from the "Repertorio Elettrotecnico Italiano published in 1941 by the Associazione Elettrotecnica Italiana (A.E.I.) - Milano (Via S. Paolo 10) 8th Edition.

It is to be noted however that the information as given by this publication on the actual production and engineering standing of the listed manufacturers were not checked by the publishers.

2. The Italian C.E.I. (Comitato Elettrotecnico Italiano) had been issuing in recent years a complete set of Standard Rules for the Specification of characteristics and tests of electrical apparatus and materials in general.

These standards were supposed to be a basis for the ordering specifications and for the witnessed tests of such apparatus and materials. These rules however, while being always accepted by the manufacturers were very frequently disregarded by the Italian customers who had always been asking the manufacturers for special designs and characteristics and particularly for out-of-standard apparatus, devices and materials. This fact was occurring also with very important customers and was one of the causes for the very poor level of standardisation reached in the country.

It is to be noted that the standards as issued by the Italian C.E.I. were not in every case imposing definite lines of characteristics and data to be taken as compulsory; very frequently the C.E.I. rules were simply recommending some standards. This also explains why for instance a standardization of the operating frequencies, and of the operating voltages (both low-voltage and high voltages) was never reached.

Also no standardised line of horse power ratings for industrial motors nor for distribution transformers was ever adopted and the same situation existed even for house meters, lamps, domestic appliances etc. etc.

As to operating frequencies it can be said that roughly the country is split into three parts; 45 cycles in Southern and a portion of Central Italy (with exception of Sicily); 50 cycles in part of Central Italy and in North-western Italy; 42 cycles in Milano district and in North-eastern Italy.

As to distribution voltages it can be said that mo[illegible] Southern Ital has 150/260 volts as standard, while C[illegible]n Italy has 127/220 - Northern Italy uses both these voltages although the 127/220 is more spread.

3. As to the number of manufacturers working for the Italian market in each branch, it has been already pointed out in the [illegible] and it is that this number is by far

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Southern Italy has 150/260 volts as standard, while Central Italy has 127/220 - Northern Italy uses both these voltages although the 127/220 is more spread.

3. As to the number of manufacturers working for the Italian market in each branch, it has been already pointed out in the footnotes to Classes 3, 5, and 16, that this number was by far

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excessive for the needs of the market, which fact was causing very frequently unfair competition, too low selling prices and consequently poorer quality of production.

It can be mentioned that a large A-C generator could have been negotiated with at least five possible suppliers (see Class 3/a,b,c,d, e).

A large transformer could have been quoted by at least eight manufacturers (Class 3/a,c,b,d,e,f,m,n).

A distribution transformer could have been supplied by at least 16 manufacturers, and an industrial meter by at least 14 manufacturers.

A high voltage, high interrupting capacity automatic circuit breaker could have been built in Italy by at least 5 important manufacturers, while a low voltage automatic breaker by at least 9 manufacturers.

A large power electric locomotor could have been supplied by seven important manufacturers.

A meter could have been supplied by at least six important manufacturers.

As to the engineering equipments and testing laboritics existing with the manufacturers, it has been already mentioned that there was no high power testing laberity in the country, while there were at least five high voltage impulse testing laboritics with the manufacturers (Class 3/c,e, Class 5/a, Class 7/e, Class 17/D/b). Most of the important manufacturers were of course provided with high voltage and high current testing transformers.

Pending this situation back in 1935 the Italian fascist government had planned and was supposed since then to control through the so called Ministry of Corporations any installation of new manufacturing plants and also any extention of existing plants. Such a task resulted of course to be a rather difficult one for the fascist government and the reasons why may be easily understood.

Most of the manufacturers has some of their directors who were either members of the fascist chamber of corporations or were strictly connected with members of the fascist government so that the idea of improving through government control the industrial situation in the field of electrical constructions as well as in all other branches of manufacturing activities in the country completely failed.

Naples, May 1944.

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0 400 143

TC.48961 HEADQUARTERS RAB/ac
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

ACC/152/PWU 2 Oct. 44

Subject : Log of Major Bell

To : Lt.Col.W.M.LATIMER - Chief Elec. Div.
Headquarters Region IV (Attention Regional Engineer)
Headquarters Region VIII (Attention Regional Engineer)
F.B.S. Engineers (Attention Col. Cooley)
Headquarters 5th Army (Attention Capt. Gaither)
Provincial Commissioner - Terni (Attention Maj. Fricker)

1) - Attached is copy of the log of Maj. E.J.Bell for the period September 22nd to September 30th inclusive.

E.J.B ABRX
Major, C.E.
Acting Chief Elec. Div.

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1 enclosure

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Tel.489351 HEADQUARTERS R AB/ec
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LOG OF MAJ. R.A.BELL

September 22nd - Rome

Telephoned Capt.Geitner - He requested information as to whereabouts of water pipe. I am to investigate Terni, Aurelia Co., and Lardarello and let him know what is available.

Obtained plans for Castel Madama. I am to discuss with Terni Steel Works concerning priority etc.

September 23rd

Talked with Col. Cooley. Plan to meet in Florence Wednesday.

Journey to Terni and Rieti with Capt. Doran, to investigate possibilities of shutting down Rieti Steam Plant.

Talked to Gilbert. 1st transformer being moved to-day from Terni to Spoleto.

Talked to Capt.Boriggs (engineer for Rieti and Terni Provinces). He is in accord with plans to shut off Rieti Station. Has received instructions from Region IV to do so. 3000 KVA transformer at Orvieto is now fully loaded. Not possible to send more than 200 KW to Rieti unless load is cut down. Necessary to institute rationing program in Terni and Rieti. Made appointment with Capt. Briggs Monday in Terni.

Journey to Rieti. Conference with Manager UM ZZ - now using 225 KW max - possible with rationing to reduce this to 200 KW.

Conference with Manager Cema Vincenzo Plant - now using 26 tons of coal daily to produce approx 15,000 KWh. Told him to expect message from Capt. Briggs Monday or Tuesday to shut down. Major Gilbert (CAO Rieti) not in to-day. Journey to Rome.

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September 24 th - home

Telephone conversation Cpl. Dry. D river of heavy truc k reported to hospital. Arranged to take replacement to Terni to-morrow.

September 25 th

Conference with Maj. Renton, Lt.Wade-Brown. Lt. Wade-B rown to go to Rieti and Terni to-morrow to investigate rationing system and confer with Capt. Spriggs.

Journey to Terni. C apt. Spriggs and I in conference with Eng.Gigli. Formulated plan for putting 1 transformer Spoleto, Narni and Cotilia (1,500 KVA, 30 KV/10 KV). Terni Co. to send 700 KW to Rieti effective to-morrow if Interamna Co. holds their max to 1,000 KW.

C onference with Manager Interamn a Co. Agreed to stay within 1,000 KW max.

Capt. Rogers (N° 1 Dist. C.R.E.) in Terni to investigate service to SIRI oxygen plant. Lt. Kent and Capt.Rogers in agreement. Papigno Carbide Co. using 1,000 KW when operating. Worked out scheme (with C apt.Spriggs) whereby SIRI would operate only when Papigno not operating. They are both served from same line from Curvara.

Conference with Director De Gasperi. Priority of work in steel works revised as follows :

1) - Galleto
2) - Lardarello
3) - Castel Madama
4) - Mondole
5)- Salisano

Rations for heavy workers apparently satisfactory. CIP Terni has no instructions for delivery of POL to Società Terni. Instead they are drawing what was asked for from CIP Rome. More convenient if transferred. Lt.Wade-Brown please handle. Journey to Rome.

September 26th

Telephoned to Col.Cooley. In Rome on 28th. Investigate necessity for moving 15 ,000 KVA transformer from Lardarello to Cast elnuovo. This is necessary in order to work on two transformers at once, as there is good transformer shop at both places. Col. Cooley to furnish transport.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

September 27th

Journey to Lardarello. Conference with Manager Aurelia Co. (Civitavecchia) 200 meters 2 inch pipe in stock. Would like to keep for local line repairs. 1,000 meters of 3 inch pipe available at site, installed by Allied organization but since abandoned.

#2 1 unit at Lardarello down for repairs. 1st two rows of blades removed from rotor (badly pitted). This will decrease output approx 200 KW. Machine will run approximately six more months without new blading. Back on the line to-morrow. Load 2,500 KW at 5 P.M. Minimum for day 1,600 KW. Third transformer ready in a week per British crew. 25 tons of cement have been transported from Pelizzaio. 2 silence in 3 days.

Lardarello Co. has received 90 POL also needs diesel. Nearest DIP in Florence, Grosseto or Livorno. Maj. Lee issue letter. POL requirements for Company received by us for onward trans mission to Maj. Lee.

4,750 KVA, 38 KV/4.5 KV transformer at Massa being brought to Lardarello by their own transport for repairs. Renewed travel permit for Eng. Virgili, Ghezi, Miesrelli and Dott.Consili.

September 28th

Journey to Florence.

Capt.Gardiner not in. Left note concerning P.W. etc..

Conference with Maj.Lee. Capt.Jonson and office in Valdarno Co. Map being prepared of up to date transmission lines. Will forward copy to P.W. & D. Lines to Arezzo (two directions) being rehabilitated next. Line Livorno to Florence not as important as line Livorno, Pisa, Pistoia, Florence. Present line Pero Montoro to Florence not sufficient capacity for 7000 KW. At present taking 3000 KW. 150 K.V Lyons station at Calcello (near Grosseto) coming on next month. Not connected to grid. Will be used for Grosseto area only. Water pumps at Colle Florentina now operating, served from small control at Olanguola (30 KV). Colle d'Elsa lines north (not gridded) now under repair. Maj. Lee's Headquarters are now in Florence Municipio Building, telephone Florence 284 ext. 16. Check upon 30 KV connecting line at Lardarello. Completed and in operation, Col. Co ley furnished poles. Valdarno Co. informed.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

September 29th

Journey to Piombino & Cecina with Eng.Virgili. Inspected Ilva Steel Co. Some material there needed by Lardarello. Col. Cooley please release.

Stopped at Brick Factory in Cecina - in operation. Brick necessary for Castel nuovo repairs available. Col Colley please approve release.

Issued travel permit for 3rd Lardarello truck.

September 30th

Sheet metal roofing (800 sheets) arrived from Rome. Both units on at Lardarello. Load 3,100 KW. 3,500 KW possible.

Journey to Rome.

-.-.-

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

Adv 1

VSR/mc

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

30 Sept. 1944

Subject: Transmittal of Generating Station Maps and Data.

To : Directorate of Works, A.A.I.
Attention Lieut.Colonel W.A.R. Smith.

1. Transmitted herewith are two copies each of two maps showing the locations of hydro electric generating stations in Northern Italy. These maps are entitled:-

a) Hydro electric Generating Stations, Piemonte - Lombardia - Emilia Provinces.

b) Hydro electric Generating Stations, Veneto Provinces.

2. It is not recalled whether these maps have been previously furnished informally to your office. The data contained thereon has been obtained from the Italian Ministry of Public Works. The underlining of each station name indicates whether the plant is small, medium or large.

3. Also transmitted herewith is a copy of the book Compendio Statistico delle Utilizzazioni Idrauliche per Forza Motrice, prepared by the Instituto Poligrafico dello Stato, dated 1942, and showing the principal characteristics of all hydro electric stations in Italy.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

4. Work is progressing rapidly on the North Italy transmission line map, and it is hoped to have at least a preliminary map in your hands by 7 October.

E.J. BARRY,
Major C.E.,
Acting Chief Elec.Div.

Inclusures -

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Declassified E.O. 12356 Section 3.3/NND No. 785019

21 SEP Recd 15e ak

Public Works & Utilities

SECRET

SUBJECT:- Electric Power Stations

Headquarters
A.A.I. (Adv)

2331/6/RE/1

18 Sep 44

TO: FIFTH Army (for Engr)
GE EIGHTH Army
Electrical Reconstruction Committee Italy

1. A British liaison officer in the UDINE area states :-

"PLAVA B 6817 and DOBLARI B 7625 stations are built into the mountains and supply GORIZIA and TRIESTE. NOVE and CANEVA stations supply UDINE Province. The latter two have suffered slight damage by Partisan action. Continuous attacks on all supply lines from all stations have produced greatly reduced efficiency throughout the whole area."

2. Partisans have, of course, now been instructed to safeguard, NOT to damage electric power installations.

HEADQUARTERS
21 SEP 1944
A. C. C.

DeBailey

Major RE
for Maj-Gen
Chief Engineer

Copy to: DW Main AAI

Major Reveley
for power section
reply required
W.J.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Public Works & Util

SECRET

Headquarters
A.A.I. (Adv)

2531/6/RE

18 Sep 44

Electrical Reconstruction
Committee ITALY

SUBJECT:- Safeguarding of electric power stations in N.E. ITALY

Special service units and Partisans have been requested to safeguard if possible the power stations and sub-stations listed at Appendix "A", in the priority there given.

D.C. Bailey

Major RE
for Maj-Gen
Chief Engineer

Copy to: DW Main AAI

HEADQUARTERS
21 SEP 1944
A. C. C.

Copy

SECRET

Priority list of Electric power installations in NE ITALY, revised to include sub-stations.

1.	TADALTO	hydro electric station	23/710210
2.	NOVE	hydro electric station	23/689176
3.	MESTRE	thermal station	51/618534
4.	MESTRE	sub-station - near MESTRE thermal station.	
5.	SUVIANA	hydro electric station (Not sheet 91 as previously stated)	98/630093
6.	BOLOGNA	sub-station	87/893515
7.	SAN POLO d'ENZA	sub-station	85/170663
8.	RIVA	hydro electric station	35/549040
9.	DOBLARI	hydro electric station	26/783273 +
10.	VERONA	sub-station	
11.	BUSSOLENGO	sub-station	48/532588
12.	CARDANO	hydro electric station	10/002702
13.	CANEVA	hydro electric station	38/795095
14.	PONTE CARDENA	hydro electric underground station	11/110820
15.	BRESSANONE	hydro electric underground station	44/220944
16.	PEIOS	hydro electric station	13/813675
17.	TRENTO	sub-station.	

+ Subject to checking, as arranged with Captain GIBSON of No. 1 Special Force.

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4.	MESTRE	sub-station - near MESTRE thermal station.	
5.	SUVIANA	hydro electric station (Not sheet 91 as previously stated)	38/632093
6.	BOLOGNA	sub-station	87/893515
7.	SAN POLO d'ENZA	sub-station	85/170663
8.	RIVA	hydro electric station	35/549040
9.	DONEGARI	hydro electric station	26/783273 +
10.	VERONA	sub-station	
11.	BUSSOLENGO	sub-station	48/532588
12.	CARBANO	hydro electric station	10/002702
13.	CANEVA	hydro electric station	38/795095
14.	PONTE GARDENA	hydro electric underground station	11/110820
15.	BRESSANONE	hydro electric underground station	14/220544
16.	MELOS	hydro electric station	13/813675
17.	TRENTO	sub-station.	

+ Subject to checking, as arranged with Captain PIRSON of No. 1 Special Force.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 482001

MB/ddg

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 794

ACC/158/PWU

25 Sept. 1944.

Subject : Montemartini steam plant Diesel motors operation.

To : A.C.F.A. CO. ROME - Via Milano.

1. In order to keep in the best operation conditions your two Diesel motors we ask you to operate with the above mentioned units only during the peak hours, every day, and in emergency time.

2. You will give orders that in any other time the Diesel motors of your Montemartini steam plant may be stopped.

E.J. MANLY
Major, C.E.,
Acting Chief, Elec.Div.

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Public Works & Utilities

HEADQUARTERS
REGION VIII (TUSCANY)
ALLIED MILITARY GOVERNMENT

20 SEP Recd
158 PW/3

R. 139 PWU

RVIII/100/PWU/13

17 Sep 44

SUBJECT : Transmittal of receipt for electric transmission-line material.

TO : Public Works & Utilities Sub-Commission ACC HQ. ✓
APO 394

Reference your letter n.ACC/158/PWU,dated 5 Sep 44.

Attached signed receipts.

The 8 empty wire reels will be returned your H.Q. as soon as possible.

P.S.L.LEE
MAJOR R.E.
REGIONAL ENGINEER

I am returning one set of the receipts.
R

Enclosures : N.6 receipts.

ACC HEADQUARTERS VIII 18 SEP OFFICIAL 1706

Declassified E.O. 12356 Section 3.3/NND No. 785019

Reference your letter n.ACC/158/PWU,dated 5 Sep 44.

Attached signed receipts.

The 8 empty wire reels will be returned your H.Q. as soon as possible.

P.S.L.LEE
MAJOR R.E.
REGIONAL ENGINEER

I am returning one part of the receipts. R.

Enclosures : N.6 receipts.

File/

HEADQUARTERS
19 SEP 1944
A. C. C.

ACC HEADQUARTERS VIII REGION 18 SEP 1944 OFFICIAL 7700 216

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Received of Major Viual S. Renton Public Works and Utilities Sub-Commission, Headquarters, Allied Control Commission the following electrical material:

- 15 and half kilograms of pure tin.

R Eathleen Cadet
(signature of Officer Receiving Material)

10 Sett 44
(date)

Note - The above material was obtained from the plant of Spolettificio Via Flaminia, Rome on 4 September 1944.

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Received of Major Vinal S. Benton Public Works and Utilities Sub-Commission, Headquarters, Allied Control Commission the following electrical material:

- 505 Kilograms of stranded wire 50 square millimeters in cross-section (about 3 kilometers);
- 100 Conical wire connectors;
- 150 Parallel wire clamps;
- 5 Kilograms of solder.

R. Scotchmer Capt
(signature of Officer receiving material)

10 Sept 44
(date)

Note - The above listed material was obtained from the warehouse of the Azienda Centrale Elettricita' e Acqua, on 4 September 1944.
Address: Via Milano - Rome.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Received of Major Vimal S. Renton Public Works and Utilities Sub-Commission, Headquarters, Allied Control Commission the following electrical material:

- 2321 kilograms stranded aluminium conductor, 50 square millimeters in cross-section (8 reels, 2.5 kilometers each);
- 50 Cable connectors.

R Cathcart Cadet
(signature of Officer Receiving Material)

10 Sept 44
(date)

Note - The above material was obtained from the warehouse of the Societa' Romana di Elettricita' on 4 September 1944.
Address: Via Poli, 14 Rome.

Declassified E.O. 12356 Section 3.3/NND No. 785019

P.W.+U.

HEADQUARTERS REGION IV
ALLIED CONTROL COMMISSION
(Engineering Division)
AFO 394

20 SEP Recd

138

Rome, 20 September 1944

Memorandum
TO : Lt.Col.Lapper Electrical Section
P.W.&U. Sub-Commission HQ.A.C.S.

SUBJECT : "TERNI COY" Report on electrical Installations.

FILE NO. : R4/ENG/90 (a)

Enclosed translated copy of report received from TERNI Coy, concerning repairs made on electrical installation up to the 15th September.

E.P. WADE BROWN
Lieutenant
Chief E&M Section

Enclosure: 1

Major Canty

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Declassified E.O. 12356 Section 3.3/NND No. 785019

mpet

TRANSLATION OF A REPORT DATED 15TH SEPTEMBER 1944

FROM: TERNI - Societh per l'Industria e l'Elettricith

TO : Electrical Section

REPORT DATED 15TH SEPTEMBER 1944

A) Situation of Electric Lines.

Some poles are in construction to substitute the other ones in the damaged supports.

It is not yet possible the starting of the works in the country on account of the deficiency of motor-cars.

B) Electric Stations.

1) The group of the Acciaieria, with a power of 1500 KW, is functioning from the 14th Sept. inst.

2) The second group of Cervara has been started on the 13th Sept., it is foreseen that it will be working after two days of heating, with a power of 1600 KW.

C) Electric-power production and distribution.

In the first fortnight of this month there has been quite a difference between the data already communicated inthe report of the 1st Sept. last and the data up to the 15th Sept.

The result of the entering into function of the Acciaieria group and of the Cervara second group will be felt in the second fortnight of the instant month.

Declassified E.O. 12356 Section 3.3/NND No. 785019

16 SEP Recd 15 Encls P.W. 40 137

Subject: Report on electrical power plants in Perugia Province.

Main H.Q., A.F.H.Q.
Eighth Army.

GA/50

13 Sep 44

H.Q., A.M.G.
Region IV.
APO 394.

Maj Errera

1. Attached is a copy of a survey on the electrical power plants in Perugia Province, undertaken on behalf of this H.Q. by the Region IX Electrical engineer.

2. In view of the vital importance of electric supply, it is suggested that your engineer should take over the rehabilitation of the electric system forthwith, and commence work on same.

3. In connection with the report referred to, it is observed that in para 3, the total capacity of the plants in Perugia Province now working is 3830 KVA, but as the machinery producing this supply is old and in case of a standby order, it is subject to continual breakdown, so that the average supply available is probably between 1500 and 2000 KVA.

E T Beer
for Group Captain,
Officer Commanding.
H.Q., A.M.G. Eighth Army Main.

Copy to: P.C. Perugia Province.
H.Q. A.C.C. Economic Section.

Lt Col Keyser
Ka 16/9

Maj Brown E.S.
Rome

Ufficio Posta Militare 203
210

Ufficio Posta Militare 4 Sezione Censura Alleata
Visto, si autorizza la spedizione di Fascicolo N. 85

ALLIED MILITARY GOVERNMENT

8 September 1944

Subject: Report of electrical power plants in Perugia Province.

To: Senior Civil Affairs Officer
Eighth Army

1. Objective: the purpose of this report is to investigate the hydro and thermal electrical properties of Perugia Province.

2. General Remarks: Perugia Province is primarily an agricultural region and lacks any heavy industries such as is found in Terni Province. The electrical supply and electrical industry in Perugia Province is then by connotation very small and insufficient even for meager needs. They have depended on the Terni properties for the main sources of electrical energy. When the Terni properties were destroyed by the war (almost no Terni property, i.e., generating stations, transmission lines, switching stations, and sub-stations has escaped TOTAL damage by the war) this threw an enormous burden on the small local hydro plants.

There are 14 plants in the Perugia Province of which all but one (BASTARDO) are hydro plants. Of these 14 plants there are 8 plants which are absolutely untouched by the war. As may be expected, these plants that are undamaged are the small and inefficient stand-by plants. Of the total generating capacity of 42,505 KVA installed there is now operating a total of 3,830 KVA, or 9.0% of the total installed capacity. When it is considered that only two of the fourteen plants in the area have 85% of the installed capacity of this province then it may be visualized what effect the destruction of these two plants would have on the normal life of the area.

a. The plants which are undamaged by the war are:

REF. NO.	NAME OF PLANT
1	ALTOLINA
2	SAN GIOVANNI
3	MONTEMOLINO
4	VALSORINA
5	PIEDEVALLE
6	SCOPOLI
7	CASENOVE
8	PONTE FELCINO

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(1) All of these plants, with exception of SCOPOLI, are old and inefficient. A majority of them have exceeded their normally useful generator life of 25 years. It is to be expected that peak-load operation over a considerable period of time will cause a serious breakdown of the plant. All these plants showed evidence of long-delayed maintenance. That is to be expected in war time; but such work would be necessary to keep these obsolete machines on the line for any long period of time.

b. There are 4 plants in the area which are completely destroyed by the war. These will be discussed with the idea of cannibalization in mind. These plants are:

REF. NO.	NAME OF PLANT
9	BASTARDO
12	RIPOLE
13	POMPAGGIO
14	CENTRALE DI PRACI

(1) These plants represent 21.0% of the total installed capacity of the area. Since they are of such vital importance each plant will be discussed in detail.

(b) BASTARDO (9) - This plant is operated on producer gas made from low-grade lignite found near SPOLETO. The prime movers are SKODA two-cylinder, horizontal engines. These engines are damaged by small charges of TNT placed on the driving rods and in the cylinders. The alternators are also made by SKODA and are damaged on the lower quadrant of the rotor. The stator windings are of course destroyed in the lower quadrant. The rotor shaft on each alternator has been fractured. The spokes of the rotors have also been fractured.

There are three transformers at this plant which have been totally destroyed by internal charges of TNT. There are three oil circuit breakers which are undamaged. They are rated at 300,000 KVA, 25,000 V, 1,000A. There are 11 lightning arresters of the Thyrite type which are undamaged. These arresters are rated at 700,000 KVA.

Some of the auxiliary equipment at this plant has been undamaged. There are three synchronous motors of the following rating: 110 KW, 1400rpm, 50 cycles, Stator - 500 V, 150 A, Rotor-410V, 176A. There is one motor-generator set which is in good condition. It is rated as follows: AC - 15 KW, 1450 rpm, Stator-500 V, 22 A, Rotor - 154 V, 62 A, DC - 7-11 KW, 230 V.

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(c). RIPOLI (12) - This plant was only recently in German hands and a thorough demolition job was done. The penstock was undamaged. However, the turbine was completely destroyed. There is one Allgemeine-Elektricitats-Gesellschaft (AEG) alternator in the plant which has its rotor completely destroyed. The stator is only slightly damaged. There are two Marelli transformers in the plant which have small-caliber bullet holes through the cooling fins. The shots have evidently pierced the transformer coils, but they could be repaired with the proper equipment and transferred to some plant where they are badly needed. There is also one oil circuit breaker that is undamaged.

(d). POMPAGGIO (13) - This plant is one of the Terni group, and like all of this company there is almost complete destruction. There is one penstock undamaged, but both trubines are completely blown out of the plant. Two alternators are so completely damaged they are beyond repair.

The transformers at this plant deserve particular attention. There are two SAN GIORGIO transformers with small-caliber bullet holes through the cooling fins. Since they are of such large capacity (250 KVA each) it would be of advantage to repair them. Three taps on the low voltage side would aid their use with various alternators. Also at this plant there is the only transformer with a tertiary zinding in this area. It is rated at 150 + 50 KVA, 10,000/6,000/3,000/220 V. There are also three (3) oil circuit breakers in good condition.

(e). CENTRALE DI PRECI (14) - This is the largest hydro plant in Perugia Province and was important as a switching station for the Terni group. All the switching equipment, oil circuit breakers, lightning arresters, and generating equipment is completely destroyed. All that remains in good condition are the two exciters on top of the two alternators. This plant had the only horizontal alternators in the area.

c. There are two plants in the area which are capable of running with some repairs and re-connections. The plants are:

REF. NO.	NAME OF PLANT
10	RASIGLIA
11	PAIL

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Perugia Electrical Power (Cont'd)

(a) RASIGLIA (10) - This plant is now operating with an alternator of German make which has been substituted for the original one. At the time of this survey (Aug 1944) there was no transformer installed although one was nearby and it is assumed that the transformer is now installed. At the time of the survey the power was being generated and transmitted at 190 volts. It is evident that the line losses were so great that this machine may as well have been idle as to run at such low voltage. In effect, all the alternator was doing was supplying one family with lights. However, this was a very temporary arrangement and the transformer that is to be installed will allow this plant to connect with the UNES system.

There is one Marelli transformer in the plant which has been damaged as were the ones at RIPOLI and PONTAGGIO.

There is a Marelli alternator in the plant which has been damaged by the Germans so that it is now useless. The rotor coils are damaged slightly and the rotor shaft is misaligned. The stator coils are slightly damaged. The exciter is completely undamaged.

(b). PAIE (11) - This plant was not operating when surveyed due to a number of factors. The plant supplied power to a paper mill owned by Sordini & Figlia. Since the paper mill is completely destroyed there is no longer a use for the power plant in its present condition. The plant is not connected with the UNES system although UNES has a transmission line (10,000 volts) nearby. This plant could be connected to the UNES system by the substitution of a suitable transformer. This scheme would add a much-needed 115 KVA to the area's capacity.

4. Recommendations and Conclusions: a. That the two plants, PAIE and RASIGLIA, be put on the UNES system by the connection of transformers of proper voltage.

b. That the original alternator at RASIGLIA be repaired as soon as possible and replace the temporary alternator now in use.

c. That RIPOLI be neglected for the present time.

d. That PONTAGGIO be rehabilitated at the earliest practicable time by installation of turbines and alternators and repair of existing transformers.

e. That CENTRALE DI PERCI be rehabilitated by replacing of existing destroyed alternators and transformers.

f. That BASTARDO be abandoned for the present time. The difference in voltage and operating characteristics from the remainder of the system make it the most uneconomical and difficult to rehabilitate.

signed

Edgar H. Rogers

Declassified E.O. 12356 Section 3.3/NND No. 785019

that is to be installed will allow the plant to operate on the UNES system.

There is one Marelli transformer in the plant which has been damaged as were the ones at RIPOLI and POMPAGGIO.

There is a Marelli alternator in the plant which has been damaged by the Germans so that it is now useless. The rotor coils are damaged slightly and the rotor shaft is misaligned. The stator coils are slightly damaged. The exciter is completely undamaged.

(b). PAILE (11) - This plant was not operating when our troops due to a number of factors. The plant supplied power to a paper mill owned by Serdini & Miglia. Since the paper mill is completely destroyed there is no longer a use for the power plant in its present condition. The plant is not connected with the UNES system although UNES has a transmission line (10,000 volts) nearby. This plant could be connected to the UNES system by the substitution of a suitable transformer. Thisscheme would add a much-needed 115 KVA to the area's capacity.

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b. That the original alternator at RASIGLIA be repaired as soon as possible and replace the temporary alternator now in use.

c. That RIPOLI be neglected for the present time.

d. That POMPAGGIO be rehabilitated at the earliest practicable time by installation of turbines and alternators and repair of existing transformers.

e. That CENTRALE DI PRECI be rehabilitated by replacing of existing destroyed alternators and transformers.

f. That BASTARDO be abandoned forthe present time. The difference in voltage and operating characteristics from the remainder of the system make it the most uneconomical and difficult to rehabilitate.

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signed

Edgar H. Rogers
Captain, CE

Declassified E.O. 12356 Section 3.3/NND No. 785019

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LINEE AD ALTA TENSIONE

RELAZIONE SUI DANNI EFFETTUATI DAI TEDESCHI E SULLE RIPARAZIONI DA ESEGUIRE

=.=.=.=.=.=.=.=.=

A - DESCRIZIONE DEI DANNI

1) - Linea 230 KV. Villa Valle-Popoli e derivazioni Vomano (lunghezza Km.168)

Dal punto di vista dei tipi di palificazione adottati, questa linea può dividersi nei seguenti tronchi:

a)- Tronco Villa Valle-Sottostazione di Passo Capannelle, a semplice palificazione con pali a traliccio in cemento armato vibrato, costruiti in posto;

b)- Tronco Passo Capannelle-Centrale San Giacomo, a doppia palificazione costruito con pali a traliccio a struttura mista, angolari e tubi;

c)- Tronco Passo Capannelle-L'Aquila, a semplice palificazione, con pali a traliccio come in b);

d)- Tronco L'Aquila-Popoli, a semplice palificazione, con pali a traliccio con elementi tubolari Mannesmann-Dalmine.

Le membrature dei pali dei tronchi b), c), d) sono in acciaio.

I danni subiti sono i seguenti:

Tronco a) - 21 pali distrutti.
Tronco b) - Nessun palo abbattuto o danneggiato.
Tronco c) - 17 pali abbattuti e uno danneggiato.
Tronco d) - 61 pali abbattuti.

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In totale quindi si hanno:

- 21 pali distrutti; 78 pali abbattuti; 1 danneggiato.

Il numero totale dei sostegni della linea è di 517.

Per effetto della caduta dei pali si sono rotti circa 3500 isolatori, mentre si è avuto il danneggiamento di alcuni Km. di conduttore (in alluminio-acciaio) specie in corrispondenza degli attraversamenti stradali.

I pali del tronco Passo Capannelle-L'Aquila sono stati minati su tre montanti, mentre quelli del tronco L'Aquila-Popoli hanno avuto due montanti minati. I danni consistenti sopratutto nella forte deformazione delle varie membrature, interessano specialmente il primo tronco, la traversa porta conduttori e le antenne porta fili di guardia.

Occorrerà ritesare circa 35 Km. di linea a 3 conduttori in alluminio-acciaio a due fili di guardia, in acciaio zincato.

I basamenti dei sostegni sono tutti in buone condizioni.

2) - <u>Linea 155 KV. Galleto-Cotilia-Popoli</u> (lunghezza Km.115)

La palificazione di questa linea è costruita con angolari in ferro omogeneo.

Sono stati abbattuti 135 sostegni, su un totale di 463 per tutta la linea, dei quali 25 sul tratto Vigliano-L'Aquila e 120 tra L'Aquila e Popoli.

Anche per questa linea i danni sono localizzati al primo tronco ed alle mensole.

La caduta dei sostegni ha provocato la rottura 20 circa 2500

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isolatori, ed il danneggiamento di alcuni Km. di conduttore.

Occorrerà ritesare circa 40 Km. di linea a 3 conduttori in alluminio-acciaio.

I basamenti sono in buone condizioni.

3) - Linea 120 KV. Villa Valle-Chiusi (lunghezza Km.81)

La palificazione di questa linea è costruita con angolari in ferro omogeneo.

Sono stati abbattuti 11 pali e 2 sono avariati, su un totale di 336 sostegni.

I danni sono analoghi a quelli della linea precedente.

La caduta dei sostegni ha provocata la rottura di 250 isolatori.

I danni del conduttore sono limitati, trattandosi di treccia in rame. Occorrerà ritesare circa 2,5 Km. di linea, con tre conduttori.

I basamenti sono in buone condizioni.

4) - Linea 120 KV. Galleto-Camerino (lunghezza Km.86)

La palificazione di questa linea è costruita con angolari in ferro omogeneo.

Sono stati abbattuti 16 pali, su un totale di 372 sostegni, mediante minamento di due dei quattro montanti.

I danni sono analoghi a quelli della linea precedente.

La caduta dei sostegni ha provocato la rottura di 300 isolatori.

I danni del conduttore sono limitati, trattandosi di treccia di rame. Occorrerà ritesare circa 4 Km. di linea, con tre conduttori.

I basamenti sono in buone condizioni.

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5) - Linea 120 KV. Galleto-Preci (lunghezza Km.47)

Questa linea non ha subito danneggiamenti apprezzabili.

6) - Linea 120 KV. Preci-Foligno-Chiusi (lunghezza Km.92)

La palificazione di questa linea è costruita con elementi tubolari Mannesmann-Dalmine.

Sono stati abbattuti due pali sul tronco Preci-Foligno, mentre sul tronco Foligno-Chiusi si sono avuti 9 pali abbattuti ed uno danneggiato. Il numero totale dei sostegni è di 363.

I danni sono analoghi a quelli della linea precedente.

La caduta ha provocato la rottura di 220 isolatori.

I danni al conduttore sono più notevoli di quelli delle linee precedenti, trattandosi di conduttore in alluminio-acciaio. Occorrerà ritesare due Km. di linea a 3 conduttori.

I basamenti sono in buone condizioni.

B - PROGRAMMA DI RICOSTRUZIONE

L'uniformità dei danni arrecati alle linee sopra descritte, permette di formulare un indirizzo unico di ricostruzione.

E' da escludere che si possa procedere alla riparazione delle palificazioni danneggiate, mediante sole operazioni eseguite in campagna.

E' pertanto necessario esaminare ogni singolo palo abbattuto e formulare un dettagliato ordinativo di lavoro e di materiale, in modo da effettuare in officina la costruzione dei pezzi necessari per la sostituzione e riparazione di quelli rotti 202 danneggiati.

Noi possediamo già notevoli quantitativi di angolare in ferro

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omogeneo e non appena terminato il lavoro di rilievo, già iniziato, potremo stabilire i quantitativi da ordinare alla nostra Acciaieria.

Quanto agli angolari in acciaio, abbiamo già avuto assicurazioni sulla possibilità di costruzione in Acciaieria, limitatamente però a certi profili massimi (pare 100x100); per i profili maggiori si dovrà pensare alla sostituzione con opportune combinazioni di profili minori. Ciò sarà determinato in modo preciso quando si conosceranno i profili occorrenti e quelli ottenibili dall'Acciaieria.

Più ardua si presenta la questione della sostituzione degli elementi tubolari (palificazione 230 KV. Villa Valle-Popoli e 120 KV. Preci-Foligno-Chiusi), poichè la nostra Acciaieria non è in grado di costruire tubi di dimensioni adatte ai nostri bisogni. Perciò si cercherà di riparare il più possibile le membrature danneggiate e di sostituire le altre con angolari o con profili risultanti dalla opportuna combinazione di questi. La questione verrà affrontata nel dettaglio dopo ultimata l'elencazione, già iniziata, del fabbisogno di ogni singolo palo.

Una volta effettuata in officina la costruzione o riparazione dei vari pezzi, occorrerà trasportare questi a piè d'opera, dove si procederà ai necessari adattamenti nonchè alla riparazione di quelle parti non trasportabili (parti incorporate nel basamento) o che non mette conto trasportare.

E' in corso il rastrellamento degli isolatori caduti per evitare l'ulteriore danneggiamento per atti vandalici. 201

Sono anche in corso di attuazione opportune provvidenze per evitare l'ulteriore danneggiamento dei conduttori che toccano terra o

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Declassified E.O. 12356 Section 3.3/NND No. 785019

sono molto prossimi a toccar terra, consistenti nell'interramento dei primi e nel rialzamento degli altri.

L'allontanamento dei conduttori dai pali, indispensabile per il rialzamento di questi, non presenta speciali difficoltà, dove la palificazione è del tipo tronco-piramidale, mentre per la palificazione della linea 230 KV., essendo del tipo ad Y, occorrerà procedere allo smontaggio della traversa porta-conduttori e delle braccia, per liberare il conduttore centrale. Per la linea 230 KV. sarà pertanto notevolmente laborioso il rialzamento dei pali, che richiede un preventivo smontaggio quasi integrale.

C - ATTREZZATURE OCCORRENTI

a)- Per la riparazione dei pali in campagna occorreranno:

nº 4 Forcelloni da forgiatore
" 4 Martelli da calderaio a 2 bocche
" 2 Martelli da aggiustatore
" 20 Scalpelli
" 10 Spine coniche
" 2 Mazze di acciaio
" 2 Trance
" 5 Paletti di acciaio
" 2 reggicolpi della lunghezza di mt.1
" 4 Paia di tenaglie da forgiatore
" 2 Cassogeni con accessori
" 1 Banco con morsa da aggiustatore
" 10 Lime a taglio grosso assortite (piane - triangolo, tondo, mezzo tondo)

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nº 1 Puntino
" 1 Punta a tracciare
" 1 Forgia a mano someggiabile
" 1 Gruppo elettrogeno
" 1 Gruppo per saldatura elettrica
" 2 Trapani elettrici portatili
" 2 Trapani a mano portatili
" 4 Cesoie tagliabulloni

b)- Per il montaggio dei pali:
nº 5 Serie di chiavi fisse
" 6 Morsettoni da calderaio
" 2 Chiavi registrabili
" 2 Falconi da 3 tonnellate
"300 metri di fune di canapa Ø 10 mm. - 15 mm. e 30 mm.
" 2 Paranchi da 3 tonnellate

c)- Per i trasporti occorreranno:
nº 1 camion da 60 q.li con rimorchio
" 2 camion da 40 q.li

d)- Per la tesatura dei conduttori e fili di guardia:

nº 2 Argani a mano da 8 q.li
" 2 Argani a mano da 25 q.li
" 10 Taglie assortite
" 2 Presse per giunti a compressione
" 1000 metri di fune di acciaio flessibile Ø 12 mm.
" 4 Seghetti a ferro con 100 lame
" 4 cesoie tagliabulloni
" 5 Serie di chiavi fisse
" 2 Chiavi inglesi
" 2 Ponti di servizio per ormeggi

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e)- Per la sorveglianza e sopraluoghi ai lavori

nº 2 Vetture

f)- Per porre gli uomini in condizioni di lavorare, sarà necessaria la distribuzione di 100 paia di scarpe, 100 tute, 30 cinture di sicurezza e sopratutto occorrerà metterci in condizioni di distribuire viveri, che non è possibile trovare nelle zone dove si dovrà svolgere il lavoro.

D - ORDINE DI PRECEDENZA NEL RIPRISTINO DELLE VARIE LINEE

In relazione ai bisogni immediati, alle disponibilità di energia ed alle disponibilità di materiali, verrà subito iniziato il lavoro di ripristino del tronco Vigliano-L'Aquila, della linea 155 KV., di cui al punto 2 del comma a), e del tronco L'Aquila-Capannelle della linea 230 KV. - Ciò allo scopo di alimentare i cantieri di costruzione degli Impianti del Vomano, la cui ripresa ci è stata richiesta dalle Autorità Alleate.

Successivamente verrà completata la riparazione della linea 155 KV. rimettendo in ordine il tronco L'Aquila-Popoli.

Seguiranno, nell'ordine, le linee:

- 120 KV. Villa Valle-Chiusi;
- 120 KV. Preci-Foligno-Chiusi;
- 120 KV. Galleto-Camerino.

Non è escluso che, se speciali ragioni si affacceranno, si possa cambiare l'ordine di successione sopra esposto, oppure che potranno attaccarsi più lavori contemporaneamente. 198

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8 agosto 1944

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VSR/ec

Tel.489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

21 Sept. 1944

Subject: Transmittal of Electricity Consumption Report Central Italy.

To : Agencies Shown in Distribution List.

1. Transmitted herewith is a copy of a statistical report entitled "Electricity Consumption in Central Italy, 1st July to 31 August 1944".

2. It is to be noted that this report does not include information concerning the Ancona, Florence and Terni areas. This data was unevailable at the time the report was prepared. It will be included in future reports, when obtained.

E.J. BARRY,
Major C.E.,
Acting Chief Elect.Div.

Distribution:-

CE. APHQ
CE. AAI
DE. AAI
CE. No.1 District
Engineer PBS
Electrical Officer, Region IV A.C.C.
Flag Officer, Western Italy
C.G. R.A.A.C.
Allied Force Local Resources Section - R.A.A.C. CMF

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Subject: Transmittal of Electricity Consumption Report Central Italy.

To : Agencies Shown in Distribution List.

1. Transmitted herewith is a copy of a statistical report entitled "Electricity Consumption in Central Italy, 15 July to 31 August 1944".

2. It is to be noted that this report does not include information concerning the Ancona, Florence and Terni areas. This data was unavailable at the time the report was prepared. It will be included in future reports, when obtained.

E.J. BARRY,
Major C.E.,
Acting Chief Elect.Dir.

Distribution:-

CE. AFHQ
CE. AAI
DW. AAI
CE. No.1 District
Engineer PBS
Electrical Officer, Region IV A.C.C.
Flag Officer, Western Italy
C.C. R.A.A.C.
Allied Force Local Resources Section - R.A.A.C. CMF

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ACC 158/PWU (2 OF 2) 10000/150/461 (VOL. I)

ELECTRICITY JULY - NOV.

Declassified E.O. 12356 Section 3.3/NND No. 785019

10000/150/461
(VOL. I)

ELECTRICITY, CENTRAL ITALY
JULY - NOV. 1944

(2 OF 2)

Declassified E.O. 12356 Section 3.3/NND No. 785019

ELECTRICITY CONSUMPTION
CENTRAL ITALY
15 JULY TO 31 AUGUST 1944

ELECTRICAL DIVISION
PUBLIC WORKS AND UTILITIES
SUB-COMMISSION
HEADQUARTERS ALLIED CONTROL COMMISSION
APO 394

Declassified E.O. 12356 Section 3.3/NND No. 785019

R O M E

Maximum permitted daily consumption:

166,000 Kw-hr plus available output from Rome Steam plants.

Maximum permitted demand: 8,200 plus available capacity of Rome Steam plants.

Controlling Authority R.A.A.C.

Date	Consumption Kw-hr	Maximum Demand Kw	Date	Consumption Kw-hr	Maximum Demand Kw
July, 1944			August, 1944		
16	602,474	33.300	17	647.835	30.700
17	567.835	29.600	18	644.403	34.100
18	531.429	28.000	19	649.349	34.000
19	539.295	31.900	20	621.647	31.600
20	566.861	28.000	21	664.977	32.300
21	600.512	29.700	22	681.341	39.600
22	630.390	31.800	23	688.139	34.700
23	606.987	32.600	24	690.913	35.000
24	619.543	32.200	25	688.510	35.000
25	617.915	31.200	26	699.770	33.900
26	623.249	30.900	27	634.694	33.100
27	608.827	30.700	28	698.399	38.900
28	617.381	29.100	29	690.163	36.300
29	659.281	31.300	30	672.612	36.800
30	580.657	29.900	31	633.251	32.700
31	622.621	31.700			
August, 1944			September, 1944		
1	602.200	32.900	1	692.266	39.100
2	632.421	29.500	2	643.821	31.300
3	638.442	30.900	3	567.469	29.500
4	653.279	36.300	4	603.771	30.800
5	656851	32.700	5	611.103	30.700
6	639.189	33.400	6	562.354	29.300
7	610.134	32.600	7	513.157	28.800
8	642.214	32.700	8	568.872	27.800
9	572.890	31.800	9	535.436	28.200
10	639.588	32.200	10	571.005	30.400
11	651.845	35.100	11	491.167	23.300
12	651.711	33.800	12	468.325	27.600
13	603.444	29.400	13	548.736	28.300
14	623.671	32.900	14	581.614	28.900
15	584.879	30.000			
16	644.415	31.700			

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C I V I T A V E C C H I A

Maximum permitted energy daily consumption:

Maximum permitted demand: 3.000 KW

Controlling Authority : P.R.S.

Date	Consumption in Kw-hr			Average Maximum Daily Demand Kilowatts		
	City	Cement Mill	Total	Town	Cement Mill	Total
Sept.						
1	5.800	12.400	18.200			
2	4.500	17.600	22.100			
3	5.700	13.900	19.600			
4	7.300	19.100	26.400			
5	7.700	18.200	25.900			
6	8.400	17.200	25.600			
7	7.400	20.100	27.800			
8	6.700	19.200	25.900	350	1.200	1.550
9	6.400	15.500	22.900			
10	7.800	14.800	22.600			
11	7.800	19.300	27.100			
12	7.700	19.500	27.200			
13	7.500	19.300	26.800			
14	7.900	14.600	22.500			
15	7.100	3.000	10.100			

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Tel. 499061

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

EJW/ee
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ACC/198 PWU

22 Sep. 44

Subject : Log of Maj. Bell

To : Lt.Col.W.E.Lapper - Chief, Elec. Div.
P.W.U. Engineer s (Attion Lt.Col.Cooley)
Provincial Commissioner Turni (Attention Maj. Fricker)
Hq. Region VIII (Attention Regional Engineer)
Hq. Region IV (Attention Regional Engineer)
Hq. 5th Army A HQ (Attention Capt. Gaither)

1) - Attached is copy of the log of Maj. L.A.B oil for the period September 11th to September 21 inclusive.

W.E.LAPPER
Lieut-Colonel
Chief, Elec. Div.

1 enclosure

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HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LOG OF MAJOR L.A.BELL

September 13th - Terni

Conference with Major Adams - nothing else necessary for Terni to obtain heavy workers rations except for Terni to submit rosters through Italian channels.

Conference with De Gasperi, Bochiccio and Gigli. Second Cervara unit to have trial run to-day. Gigli to survey possibilities of electric service to SIRI oxygen immediately with 600 KW and await reply from Region IV Engineer. Asked De Gasperi to give us power program for Steel Plant (present and settled demand for next few months). Will be ready in one week. Mr.Miceli and Col Joy to go to Rieti to-day to investigate electric welders held by AMG there, needed by Terni Co. for transmission line repair.

September 14th

Conference with De Gasperi and Scalea - Rations - I was invited to partake of the first meal served to the workers. Discovered that they had been issued powdered cranberries for their dried vegetables. Investigated at warehouse. They have dried peas available and cranberries will not be issued again.

POL - Terni Co. still buying gasoline on black market at 60 lire per liter for trips to Rome. Small quantity available at CIP but not in amounts asked for in letter. Lt. Wade Brown please handle.

Tyres - must have tyres for lorries in plant and cars. Letter written (Maj. Price should have copy) Lt. Wade-Brown please handle.

Inspected Justificio di Terni - 1100 KW unit - All [illegible] on Board. Gasoline will be operating in about a month.

Inspected Cervara - 2nd unit started yesterday - electric tests to-day. 3rd unit ready in about 15 days.

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Conference with Eng.Gigli. Still impossible for transmissions line workmen to obtain food outside of province. 100 men involved. Worked out plan to have men draw their own rations one week at a time. Necessary to issue flour instead of bread etc..

Journey to Rome.

September 15th

Talked to Cpt.Gaither. 6 ton truck ready to go to Lardarello for casting (Hdq transportation section at Cecina).

Laid on truck - it is proceeding to Lardarello to-morrow. Trip to Lardarello with Eng.Errare. Stopped at Grosseto and talked with Engineer of Maremano Co. He needs 700 KW instead of 500 KW. Told him this was not possible at present but he could use up to 1000 KW during darkness hours. Stopped at Follonica. He cement.

Conference with Eng.Virgili, Biscrelli etc.. Second unit on September 14th. Truck arrived from Cecina. Pvt Cragg to accompany to Terni. Load 200 sheets of roofing at Monterotondo and send truck back to Cecina from Rome. Società Lardarello have agreed to increase salaries of employees at their request (through labor Union).- subject to ACC approval - Major Lee please handle. 600 sheets of black roofing must be varnished in order to last more than a month or so due to chemical reaction. Maj. Lee issue order material.

September 16th

Journey to Florence. Stopped at Volterra and conference with Maj.Robinson, CAO for Lardarello etc. He can only make Lardarello on his visits once in three weeks. Delegated his authority for issuing travel permits to me.

Conference with Cpt.Gaither. He desires pump, 438 ft. head, 50 liters per second. He not know of any. Also water pipe - possible to obtain in Terni. Called Capt. Laughlin, had him get in touch with Terni and lay on pipe to be brought back in 8 ton truck carrying casting. Capt.Gaither arranged to have three trucks of cement hauled at Florence to Lardarello (cement belongs to Lardarello Co.).

Conference with Maj.Lee, Capt. Reason, Maj. Richardson, Capt.Gaither. Line Lardarello to Florence due in this afternoon. Meeting September 22nd in Florence of Valdarno, Lardarello and various agencies interested in power distribution called by Col. Coley.

Journey to Lardarello. Eng.Errare has list of tools, materials etc..

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for Lerderello. Dr.Mammontai to contact Capt.Gaither in regard cement at Florence to-morrow.

September 17th

Trip to Rome.

September 18th

Called Col. Cooley. Meeting 22nd in V-Ideruo Office Florence satisfactory. Both units at Lerderello will not be on until September 22nd, due to first one having to be taken down.

September 19th

Conference with Col. Leeper and Maj. Berry. Material lists for Lerderello not approved beyond necessities for first 12,000 KW unit.

ACC ideas for distribution of Lerderello power :

	1st Set	2 Sets
Livorno	200	1500
Piombino	500	500
Grosseto	300	500
Siena	250	500
Florence	500	1850
Volterra	150	150
Total	2900	5000

We are also prepared to isolate 10,000 KW from grid at Rete Centoro and send to Florence if it is important that this amount be sent. Mines and factories at Terni will suffer thereby, in fact some loads at Terni (AAI approved and supervised) will be curtailed.

I am to meet Maj.Gen. Mc Couch, AFHQ Engineer at Florence 9.30 A.M. to-morrow for inspection of Lerderello. September 22nd meeting in Florence postponed by Col. Cooley.

September 20th

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Journey to Lerderello with Capt. Buren. Met Maj. Gen.Mc Couch and party - inspected Lerderello. Torrential rain all afternoon. Roads north and east impassible. Cement (40 tons) now at Follonica. Arranged for Lerderello trucks to haul this.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

September 21st

Inspected Lardarello with Capt. Duran. Borax being processed in chemical plant. Some borax was transported back to Florence by trucks that brought cement. Company requests permission to send some borax to Rome.

Journey to Rome. Stopped by Ribbola lignite mine. Manager says he is now using 300 KW - would like to have 600 KW.

Stopped at Aurelia. The two 1750 KVA units are ready for operation. 600 KVA transformer connected to grid. Necessary to get transformer from Vole i and provide coal. Ribbola Lignite is sufficient.

September 22nd

Conference with Eng.Errera. The connection between Terni and Rieti was made some time ago. Terni is now delivering 200 KW to Rieti through this connection. This is not sufficient however and the steam plant at Rieti is still operating to make up the difference. Possibly if rationing were put into effect at Rieti and 400 KW furnished by Terni, the steam plant could be shut down. Lt. Rado-Brown please handle.

Conference with Lt. Butcher. 800 sheets of corrugated roofing available at Monterotondo for Lardarello. Transportation can be furnished by Italian Contractor if Lardarello will pay for it. Eng.Virgili will be in to-day to discuss this with Lt. Butcher.

Declassified E.O. 12356 Section 3.3/NND No. 785019

13 SEP Rec'd

ROME ALLIED AREA COMMAND
APO #794, U.S. Army
ELECTRICITY CONTROL BOARD

WHH/va
12 September 1944

SUBJECT: Fuel for the Power Plants in Rome.

TO : Allied Control Commission, Economic Section,
APO #394, U.S. Army.

1. It has been reported to the Electricity Control Board that the breakdowns in the power plants in the course of the past week have been caused by the following three factors:

a. Faults in the outside lines from Tivoli, etc. which have not been compensated for by the requisite adjusting devices at the source.(The fitting of these devices is a difficult task).

b. The lignite brought into Rome has been of most inferior quality and several boilers had to be shut down.

c. Lack of supplies of Fuel Oil.

2. Request that the Board be informed whether the quality of Lignite can be improved and when Fuel Oil will be available for the power plants in Rome.

W. H. HUGHES
Major DAQCM
Chairman

Declassified E.O. 12356 Section 3.3/NND No. 785019

13 SEP Reel 15 Doc. P.W+U 133

ROME ALLIED AREA COMMAND
APO #794, U.S. Army
ELECTRICITY CONTROL BOARD

WHH/va
12 September 1944

SUBJECT: Repairs on Power Plant.

TO : Allied Control Commission, Public Works & Utilities Sub-Commission, APO #394, U.S. Army.

1. It has been reported to the Electricity Control Board that one of the factors in the breakdowns in the power plant during the course of the last week are faults in the outside lines from Tivoli, etc. which have not been compensated for by the requisite adjusting devices at the source.

2. Request that the Board be informed whether these repairs can be carried out by your section.

HEADQUARTERS 15 SEP 1944 A.C.

W. H. HUGHES
Major DAGCM
Chairman

Lt Col Kapper
Bd 14/9

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ME/bb

Tel: 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

18 Sept.1944

ACC/158/PWU

SUBJECT: Power generation in the Nera Montoro plant.

TO : The Valdarno Co. - Chief of Nera Montoro plant.
The Terni Co. - ROME.

In order to give from Nera Montoro the largest help to the electric Rome area supply we dispose:

(a) that the Salto and Turano Rivers reservoirs (Cotilia) operate a continous output of 10cu.m. sec,

(b) that the Piediluco lakes gates are operated in order to increase the generating power of the Nera Montoro plant, during the hours from 8 a.m. to 11 p.m. of about 3000 K.W. with corresponding reduction during the night hours.

(c) the Nera Montoro plant will operate in order to assure the maximum output on the Rome supply, during the hours from 8 a.m. to 11 p.m. with the as above mentioned water flow increase.

W.E. LAPPER
Lieut - Colonel
Chief, Util.

Encls:

Copy to Maj. Bell
Copy to Region IV Eng.
Copy to the ACEA Co. and Ro[illegible] Co. Rome

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Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSIONE
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LWL/ac

131

ACC/15E/PWU

13 Sep. 44

Subject : Civilian Hydro Electric Project Tiber Basin
Ref. RA/ENG/712 (s)

To : HEADQUARTERS REGION IV
Attention Regional Engineer

1) - Many thanks for [illegible]'s report on long term hydro-electric planning.

2) - This is interesting and although it may not be of immediate use to us, I should be glad if you would ask him to call and see me.

W.M.CARTER
Lieut-Colonel
Chief, Utilities Div.

Downgraded E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LWL/ac

ACC/158/PWU

15 Sep. 44

Subject : Log of Maj.L.A.BELL

To : PROVINCIAL COMMISSIONER - TERNI REGION IV
Attention Major Fricker

1) - Attached is copy of the log of Maj. L.A.Bell for the period September 6th to September 12th inclusive.

W.M.LAPPER
Lieut.Col.
Chief, Util.& Adm. Div.

1 enclosure

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15 SEP Recd 1688

P.W. & C.

129

HEADQUARTERS REGION IV
Allied Control Commission
(Engineering Division)

Rome, 13th September 1944.

File No : R4/Eng/700.1(d)

Subject : Small Plants in Region IV.

To : ACC R. IV & C Sec.

Attached is list of small plants in Region IV not owned by large distributors.

Lt.E.F. WADE-BROWN
Chief E & M Section.

List Rec'd Returned

No lists attached

184

Declassified E.O. 12356 Section 3.3/NND No. 785019

12 SEP Recd 158 Cab.

WE/VO

HEADQUARTERS
ALLIED CONTROL COMMISSION
REGION IV
ENGINEERING DIVISION

1 Ex 128

Rome, 11th September 1944.

File N° : R4/ENG/712 (a).

Subject : Civilian Hydro Electric Project Tiber Basin.

To : ACC Hq PW & U S.C.
att. Lt.Col. W.M. Lapper.

Re Col Lapper.
Rad 13/9

Engineer Remo Catani has visited this office and placed before us documents concerning a pre-war scheme for increasing the hydro-electric resources of the Tiber Basin.

It is realized that his scheme is a long term policy in the fullest sense of the word. There are, however, certain sections of it that might be usefully extracted in a modified form and adopted in the less distant future.

I enclose the details given to this office for your consideration.

Lt.Col.RE

Regional Engineer
ACC Region IV.

Encl.
Pamphlet - Hydroelectric
" Il Bacino del Medio-Tevere
Letter dated 2 Sept. 1938
" " 16 " 1938
" " 17 " 1938

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155

(1) Sincerely thanks for long term report on planning.

(2) This is [illegible] many of [illegible] which may not be [illegible] to, I should [illegible] look [illegible] to [illegible] and [illegible] see what

Love L

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R 5-IX-38

La Houille Blanche

Revue Générale des Emplois coordonnés de l'Energie Hydraulique et de la Houille Noire

Fondée en 1901

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Directeur de l'Institut et Secrétaire Général de la Commission des Etudes Rhodaniennes

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MERCIER
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DE PAMPELONNE
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Adr. Télégraph. : ARTORÉ-GRENOBLE
Compte Chèques Postaux LYON n/s 8-84

Grenoble, le 2 Septembre 1938

Monsieur Remo CATANI,
Ingénieur,
Via Lisbona 9,
ROMA (Italie)

Cher Monsieur,

" The Board of Engineers for Rivers and Harbors " de WASHINGTON a été intéressé par votre étude sur " Le Tibre et les Lacs du Haut et Moyen Lazio ", dont la traduction a paru dans la Houille Blanche de Juillet-Septembre 1937.

Ce bureau désirerait l'article original en Italien. L'exemplaire que vous m'aviez envoyé a servi à l'imprimeur pour la mise en page et, de de fait, a été rendu inutilisable.

Pourriez-vous en envoyer un exemplaire à :

Monsieur C.L. BENSON
Administrative Assistant,
War Department
The Board of Engineers for Rivers and Harbors
2848 Munitions Building
WASHINGTON D.C. (Etats-Unis)

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Avec mes remerciements enticipés, veuillez agréer, Cher Monsieur, l'expression de mes sentiments distingués.

Le Secrétaire général :

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IN REPLY PLEASE
REFER TO
141.81/...

WAR DEPARTMENT
THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS
2848 MUNITIONS BUILDING, WASHINGTON, D. C.

October 17, 1938.

Ing. Remo Catani,
Via Lisbona, 9,
Rome, Italy.

Dear Sir:

I am in receipt of the further report inclosed with your letter of October 3, 1938, and wish to express my appreciation for the same.

It is noted that this data is an abstract of the printed publication already forwarded by you and will therefore be filed with Il Tevere Ed I Laghi Dell'Alto E Medio Lazio.

For the Board:

Very truly yours,

R. A. Wheeler,
Lieut. Col., Corps of Engineers,
Resident Member of the Board.

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R 30m 38

WAR DEPARTMENT
THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS
2848 MUNITIONS BUILDING, WASHINGTON, D. C.

IN REPLY PLEASE REFER TO 141.5/ 972

September 16, 1938.

Ing. Remo Catani,
Via Lisbona, 9,
Rome, Italy.

Dear Mr. Catani:

I am in receipt of your letter of September 5, 1938, and also the copy of the publication entitled "Il Tevere Ed I Laghi Dell'Alto E Medio Lazio".

It is noted further that you expect to forward other material at the end of the seasonal vacation.

Please be assured of my appreciation for this interesting data and for the courtesy shown by yourself and the editor of the "Houille Blanche".

For the Board:

Very truly yours,

R. A. Wheeler.

R. A. Wheeler,
Lieut. Col., Corps of Engineers,
Resident Member of the Board.

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REMO CATANI

IL BACINO DEL MEDIO TEVERE
NELLE POSSIBILITÀ DELLA IRRIGAZIONE DELLA PRODUZIONE DI ENERGIA ELETTRICA E DELLA NAVIGAZIONE

Il Tevere è forse l'esempio più classico dell'aforisma: « La storia è la quarta dimensione della geografia e le dà ritmo e senso ».

Del suo bacino, oltre che citarne le dimensioni geometriche ed i limiti geografici, se ne deve sempre rammentare la storia. Nessun'altro fiume, quasi alla fine del suo bacino, attraversa una città così ricca di storia come Roma.

Il ritmo ed il senso che i 2700 anni della storia di Roma hanno impresso al bacino del Tevere, ed in modo particolare, al corso urbano del fiume, sono visibili nell'aspetto augusto dei territori tiberini, nelle loro strade, nei ponti, negli acquedotti, i porti, nelle Basiliche cristiane, nelle monumentali fontane.

Chiunque abbia proposto od eseguito lavori nel bacino del Tevere, ha profondamente inteso la propria responsabilità di urtarsi con la storia di questo nostro centro di due grandi civilizzazioni.

Sono le opere inerenti alle acque che ricollegano più strettamente il bacino del Tevere alla Storia: o piccole opere artistiche, come il tempietto alle Fonti del Clitunno, od opere naturali come il Fosso di Curio Dentato, oppure il maestoso Ponte di Augusto a Narni, od infine, i templi pagani ed i cunicoli gregoriani di Tivoli.

E' talvolta avvenuto che qualche demolizione è stata ritenuta inevitabile; molto più spesso non sono state effettuate asportazioni che erano state proposte.

La soppressione dell'Isola Tiberina e degli avanzi di Ponte Rotto, fu proposta dalla Commissione del Tevere del 1871 e fu confermata da quella del 1900, con questa dichiarazione: « La Com-
« missione dà questo gravissimo suggerimento non senza grande pe-
« ritanza. Essa non si nasconde le enormi difficoltà cui va incontro
« non tanto per i riguardi archeologici, ai quali fu sempre ora aver
« ceduto, quanto per le conseguenze della condanna dei lavori ese-

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« guti. La Commissione non esiterebbe un istante a dare il medesimo suggerimento se si trovasse nelle identiche condizioni in cui « era la Commissione idraulica nel 1871 od il Consiglio Superiore « nel 1875 ».

In proposito, occorre rammentare che, iniziando i propri lavori, la prima Commissione del Tevere aveva trovato non soltanto Roma devastata dalla inondazione degli ultimi giorni del 1870, ma l'alveo del Tevere quanto mai irregolare (Fig. 1).

Malgrado l'autorità delle due Commissioni, presiedute dal

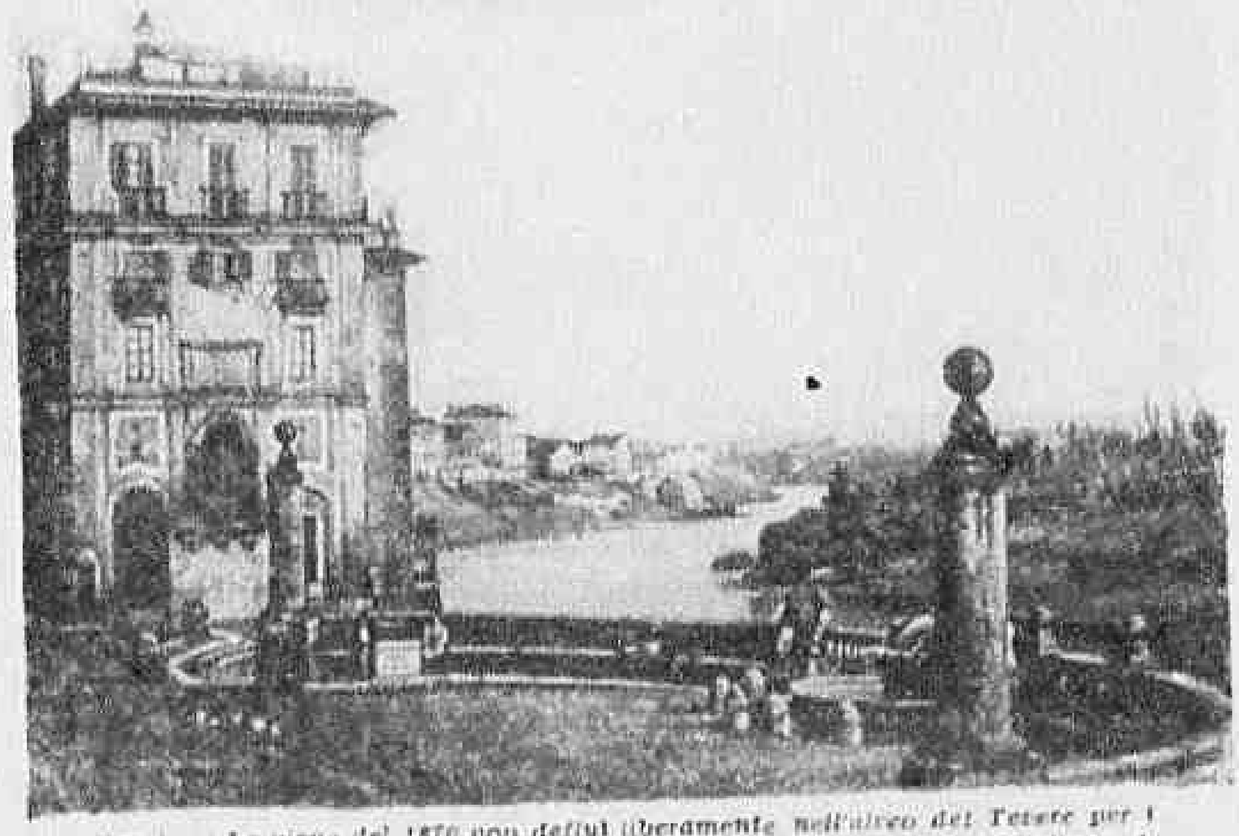

Fig. 1 — *Le piena del 1870 non defluì liberamente nell'alveo del Tevere per i grandi ingombramenti del fondo e delle sponde. La foto riproduce il Porto di Ripetta ed il tratto del fiume immediatamente a monte*

Ing. Carlo Possenti e dal prof. Luigi Cremona, l'Isola Tiberina e gli avanzi di Ponte Rotto non soltanto rimangono, dopo tanti anni e dopo i lavori della Terza Commissione, inizialmente nominata — nel 1938 — dal Cobolli-Gigli e presieduta dall'ing. Pio Calletti, ma rimangono con l'implicito riconoscimento delle ragioni storiche che impongono la divina intangibilità di Roma.

Il Ministro Corla, alla inaugurazione della II Sessione della Commissione per il Piano Regolatore del Tevere, pur rammentando la sistemazione del bacino montano, la produzione di energia elet

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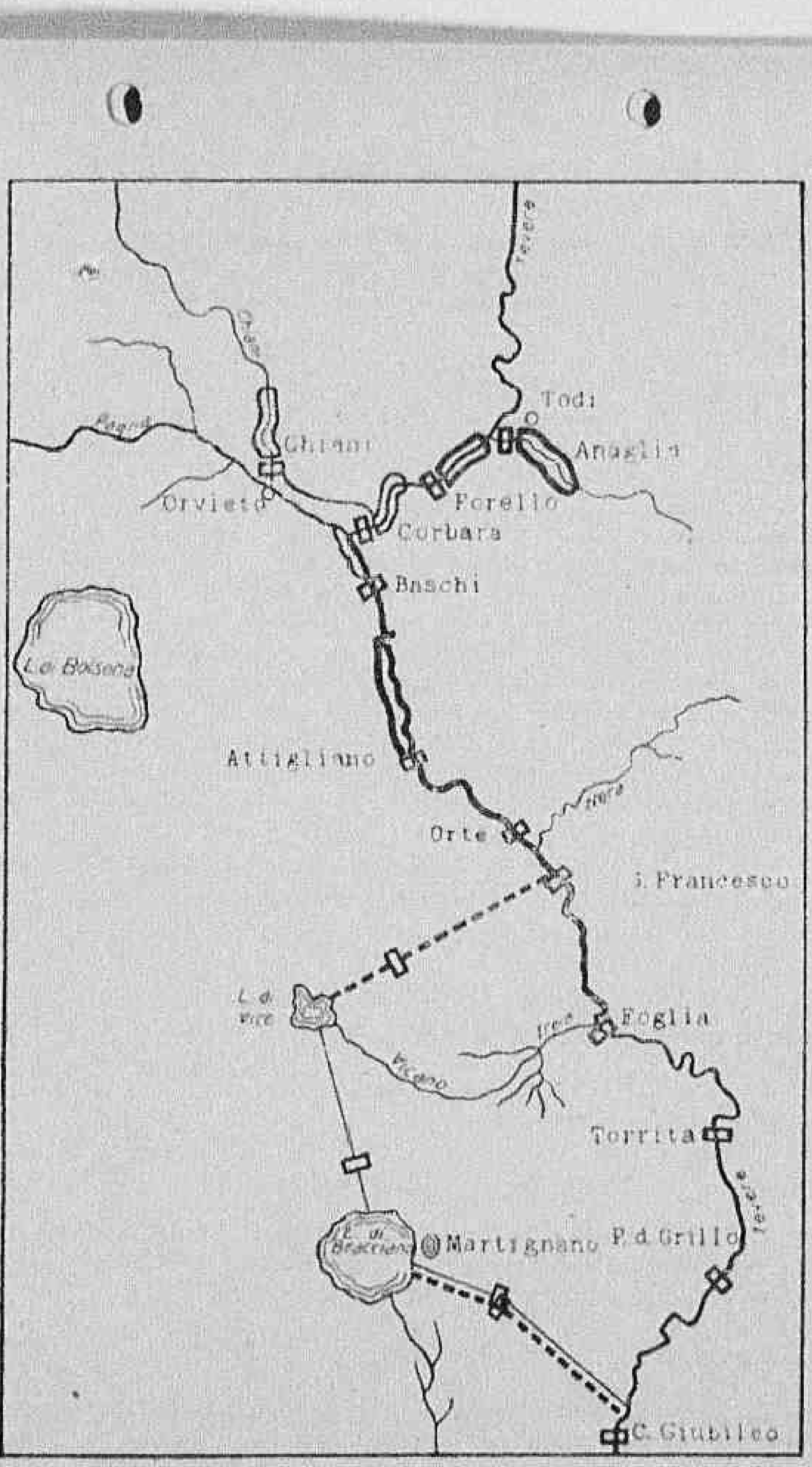

Fig. 2 — Schema della Sezione Idrografica di Roma per la sistemazione ed utilizzazione del Tevere fra Todi e Roma.

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trica dal Medio Tevere in connessione con i Laghi Tiberini; il Porto-Canale di Fiumicino; la irrigazione, affermò che il primo di essi scopo è sempre quello di consolidare la sicurezza di Roma, centro dell'Impero.

I compiti ed i lavori della Terza Commissione del Tevere sono stati molto più vasti di quelli delle due precedenti Commissioni.

Le sue due relazioni, pubblicate nel luglio 1938 e nel gennaio 1942, costituiscono, ora, la maggiore e migliore Monografia sul Tevere.

In confronto delle Commissioni del 1871 e del 1900, la Commissione del 1938-42 ebbe a sua disposizione le preziose pubblicazioni del Servizio Idrografico Italiano, istituito nel 1918 e, più particolarmente, gli Annali Idrologici della Sezione Autonoma del Genio Civile di Roma.

Le relazioni del 1938 e del 1942, sono ricche di pregevoli Memorie Tecniche, contengono i programmi di sviluppo delle opere proposte compresi i lavori portuali di Fiumicino e le varianti all'aero-idroscalo della Magliana, e terminano con le direttive per la sistemazione generale del bacino del Tevere. Per il migliore e maggiore apprezzamento delle importanti indicazioni della Commissione, le direttive possono così raggrupparsi (*Fig. 2*):

— sistemazione del bacino montano del Tevere e del suo alveo a monte di Roma, entro Roma e da Roma al Tirreno;

— utilizzazione del medio Tevere per forza motrice e per usi irrigui;

— prolungamento dei moli di Fiumicino, tenuti distanti 50 metri, e con il molo di sopraflutto sempre più avanzato del molo di sottoflutto.

Per la valorizzazione delle acque, la Commissione indicò il seguente **schema di massima**:

— produzione di circa un miliardo di kilowattore all'anno, mediante i seguenti impianti lungo il Tevere:

1) fra Todi e Orte: centrali a serbatoio sull'Anaglia e sul Chiani; serbatoi sul Tevere con sbarramenti a Forello ed a Corbara; impianti idroelettrici a Baschi, ad Attigliano ed a Orte;

2) fra Orte e Roma: cinque impianti nelle località: Passo S. Francesco, Foglia, Torrita, Ponte del Grillo, Castel Giubileo;

— utilizzazione dei laghi di Vico e di Bracciano: un doppio impianto di sollevamento e di generazione fra il Tevere ed ognuno

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dei due laghi; oppure due impianti in serie (Tevere-Bracciano-Vico); oppure un accoppiamento delle due soluzioni;

— irrigazione: nei laghi di Vico e Bracciano tenere a disposizione le necessarie quantità di acque irrigue, e quando saranno regolati i deflussi invernali del Tevere, irrigare 92.000 Ettari.

A tali direttive è inspirato il progetto 20 maggio 1942-XX del Consorzio Forze Idriche Tevere (Fig. 3), per la sistemazione ed utilizzazione del medio Tevere in connessione con i laghi di Bolsena, Vico e Bracciano, per produzione di energia elettrica, irrigazione e per la navigazione del Tevere fra Orte e Castel Giubileo. Il programma è: creazione nei laghi di una riserva pluriennale di acque corrispondente a 956 milioni di kilowattore da utilizzarsi nell'interesse nazionale in casi di emergenza; produzione annua di poco più di 900 milioni di kilowattore; impianto di potenti centrali idroelettriche di produzione; impianti di sollevamento delle acque nei laghi; irrigazione iniziale di 40.000 e definitiva di 100.000 ettari (Fig. 4).

La regione considerata nel progetto corrisponde al bacino medio occidentale del Tevere ed ai bacini del Marta e dell'Arrone emissari dei laghi di Bolsena e di Bracciano.

Per medio Tevere, deve quindi intendersene il tronco, lungo 180 Km., fra Todi e Castel Giubileo.

I laghi della regione sono: il lago Volsinio; i due laghi Sabatini: Bracciano e Martignano; il lago Cimino o di Vico. Gli emissari dei primi tre laghi defluiscono nel Tirreno ed il solo emissario del lago Cimino defluisce nel Tevere.

Nello schema della Sezione Idrografica e nel progetto sono ben collegati ed utilizzati due sistemi idrografici: il sistema fluviale, il cui centro è Orte, ed il sistema lacuale avente per centro il lago di Vico (Fig. 5).

Ad Orte confluiscono il Tevere, di accentuata natura torrentizia, ed il Nera, di natura molto perenne. Attualmente le loro portate medie annuali sono, rispettivamente, dell'ordine di 80 e di 120 mc./sec., malgrado che la superficie del bacino del Tevere, ad Orte, sia più che doppia della superficie dell'intero bacino del Nera.

La variabilità del Tevere prima di Orte e la relativa invariabilità del Nera, risultano dai loro gradi di perennità, ossia dai loro rapporti fra le portate massima e minima. A 40 Km. a monte della confluenza Tevere-Nera, ossia alla Stazione idrografica di Baschi sul Tevere, il rapporto fu, in media, di 343 negli anni dal 1926 al 1934, mentre per il Nera, nel periodo 1929-1935, alla Stazione idro-

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grafica di Machiagrossa, presso Terni, alla distanza di 32 Km. dalla confluenza, fu di 7 soltanto.

Dalla unione dei due fiumi trae origine il vero corso del Tevere, notevole per il grado di perennità e per i volumi delle acque. A 3 chilometri a valle della confluenza, in località Passo San Francesco, il rapporto tra le portate, massima e minima, del Tevere fu di 32 nel

Fig. 4. — Lago di Martignano la cui profondità di quasi 200 metri permette un notevole invaso di grande importanza per compensare la limitata capacità di invaso del Lago di Bracciano. I due laghi possono ottenersi con una stazione idroelettrica a doppio funzionamento, pompe e turbine.

periodo 1925-35. A Roma fu di 30 durante gli anni dal 1921 al 1935 per quanto il grado di perennità dell'Aniene, a Lunghezza, sia stato di 60 nel periodo 1922-1935.

La diversità idrologica fra l'intero bacino del Nera ed il bacino del Tevere ad Orte, è una delle caratteristiche dell'intero bacino tiberino. Alcune di esse si possono spiegare con la estensione e lo stato del soprastante, altre con la natura del sottosuolo del territorio fra l'Appennino centrale ed il Mar Tirreno.

Fondamentalmente e più completamente, le particolarità del bacino del Tevere risaltano dalle sue imponenti vicende geologiche.

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L'attuale morfologia tiberina derivò dalla saldatura dei bacini di molti degli attuali affluenti del Tevere, inizialmente fra loro indipendenti.

Alcuni milioni di anni fa, il Tevere, il Topino, il Paglia, il Nera, il Velino, l'Aniene, sboccavano nel Tirreno che si insinuava nella terra ferma sin quasi all'Appennino centrale, costituito da rocce più

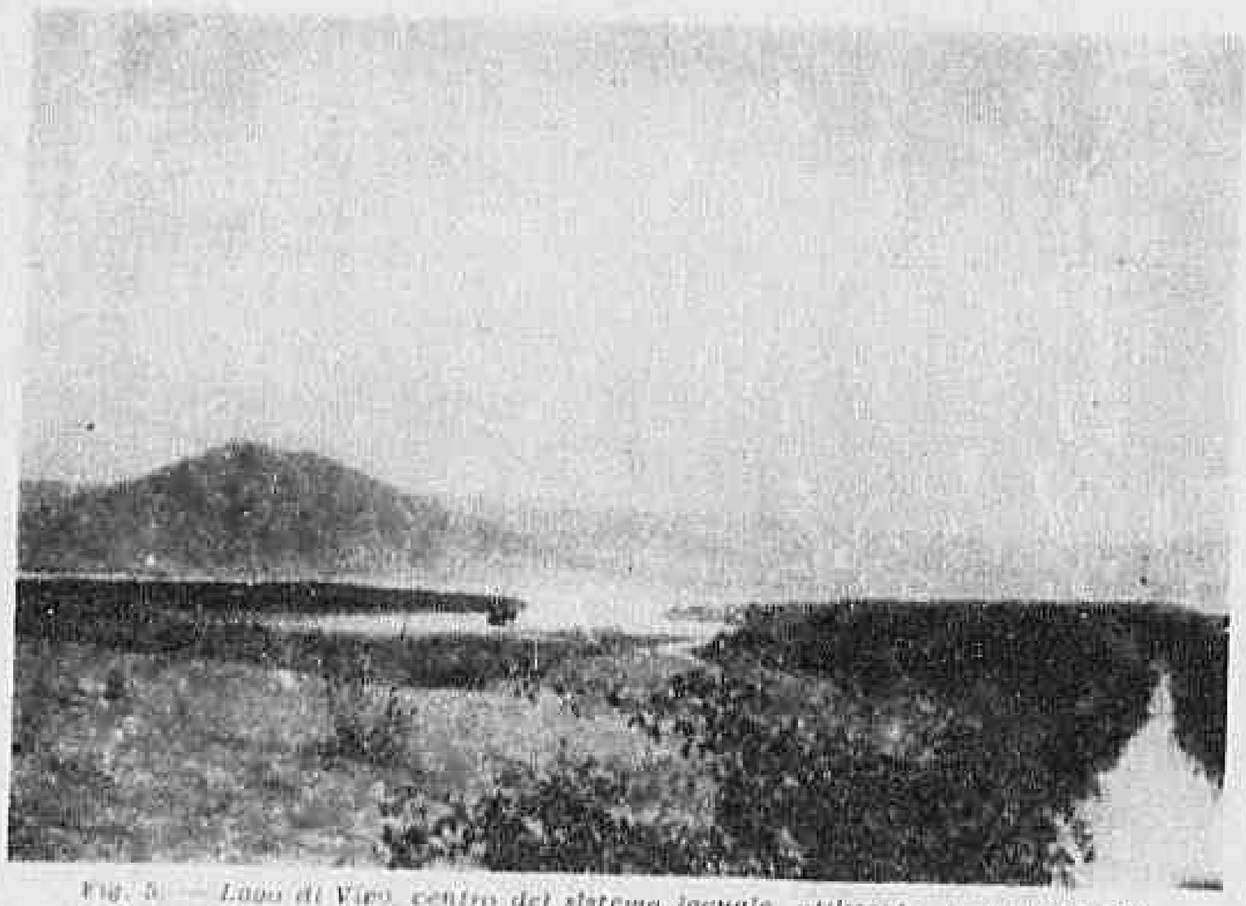

Fig. 5. — Lago di Vico, centro del sistema lacuale utilizzato (caratteristiche dello specchio liquido: altezza sul **mare** *= 510 m., superficie = 12 kmq.)*

antiche e più dure, ricoperte da un manto calcareo di spessore variabile e di diversa permeabilità.

Per sboccare in mare prima delle attuali confluenze Topino-Chiagio e Chiagio-Tevere, il Tevere doveva avere allora, una lunghezza di un centinaio di chilometri, ossia appena 1/4 dell'attuale sviluppo. Lo sbocco diretto del Tevere in mare, rappresentava la prima delle tre fasi del Marinelli sullo sbocco dei fiumi.

Successivamente si costituirono quattro bacini idrografici: il bacino del Nera-Velino; il bacino della Chiana-Valdarno con alcuni laghi ed i fiumi Paglia e Chiani; il bacino di un grande lago con i

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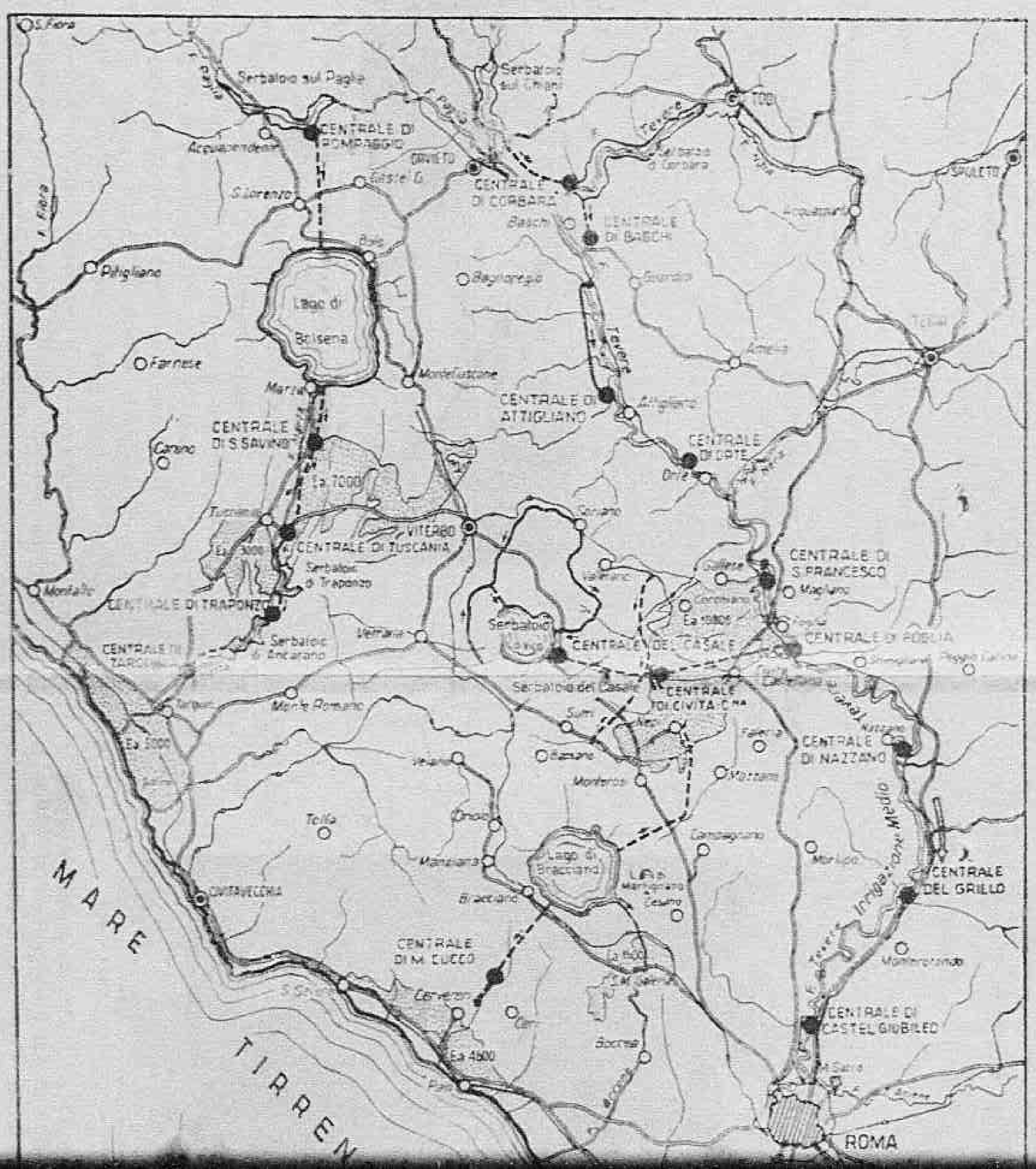
12 000

Tappa Frontella 1500
300



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Corografia generale

Fig. 3. — Piante generale del progetto 26 maggio 1942-XX del Consorzio fra le Utenze Tevere per la valorizzazione delle acque del Medio Tevere in connessione con quelle dei laghi di Bolsena, Vico, Bracciano per energia elettrica, irrigazione e navigazione.

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non ammissari. Tevere, Tepino e Nera: il bacino dell'Aniene ancora sfociante in mare.

Per la lenta azione delle portate solida e liquida dei fiumi, i

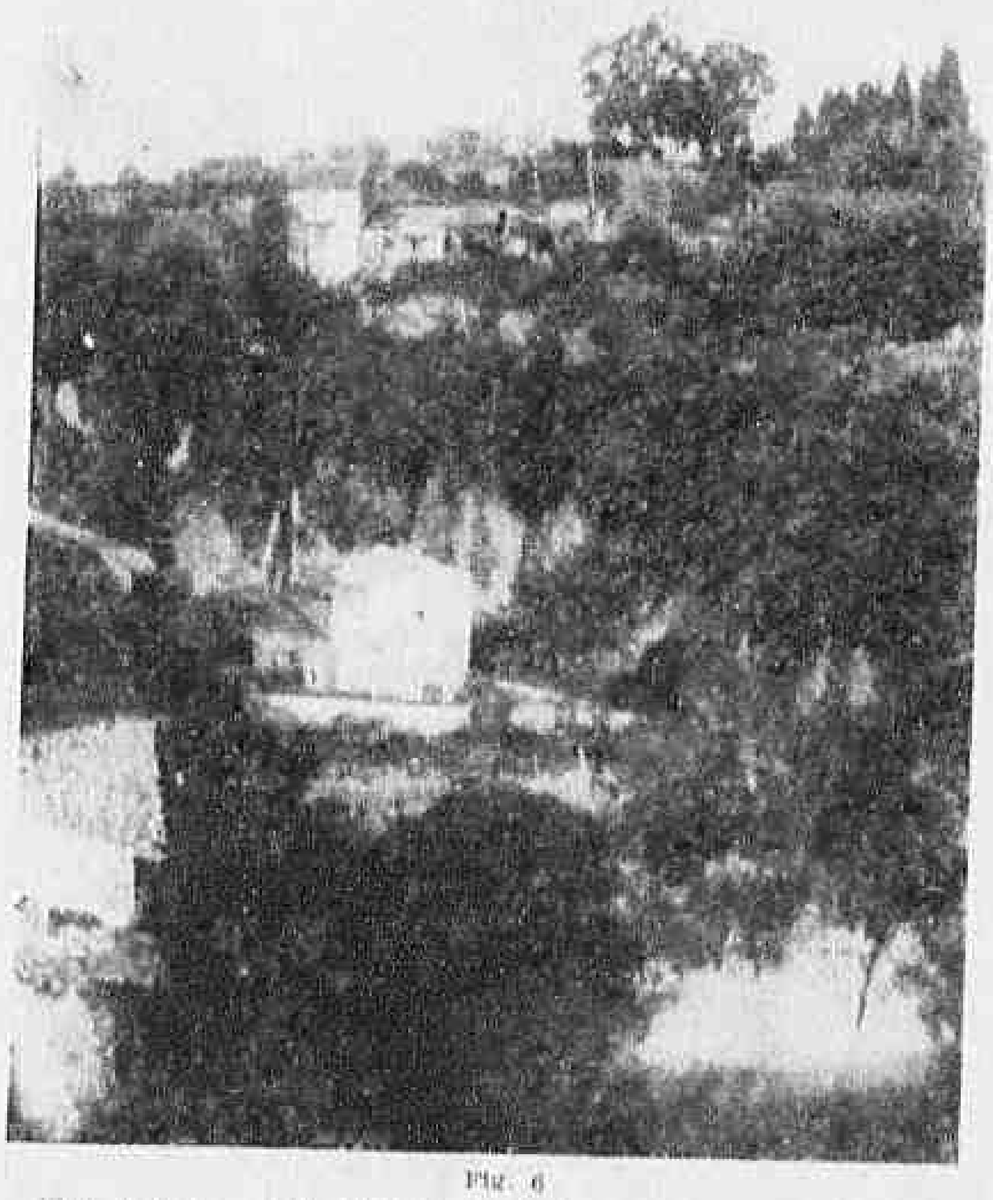

Fig. 6

Fig. 6 e 7 — Foce del torrente Vezza, collocata dal Lugli al Tevere. La sola è stata ripresa sotto ricostruzione. Le pareti della cella sono scomparse, negli alti depositi talvolta derivati dal materiale lavorato dagli antichi coltivatori del gruppo Grotte.

laghi furono colmati, il Tevere si scavò la gola del Forello per immettersi al Paglia, il Nera si scavò la gola di Narni per gettarsi nel Tevere. Restarono i due soli bacini del Tevere e dell'Aniene i quali

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dirante l'ora successiva si sfalderanno definendo un l'annale versante sud-orientale del Vecchio.

Nel versante destro, invece, travolto dalla violenta azione dei vulcani più orientali della lunga catena dei vulcani a fianco, si

formarono gli attuali laghi craterici di Vico, Bolsena, Mezzano e Bracciano. Inoltre il bacino sedimentario del Tevere fu ricoperto, in gran parte, da materiali vulcanici che dovettero, sotto l'azione degli

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aperte atmosferiche degli strati prevalentemente impermeabili (Figura 8).

Viene così a completarsi l'annale morfologia del bacino del Tevere le cui principali caratteristiche sono le seguenti:

— longitudinalmente la dissimmetria, trasversalmente la variabilità della larghezza la quale si riduce a qualche chilometro alla

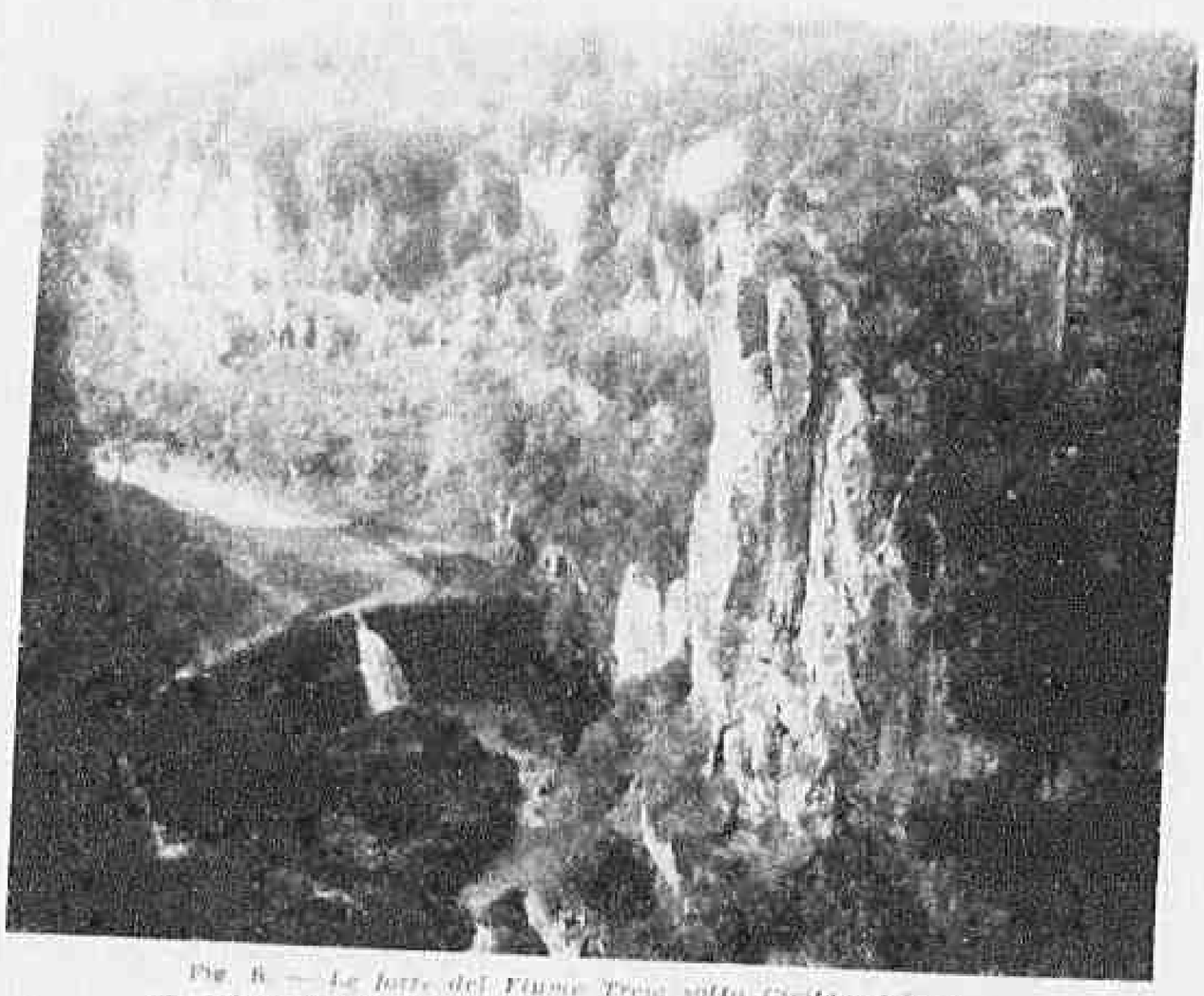

Fig. 8. — *La forra del Fiume Treia nella Civitacastellana ove i depositi vulcanici del Cimino assumono spessore massimo.*

strozzatura della foce; idraulicamente alcuni laghi in destra e nessuno in sinistra.

Tali caratteristiche si spiegano con i precedenti cenni geologici che aiutano anche a chiarire l'idrologia del Tevere (Fig. 9).

Il bacino del Tevere è dominato dal gruppo degli antichi vulcani Arco e Cimino. Nel gruppo e tra le sue vette, scaglionate fra 800 e 1200 metri, è incastonato il lago di Vico con il suo specchio liquido a 510 m. s.m., più alto di 280 metri del lago di Bolsena, di

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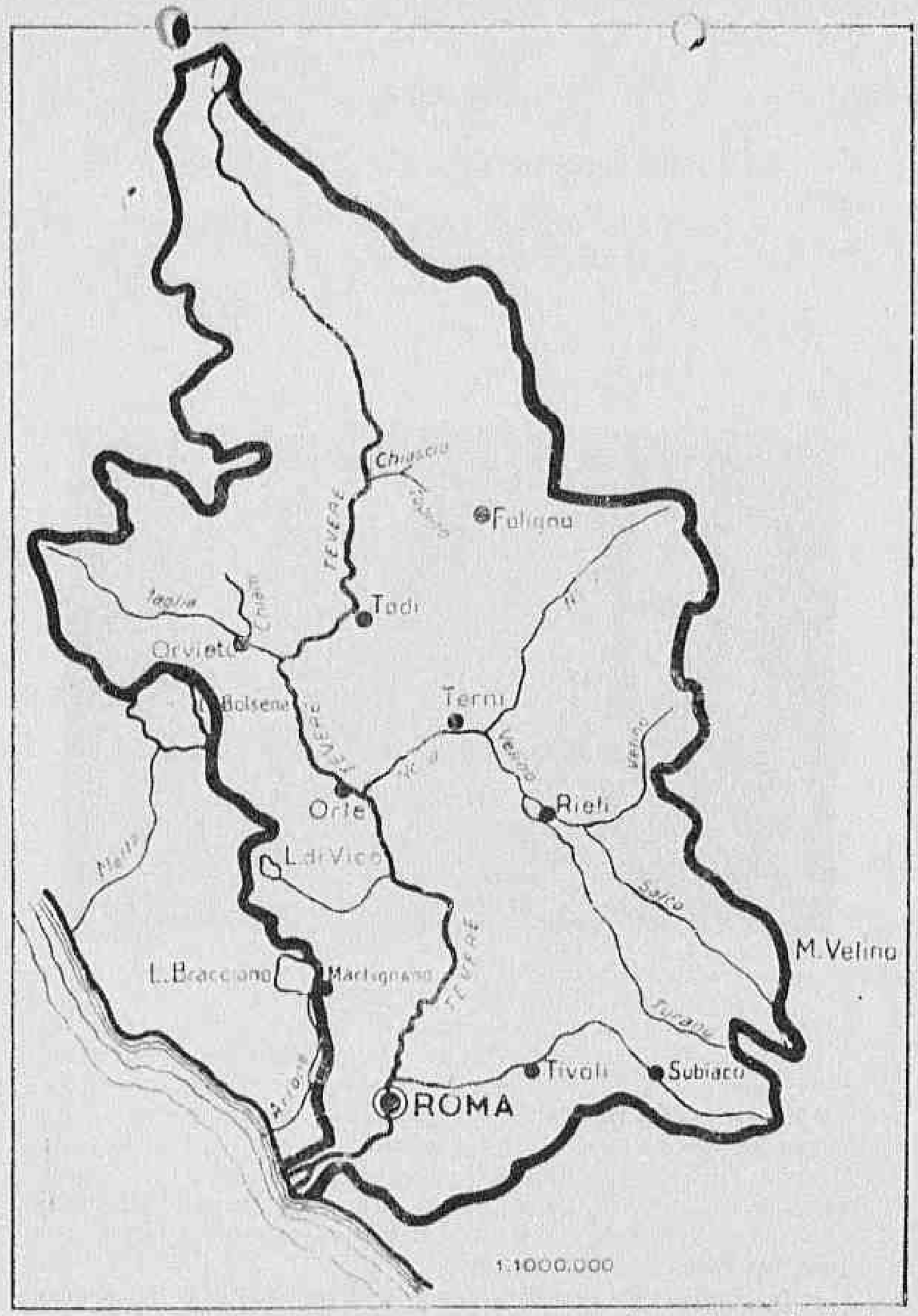

Fig. 9. — *Caratteristiche della pianta generale del Tevere: 1) alla confluenza del Chiascio nel Tevere la valle si stringe a 50 km. e si allarga successivamente, sino a raggiungere 125 km. fra le sorgenti dei fiumi Paglia e Nera, ad Orte si riduce a 70 km.; si riallarga poi a 95 km. fra il lago di Martignano e le sorgenti dell'Aniene; da questa linea, la valle va gradatamente restringendosi a 30 km. a metà distanza fra Roma ed il Tirreno; negli ultimi km. del Tevere la valle si strozza a circa 5 km.; 2) dall'asta del Fiume, la linea di displuvio presenta distanze minime e massime di 12-15 km. e di 60 km. (sorgenti del Paglia) nel versante occidentale e di 35 e di 70 km. nel versante orientale; 3) i laghi di Bolsena, di Vico e di Bracciano sono equidistanti dall'asta del Tevere (20 km.).*

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383 metri del lago di Marrignano e di 389 metri del lago di Bracciano.

Il lago di Vico è il più alto lago naturale italiano, esclusone tutta dei piccolissimi laghi morenici delle Alpi.

Il Monte Cimino, con la sua massima quota di 1053 m.s.m. è sovrastato soltanto di duecento metri alle sorgenti del Tevere (Le Vene: 1268 m.s.m.). La vetta del Cimino è sormontata da un magnifico bosco di faggi (Fig. 10).

Fig. 10. — Il bosco a faggi con il quale culmina il Cimino, derivazione della foresta ardiocisalpina Hercynia, come attraversata nel 310 a. C. dal Consolo Italiano per la guerra contro l'Etruria.

Il versante orientale del Tevere, costituito dai calcari addossati all'Appennino, è prevalentemente permeabile, quello occidentale è prevalentemente impermeabile, rimanendo però inteso che non tutti i terreni permeabili sono di natura calcarea, né tutti quelli impermeabili sono di origine vulcanica. Sono permeabilissime anche le lave, oltre a molti prodotti vulcanici, alcune formazioni del pliocene: argille turchine, sabbie gialle, ecc.

In sinistra del Tevere si hanno i bacini del Nera, del Velino, del Farfa, dell'Aniene e di altri minori affluenti del Tevere.

A destra, il grado di impermeabilità è assai variabile: dal 44 %

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per il Topino, affluente del Chiagio, al 100 % per il Chiani, affluente del Paglia.

Alla confluenza Tevere-Nera, il grado di impermeabilità del bacino del Tevere ed il grado di permeabilità del bacino del Nera sono quasi uguali: 82 % ed 85 %.

Dopo la confluenza e sino a Roma, il bacino del Tevere è costituito per 1/3 da terreni permeabili e per 2/3 da terreni impermeabili.

I regimi idrici derivano dall'afflusso meteorico (pioggia, neve, grandine, ecc.) e dalle caratteristiche del suolo e del sottosuolo. Una buona parte della pioggia è perduta per evaporazione. Un'altra parte, sui terreni impermeabili, si raccoglie e defluisce in superficie molto rapidamente e quindi con piccola utilizzazione sia irrigua, sia per produzione di energia oppure per la navigazione.

I terreni permeabili, invece, oltre il deflusso superficiale, ne originano degli altri sotterranei, che, nel caso del Velino e del Nera, assumono l'aspetto e l'importanza di veri e grandi corsi d'acqua.

La penetrazione nel suolo può raggiungere persino il 50-60 % della pioggia caduta e dell'acqua penetrata ne sbocca, talvolta, soltanto una parte nel bacino di origine mentre l'altra parte sbocca in altri bacini idrografici oppure tutta l'acqua penetrata sbocca fuori del proprio bacino geografico.

Il bilancio idrologico dei bacini in gran parte permeabili oppure del tutto permeabili, è quindi alquanto difficile. Si deve tener conto non soltanto dello spazio, ma anche del tempo.

L'acqua può penetrare in profondità nei terreni permeabili e sboccare ad altezze e località ben diverse da quelle di penetrazione e ciò dopo un tempo più o meno lungo, in dipendenza della natura e delle dimensioni del mezzo attraversato. Il tempo, spesso, è più lungo dei dodici mesi dell'anno solare o dell'anno idrologico che va da ottobre a settembre.

Nei periodi di penetrazione, il deflusso nel corso d'acqua è minore dell'afflusso meteorico sul bacino ed il rapporto fra deflusso ed afflusso, ossia il coefficiente di deflusso, è poco o molto minore dell'unità; nei periodi di restituzione delle acque i coefficienti sono maggiori dell'unità e qualche volta molto maggiori.

Onde valutare l'entità di queste due serie di periodi, si accennano due esempi di coefficienti di deflusso: uno piccolo e l'altro molto grande.

Il primo è relativo all'ottobre 1938 ed a Macchiagrossa (Terni) ove il bacino del Nera ha una permeabilità dell'85 %. In quel mese,

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il coefficiente di deflusso fu di 0,30 perchè l'afflusso fu di 168 m/m ed il deflusso di 60 m/m. La differenza di 108 m/m rappresenta la somma delle altezze dell'acqua evaporata e dell'acqua penetrata nei calcari. L'acqua evaporata è stato possibile calcolarla in 29 m/m. La penetrazione risulta quindi di 79 m/m, pari al 47 % della pioggia caduta ed a 317 milioni di mc. di acqua, i quali, onde apprezzare adeguatamente la permeabilità dei calcari, li ho riferiti alle unità sia di tempo sia di superficie permeabile del bacino: eseguiti i calcoli è risultata una penetrazione di 34 litri al secondo per Kmq. di sola superficie permeabile.

Il secondo esempio, scelto per il suo alto coefficiente di deflusso, si riferisce al marzo 1938 ed al Ponte Nuovo, a Rieti, ove il Velino ha una permeabilità del 55 %; in quel mese il coefficiente fu di 8,16; l'afflusso meteorico fu di soli 16,4 milioni di mc. contro 133,6 milioni di mc. di deflusso; la differenza, di 117,2 milioni di mc., defluì dai calcari. Il riferimento al Kmq. di bacino permeabile, in questo secondo caso, non ha senso perchè la superficie del bacino scolante può essere assai diversa da quella topografica, ma pure, per orientamento, è stato fatto il calcolo ottenendo 57 litri per secondo e per Kmq. di superfice permeabile.

Tale importantissimo funzionamento di invaso e di svaso delle roccie permeabili è paragonabile al comportamento dei serbatoi artificiali, dei laghi naturali, dei ghiacciai. In ognuno di questi casi vengono conservati, in alcuni periodi, delle masse d'acqua che vengono poi smaltite in altri periodi di tempo. Le modalità della restituzione sono assai diverse in ognuno dei tre casi, ma il principio della conservazione idrica rimane inalterato.

Nel bacino del Velino, al naturale accumulamento idrico delle roccie permeabili, si è aggiunto l'invaso artificiale dei serbatoi costruiti dalla Società Terni, raggiungendo così un'alta utilizzazione dei bacini del Nera e del Velino.

Con il funzionamento di invaso e dello svaso delle acque, si ottiene una doppia utilizzazione idrica: una, immediata e diretta, per l'irrigazione; l'altra, differita ed indiretta, per la produzione di energia elettrica.

Le favorevoli condizioni tanto di accumulazione dell'acqua, quanto del salto motore e della portata, spiegano la priorità delle notevolissime utilizzazioni del Velino e del Nera.

Analoghe condizioni favorirono le applicazioni delle acque dell'Aniene, il cui bacino è costituito dai soliti calcari adagiati sulle

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antiche roccie dell'Appennino e che presenta un coefficiente di permeabilità del 100 % sino a Subiaco e ne ha uno del 76 % a Lunghezza, a 25 Km. dalla confluenza Aniene-Tevere.

Anche i minori bacini calcarei fra le foci del Nera e dell'Aniene furono soddisfacentemente utilizzati.

Può quindi concludersi che tutto il versante orientale del Tevere, per le sue felici condizioni geologiche e di afflusso è stato, presto e bene, abbondantemente utilizzato nella sua ricchezza idrica

Il versante occidentale presenta pure notevoli risorse purchè si tenga conto dei laghi che esso contiene e si costituisca un solo sistema elettrico fra le energie idriche dei fiumi e quelle dei laghi.

In detto versante, invece della capacità di invaso dei terreni permeabili, si hanno i possibili invasi nei laghi di Bolsena, Vico, Martignano e Bracciano, la cui superficie complessiva è di 187,5 Kmq., mentre il volume totale delle acque contenute nei laghi è dell'ordine di 12 miliardi di mc.

Queste cifre orientano circa il potere invasante dei quattro laghi: tenendo conto che si tratta di antichi crateri vulcanici che vanno allargandosi verso l'alto, si può ritenere che per una sopraelevazione di 5 metri si abbia una sezione media complessiva di almeno 200 Kmq. e quindi un volume di invaso di un miliardo di mc.

I dodici miliardi, prevalentemente contenuti nei laghi di Bolsena e di Bracciano, dimostrano la possibilità di uno svaso.

Il Consorzio Forze Idriche Tevere, prevede infatti di prelevare dal lago di Bolsena un miliardo di mc. e dal lago di Bracciano 300 mila mc., e prevede inoltre, per ora, un invaso massimo nel lago di Vico di 600 mila mc., ai quali corrisponde un sopraelevamento del piano liquido attuale di m. 55, ma il cratere dello spento vulcano può sistemarsi per un invaso molto superiore anche oltre il doppio di quanto ora previsto.

La capacità di invaso del bacino occidentale del Tevere, sarà aumentata dai futuri serbatoi sul Chiani e sul Tevere, analogamente a quanto è stato fatto nel bacino del Velino con i serbatoi Salto-Turano, con il lago di Piediluco sopraelevato a serbatoio, ecc.

La struttura geologica permette e consiglia la costruzione dei serbatoi sulla Naja, sul Chiani e sul Tevere: i terreni sono impermeabili, le variazioni di portata dei fiumi notevoli e rapide, il rapporto fra le portate di piena e di magra del Tevere è elevatissimo.

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I serbatoi, per la saldezza e la impermeabilità del fondo e delle spalle, risulteranno di buona tenuta. Le loro capacità sono state calcolate in modo da regolarizzare anche le portate del Tevere da Todi al mare, con conseguente vantaggio delle irrigazioni, della produzione di energia elettrica e della navigabilità del Tevere. L'accumulo delle acque alte e la graduale loro erogazione in periodi di magra,

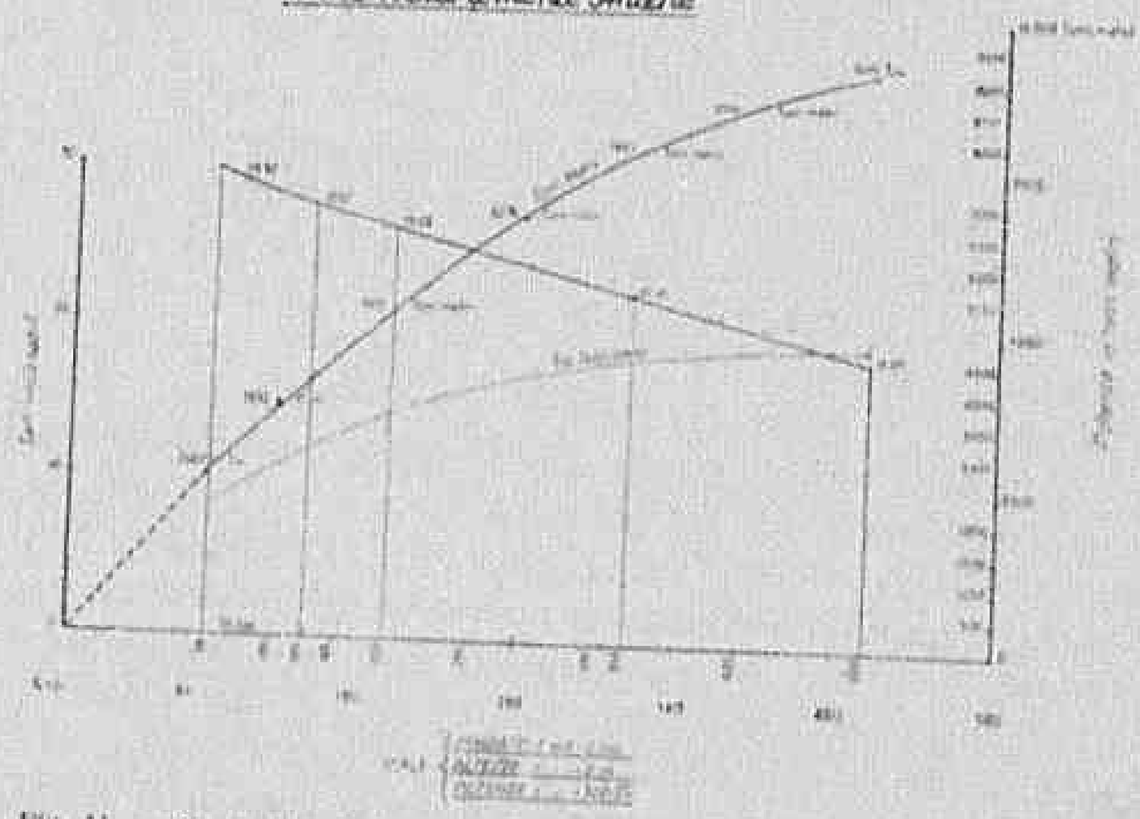

Fig. 11. — *Variazione della potenza complessiva* utile del Tevere da Orte a Castelgiubileo al variare della portata. la potenza è espressa in tonnellate-metri; aumentando la portata diminuisce il salto motore; la potenza aumenta sino alla portata di 250 metri cubi-secondo che risulta la più conveniente per la trasformazione della potenza idrica in potenza elettrica

ridurrà notevolmente il rapporto fra le portate massima e minima non soltanto del Chiani, ma anche del Tevere fra Baschi ed Orte

Da Orte a Castelgiubileo, il Tevere assumerà l'aspetto a scala liquida caratteristica dei fiumi sistemati a piccoli gradini e con immediata restituzione delle acque. Ogni gradino è creato da un attraversamento del fiume costituito dall'edificio delle paratoie, dalla conca e dalla centrale idro-elettrica. Conseguentemente ogni gradino rappresenta il dislivello di navigazione, il salto motore utilizzato ed anche, al piano superiore, il livello di derivazione delle acque irrigue

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Società Laziale Irrigazioni - Roma

Diagramma schematico degli sbarramenti e dei rigurgiti del Tevere

1936 XIV

Quote dei piani di campagna	SBARRAMENTI				
	I	II	III	IV	V
m s.m. sponda destra	17.90	23.00	30.94	41.60	49.00
" " sponda sinistra	20.40	24.80	40.00	45.70	61.47
m sullo 0 dell'idrom. di Ripetta sponda destra	10.94	17.56	30.98	34.84	38.31
" " sponda sinistra	13.44	18.36	39.85	38.94	40.54

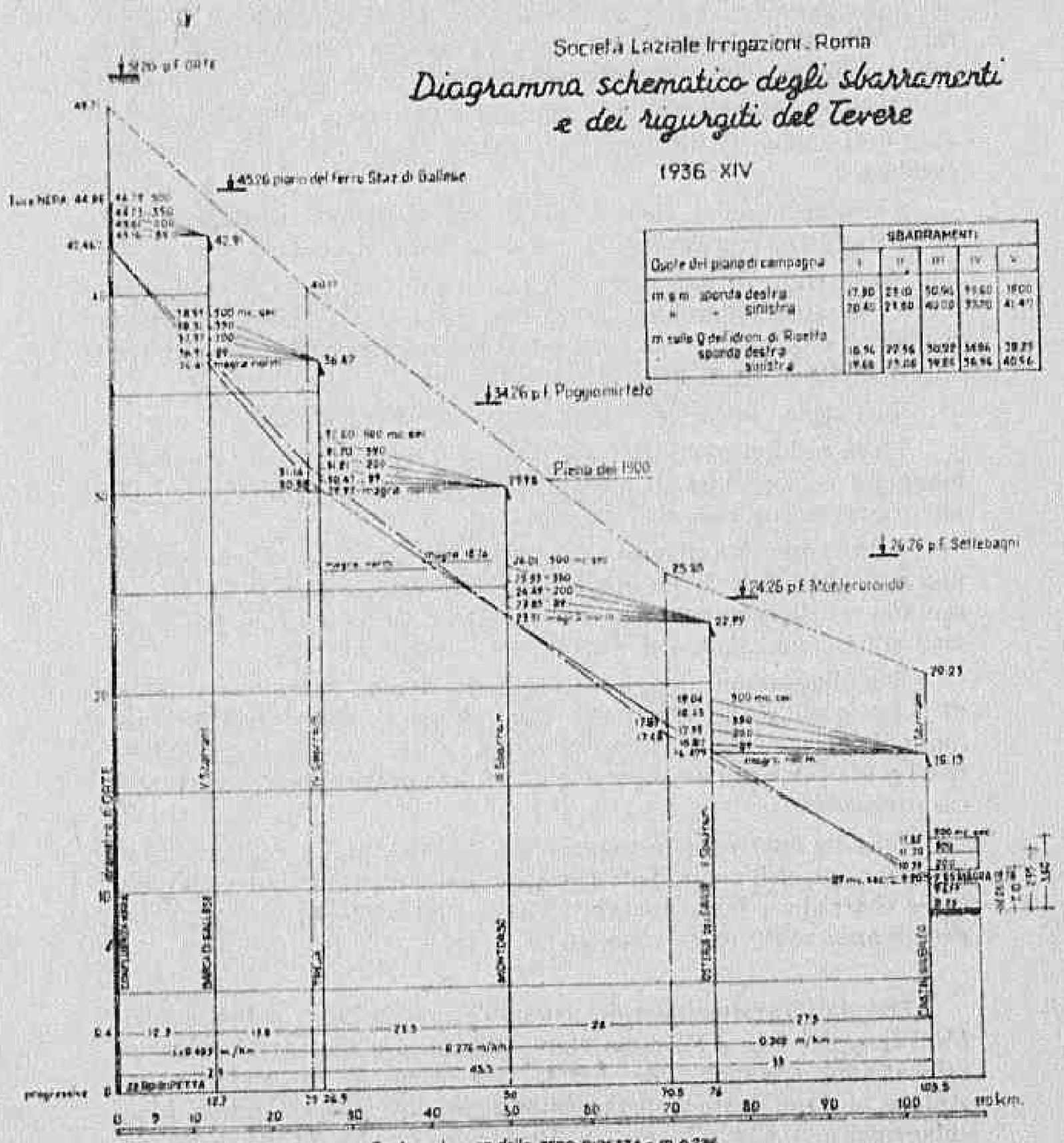

Fig. 12. — Schema sul pelo liquido del Tevere da Orte a Castelgiubileo con 5 sbarramenti ed i relativi rigurgiti per diverse portate.

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In queste sistemazioni il corpo delle opere può dirsi immerso nel fiume regolarizzato e deve essere di tali proporzioni da assicurare i massimi rendimenti in acqua ed energia elettrica e da escludere qualunque danno delle opere a valle.

Per le ragioni storiche accennate in principio, nel caso del Tevere e di Roma, l'esclusione di qualsiasi danno non può essere che assoluta.

Durante le piene, tutto il Tevere dovrà defluire liberamente ed in tutti gli attraversamenti, nel suo normale alveo di piena.

Al di sotto di una certa portata, le così dette acque medie del Tevere si suddivideranno fra quelle che continueranno a defluire nell'alveo e quelle che saranno sopraelevate per creare i gradini in corrispondenza degli attraversamenti.

In magra, tutta l'acqua potrà essere sopraelevata.

Nella suddivisione delle acque medie è da rammentare che tanto maggiore è la portata di un corso d'acqua, tanto minore è il salto motore creato da uno sbarramento.

Allo scopo di rendere più evidenti i concetti fondamentali di una scala liquida e di un attraversamento per forza motrice si presentano sei diagrammi relativi al Tevere e ad alcuni miei studi iniziali sulla connessione del Tevere con i Laghi Tiberini.

Due diagrammi, fgg. 11 e 12, si riferiscono al tratto del fiume da Castelgiubileo ad Orte; uno rappresenta la curva delle potenze totali al variare della portata derivata e l'altro il profilo longitudinale del Tevere con i cinque sbarramenti, ed i rigurgiti per alcune portate caratteristiche.

Gli altri quattro diagrammi (figg. 13, 14, 15, 16) rappresentano le variazioni, nell'anno, delle portate e dei salti come pure delle potenze elettriche e della energia all'attraversamento di Castelgiubileo per gli anni 1926, 1929, 1930, 1932.

Dai dati caratteristici dei corsi d'acqua italiani, pubblicati dal Ministero dei LL. PP., sono state dedotte, per il 1935, le seguenti utilizzazioni specifiche per forza motrice nel bacino del Tevere: Aniene, a Lunghezza = 0,337 kilowattore per mq.; Nera, a Macchiagrossa = 0,325; Tevere, a Roma = 0,11. Le utilizzazioni dei bacini permeabili dell'Aniene e del Nera erano quindi dello stesso ordine e di valore triplo della utilizzazione complessiva del Tevere a Roma.

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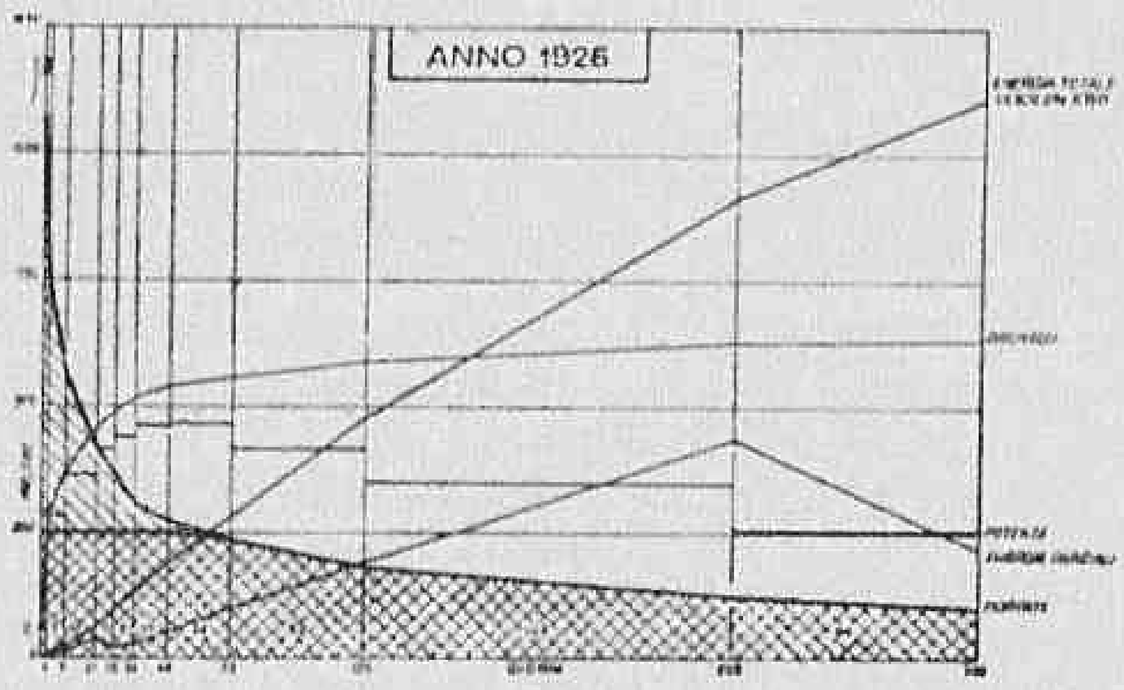

Fig. 13

Figg. 13, 14, 15, 16. — *Diagrammi teorici della potenza media e della energia elettrica a Cantelgiubileo per alcuni anni di diverse caratteristiche idrologiche. La curva di durata delle portate, nell'anno, è la fondamentale, se ovono le spezzate del salto, della potenza, delle energie elettriche: parziale e totale. Le portate maggiori di 250 mc. sec. non sono utilizzate. Alle alte portate corrispondono piccoli salti e troppo bassi rendimenti delle turbine e del macchinario elettrico. Le portate massime, di piena, obbligano alla sospensione di esercizio delle Centrali idroelettriche.*

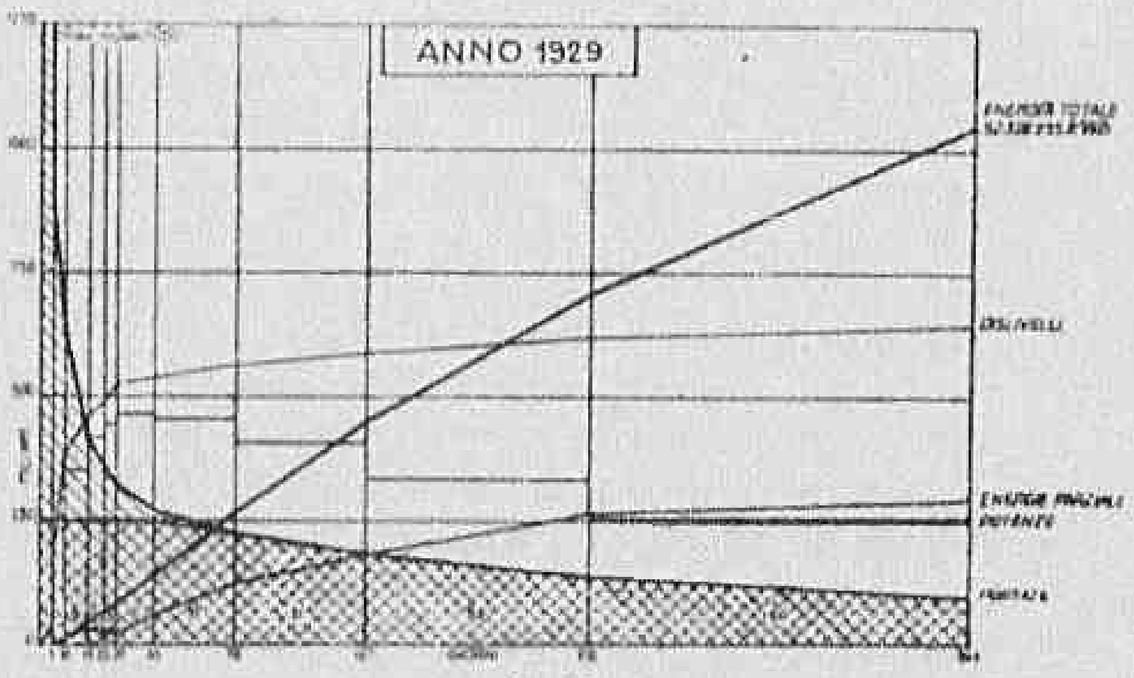

Fig. 14

Per confronto si esporranno le corrispondenti cifre per l'Adda: al Ponte di Lecco = 0,28 kilowattore per mq.: a Pizzighettone = 0,3

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Queste utilizzazioni sono inferiori del 10 % almeno a quelle del Nera e dell'Aniene.

Dal 1935 ad oggi questi coefficienti sono tutti aumentati e, forse, in maggior proporzione per il bacino del Nera, sia in dipendenza dei nuovi impianti, sia per il migliore esercizio degli impianti antecedenti.

La futura utilizzazione del medio Tevere in connessione con i laghi, porterà a tre miliardi di kilowattore all'anno la produzione idro-elettrica del bacino del Tevere.

Relativamente si avranno ancora migliori risultati per la irrigazione.

Sempre nel 1935, il bacino del Po, a Revere, aveva un Kmq. irrigato su 6,65 Kmq di superficie; i dati per il Tevere, allora non pubblicati, erano, comunque, molto minori. La diminuzione è, in generale, giustificata dalla natura geologica e dalle dimensioni dei due bacini. Tuttavia, le opere accennate precedentemente, potranno portare ad almeno 100.000 ettari la superficie irrigata, entro e fuori il bacino del Tevere, con le acque del fiume e giungere ad irrigare un Kmq con una superficie scolante di 16,5 Kmq. La disponibilità delle acque irrigue, durante i periodi appropriati, sarà assicurata da un notevole aumento della portata di magra normale del Tevere a Roma, dovuto sia alle previste opere di invaso nei laghi naturali e nei serbatoi artificiali, sia alle migliorate condizioni di deflusso del Tevere che si avranno a partire dalla confluenza Nera-Tevere.

Per quanto la irrigazione non restituisca la totalità delle acque ad essa destinate, la molto migliorata economia idraulica che si avrà nel dopo guerra nel bacino del Tevere, metterà a disposizione della navigazione fluviale da Orte a Roma e da Roma a Fiumicino, non soltanto tutta l'acqua motrice, deviata nelle centrali elettriche, e quella adoperata per la manovra delle conche, ma anche, indipendentemente dalle restituzioni dei terreni irrigati, l'acqua risparmiata nella evaporazione per effetto della maggiore freschezza e della umidità dei terreni irrigati.

La navigazione del Tevere è prevista, per ora, suddivisa in due tratti.

Il primo, dal Tirreno al Porto Fluviale di S. Paolo: il traffico sarà migliorato per le ragioni già svolte, ma soprattutto per le opere previste nel porto di Fiumicino. L'esercizio della linea fluviale con-

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tinuerà ad essere di apprezzabile sussidio alla ferrovia elettrica Fiumicino-Roma.

Il secondo tronco navigabile del Tevere sarà compreso tra Ca-

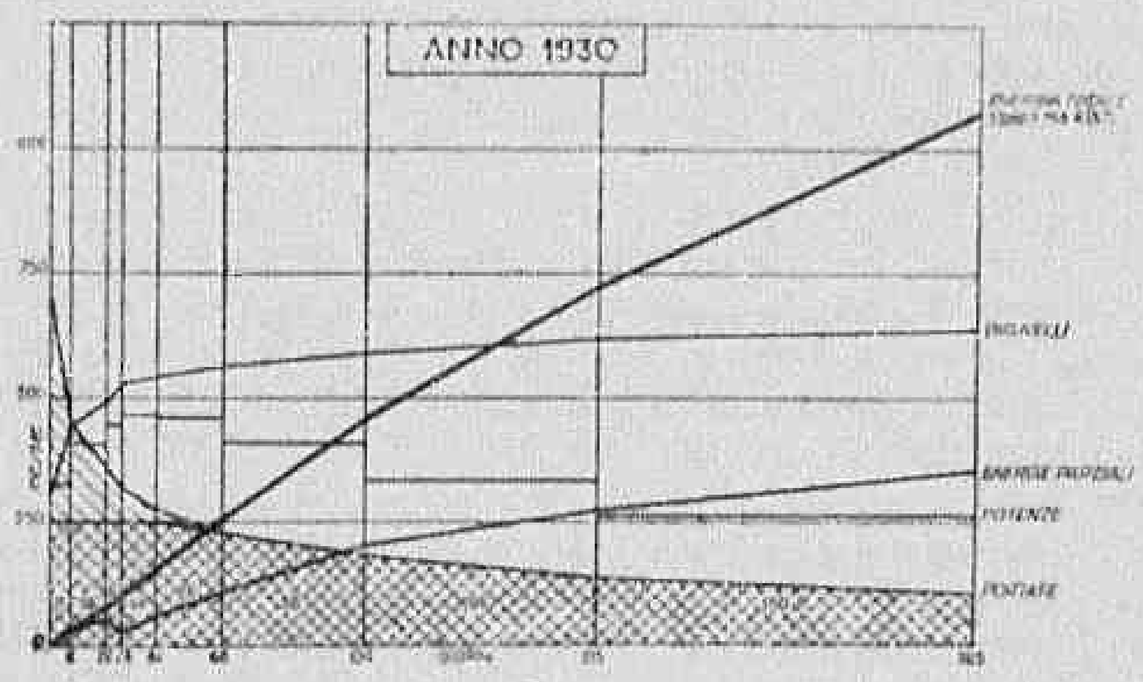

Fig. 16

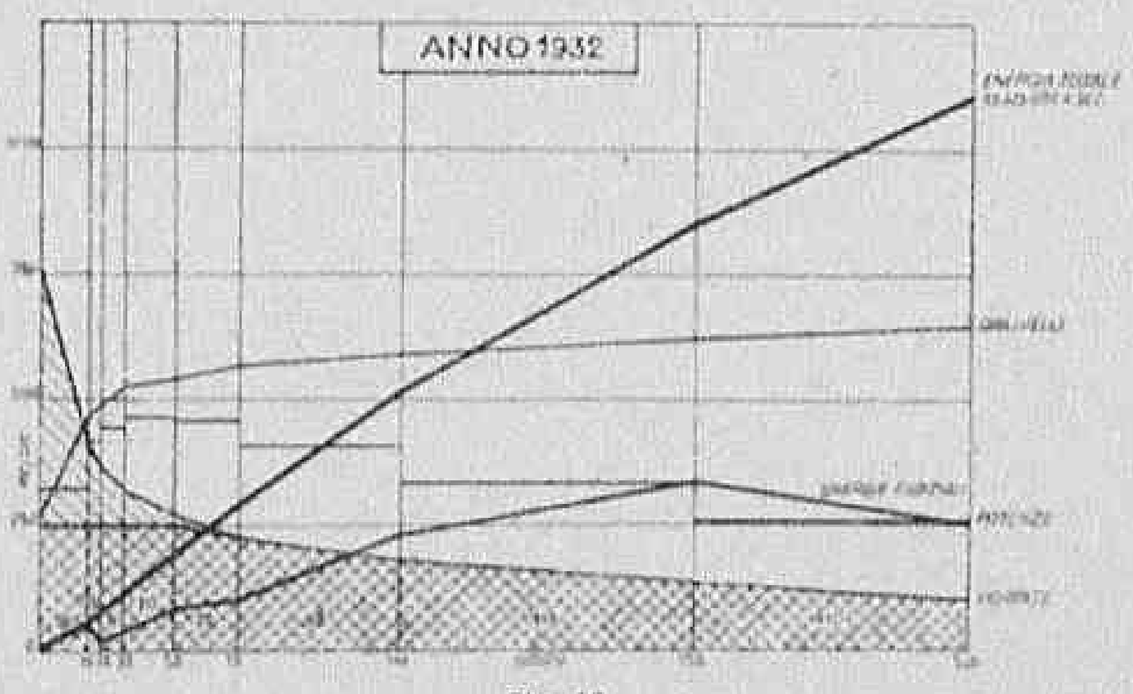

Fig. 16

stelgiubileo ed Orte e dovrebbe provvedere — anche in ausilio alle linee ferroviarie — al movimento dei terreni bonificati, movimento che l'Ufficio speciale del Genio Civile per il Tevere ed Agro Romano

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prevedeva, nel 1910, in quattro tonnellate all'anno per ogni ettaro bonificato e che sarà, in futuro, almeno raddoppiato.

Dovrà poi provvedersi alla congiunzione dei due tratti del Tevere resi navigabili, a valle ed a monte di Roma; le soluzioni dell'arduo quesito sono assai diverse fra loro e le opere da eseguirsi potranno delinearsi a seguito della trasformazione del medio Tevere e con lo sviluppo degli studi per collegare il Tirreno al corso del Tevere a monte di Roma.

La utilizzazione del medio Tevere e dei Laghi Tiberini, per la energia elettrica che metterà a disposizione dell'Italia Centrale, per la possibilità di irrigare vasti territori e di migliorare la navigazione dal Tirreno a Roma e creare quella da Roma ad Orte, appare assolutamente necessaria al raggiungimento delle finalità della legge 5 dicembre 1941-XX n. 1572, sul decentramento degli stabilimenti industriali.

Lo sviluppo industriale, il grande aumento della produzione agricola ed il ripopolamento della regione fra il bacino del Tevere ed il Tirreno, assicureranno nei secoli la grandezza e la eternità della nostra Roma imperiale che noi ci auguriamo sempre più grande.

HYDRAULIQUE

Le Tibre et les lacs du Haut et Moyen Lazio

par l'Ing. **REMO CATANI**

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GRENOBLE
ÉDITIONS B. ARTHAUD

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Le Tibre et les lacs du Haut et Moyen Lazio

par l'Ing. REMO CATANI

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GRENOBLE
ÉDITIONS B. ARTHAUD
23, Grande-Rue, 23
—
1937

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HYDRAULIQUE

Le Tibre et les lacs du Haut et Moyen Lazzio

par l'Ing. REMO CATANI

Installation d'intégration de l'énergie pour l'utilisation des eaux du Tibre et des lacs de Bracciano, Martignano et Vico

---

I. — *Avant-propos :*

Une solution d'ensemble, pour le développement démographique de Rome, la navigabilité du Tibre, la bonification intégrale du haut et moyen Lazio et l'utilisation des eaux de toute la région, fut rendue possible seulement après l'élaboration du programme fasciste pour la revalorisation de la terre.

Le Conseil des Ministres a approuvé, le 29 juillet VI (1928), les lignes générales de la loi sur la bonification intégrale, connue par la suite sous le nom de « Loi Mussolini ».

Le projet qui s'y rapporte fut présenté aux autorités supérieures les premiers jours de l'année 1929, VII.

Pour être brefs, nous n'en exposerons que très succinctement seulement les ouvrages principaux.

II. — *Multiplicité et intégralité des buts visés :*

Après guerre, en général, tous les Etats ont poursuivi une politique de grands travaux dont les buts sont multiples et variés, mais chacun d'eux tendait au maximum d'intégralité.

Ainsi, il est difficile de trouver un projet hydraulique important, qui ait résolu la seule question de la navigabilité d'un cours d'eau, ou seulement l'irrigation d'une région même très vaste, ou bien uniquement la question de la production d'énergie électrique, ou enfin seulement l'approvisionnement en eau d'une ville ou d'une région.

En général, on a résolu, à la fois, au moins deux de ces problèmes. Souvent même les quatre. Un exemple typique et imposant en est le barrage Hoover : avec ses 800 [illegible]

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Une solution d'ensemble, pour le développement démographique de Rome, la navigabilité du Tibre, la bonification intégrale du haut et moyen Lazio et l'utilisation des eaux de toute la région, fut rendue possible seulement après l'élaboration du programme fasciste pour la revalorisation de la terre.

Le Conseil des Ministres a approuvé, le 29 juillet VI (1928), les lignes générales de la loi sur la bonification intégrale, connue par la suite sous le nom de « Loi Mussolini ».

Le projet qui s'y rapporte fut présenté aux autorités supérieures les premiers jours de l'année 1929, VII.

Pour être brefs, nous n'en exposerons que très succinctement seulement les ouvrages principaux.

L'ensemble du projet s'inspire de certains principes techniques que nous développerons dans ce qui suit, comme introduction à l'exposé des travaux proposés, pour nous conformer aux directives culturelles que la Fédération fasciste des dirigeants d'industries a assigné à ses conférences et publications.

II. — *Multiplicité et intégralité des buts visés :*

Après guerre, en général, tous les Etats ont poursuivi une politique de grands travaux dont les buts sont multiples et variés, mais chacun d'eux tendait au maximum d'intégralité.

Ainsi, il est difficile de trouver un projet hydraulique important, qui ait résolu la seule question de la navigabilité d'un cours d'eau, ou seulement l'irrigation d'une région même très vaste, ou bien uniquement la question de la production d'énergie électrique, ou enfin seulement l'approvisionnement en eau d'une ville ou d'une région.

En général, on a résolu, à la fois, au moins deux de ces problèmes. Souvent même les quatre. Un exemple typique et imposant en est le barrage Hoover : avec ses 230 mètres de hauteur, ses 36 milliards de mètres cubes de retenue ; 800.000 hectares irrigués, avec distribution d'eau potable pour plusieurs villes du Pacifique ; un fleuve, le Colorado, rendu navigable ; quatre millions de kwh. par an d'énergie électrique correspondant à une puissance très variable, mais, en moyenne, de l'ordre d'un million de chevaux. Les travaux durent depuis cinq années ; il en faudra en-

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core trois pour qu'ils soient complètement terminés et ils auront coûté environ cinq milliards de lires italiennes.

Toutefois, si cette dépense est rapportée à chaque hectare de sol irrigué, à chaque tonne-kilomètre transportée par la nouvelle voie de navigation, à chaque litre d'eau potable distribuée, à chaque kw. installé ou à chaque kwh. annuellement produit, les cotes-part correspondantes deviennent très faibles. Ainsi, par exemple, au kwh. installé correspond une dépense unitaire d'installation de 0,85 lires italiennes ; à chaque hectare irrigué, une dépense unitaire d'installation de 2.000 lires italiennes.

De même, pour le projet en question, on a étudié un plan régulateur général des eaux, aussi bien des fleuves que des lacs de toute cette région (qui, du moyen et bas Tibre, s'étend jusqu'à la mer Tirénienne), et cela avec les buts suivants : prévoir le développement de la ville de Rome ; rendre le Tibre navigable entre Orte et Rome ; transformer les énergies hydrauliques en énergie électrique, celles-ci à leur tour intégrées au moyen des lacs de Vico, Martignano et Bracciano ; et enfin, irriguer quelques dizaines de milliers d'hectares situés le long de la mer Tirénienne et le Tibre, dans les plateaux entre les lacs Sabatini (Martignano et Bracciano) et Rome, dans la plaine inférieure du lac Cimino (Vico).

Dans ce projet, pour Rome, le Tibre et les lacs du Haut et Moyen Lazio, les cote-parts unitaires ressortent très basses.

Les dépenses prévues pour les ouvrages proposés peuvent se résumer ainsi, d'après les premières études :

Irrigation	lires italiennes	124,8	millions
Navigation	—	28,0	—
Electricité	—	184,2	—
Total lires italiennes		337,0	millions

Comme il est fort probable qu'au début, les travaux, pour rendre le Tibre navigable, ne seront pas d'actualité, la dépense qui se rapporte à la construction des écluses devrait être supprimée du total indiqué, ou tout au moins de beaucoup réduite, surtout si, comme dans beaucoup de cas en Europe Centrale, on envisage des écluses fermées.

Toutefois, pour une plus grande marge de sécurité dans la prévision des frais, ceux se rapportant aux écluses seront transférés dans ceux prévus pour les aménagements hydroélectriques. Dans ces conditions, pour chacun des 37.270 hectares irrigués et de l'ensemble de 3.10^8 kwh. annuellement produits correspondra une dépense unitaire d'installation de :

Lires italiennes : 1.880 par hectare irrigué.
— 0,85 par kwh. produit.

Il est assez intéressant de remarquer la concordance des prix de revient pour le cas qui nous intéresse et pour celui déjà exposé du barrage Hoover.

Les prévisions pour les frais d'exploitation se montent à 22.655.000 lires italiennes. En attribuant la cote-part d'exercice de la navigation à celle de l'énergie hydroélectrique, dit plus haut, donc pour le cas où les « écluses » dans une

III. — *Conservation de l'énergie : Réservoirs d'accumulation :*

Au début de la technique des installations électriques la puissance développée par les machines s'adaptait constamment à la demande de l'énergie électrique par le réseau.

Si la demande d'énergie diminuait, toutes les machines constituant l'installation : chaudières, moteurs à vapeur et générateurs électriques, ou bien turbines hydrauliques et générateurs électriques fonctionneraient à charge réduite.

La perte d'énergie était considérable dans les deux cas : dans les installations à vapeur, les rendements des chaudières, des moteurs à vapeur et des générateurs électriques diminuaient sensiblement, ce qui, par conséquent, entraînait une plus grande consommation spécifique, par kwh., de charbon. Dans les installations hydrauliques, à cette augmentation de consommation spécifique du fluide moteur s'ajoutait la perte d'une quantité d'eau qui passait par les déversoirs ou canaux de décharge sans céder son énergie potentielle.

Toutefois, la pure perte était moins importante dans le premier cas, parce que, au moins en partie, on réduisait la consommation de charbon, tandis que pour les installations hydroélectriques, l'eau inutilisée était définitivement perdue tout au moins en ce qui concerne sa possibilité de produire de l'énergie électrique.

Par la suite, la technique de la production thermique de l'énergie a réussi à diminuer la perte d'énergie lorsque les chaudières fonctionnent à charge réduite en introduisant le perfectionnement des accumulateurs et réservoirs de vapeur (Ruth, Man, etc...), ainsi que le perfectionnement des réservoirs de vapeur à pression équilibrée (Réservoir Kieselbach, etc...). Dans les deux systèmes, on obtient le grand avantage du fonctionnement de la chaudière à charge constante, donc un rendement meilleur et par conséquent une consommation spécifique de charbon moindre.

Au point de vue technique, le progrès est dû à l'accumulation de la vapeur au lieu de l'accumulation de charbon. Au point de vue économique l'avantage a été considérable et cela d'autant plus qu'il s'agissait d'installations à utilisation directe de la vapeur :

Installations de chauffage, procédés chimiques etc. etc...

Dans les installations thermo-électriques en particulier, même lorsqu'on marche à puissance variable, le principe de la conservation de l'énergie est réalisée, puisque l'énergie potentielle du charbon non consommé, et qui reste en magasin est conservée.

On obtient le même avantage dans quelques-unes, sinon dans toutes les installations hydro-électriques, en accumulant les eaux dans des réservoirs artificiels ou dans des lacs naturels.

La réalisation de réservoir n'est pas toujours possible, soit pour des raisons absolues par exemple : terrains perméables ou inaptes pour l'édification d'ouvrage de retenue,

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Irrigation ..	Lir. ital. 6.380.000	Lir. ital. 142	par hect.
Electricité ..	Lir. ital. 16.275.000	Lir. ital. 0,0542	p. kwh.
Total	22.655.000 Lires italiennes		

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On obtient le même avantage dans quelques-unes, sinon dans toutes les installations hydro-électriques, en accumulant les eaux dans des réservoirs artificiels ou dans des lacs naturels.

La réalisation de réservoir n'est pas toujours possible, soit pour des raisons absolues par exemple : terrains perméables ou inaptes pour l'édification d'ouvrage de retenue, impossibilité d'obtenir d'assez grands volumes de retenue ou des chutes indispensables pour l'utilisation de cette eau accumulée, soit encore pour des raisons purement économiques : terrains riches qui seraient submergés, déplacements de villages ou d'ouvrages publics, etc...

Des lacs naturels, très souvent, ne présentent pas les conditions nécessaires pour pouvoir être utilisés comme réservoirs de réserve.

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De semblables inconvénients se présentent pour le Tibre dans son tronçon entre Orte et Rome. Mais puisque dans ce projet on a particulièrement voulu réaliser l'utilisation intégrale de ce tronçon du fleuve on a été contraints à appliquer un autre principe, celui de l'*Intégration de l'Energie*.

Le chapitre suivant en est un exposé.

En effet, bien que le Tibre, dans la partie de son cours entre Orte et Rome, présente une certaine continuité et constance relative de débit, cela grâce à l'affluent la Nera, car il n'en est pas ainsi pour son cours en amont d'Orte, malgré cela, il ne se prête pas très favorablement pour la retenue de ses eaux afin de pouvoir obtenir des réserves qui permettraient d'y puiser l'eau de compensation pendant des périodes de temps plus ou moins courtes. Car la réalisation de telles réserves entrainerait, avec elle, la submersion de terrain et ouvrages importants.

L'emploi de barrages mobiles installés dans le lit du fleuve est ici tout indiqué.

Les centrales, sur le cours du Tibre, prévues dans ce projet fonctionneront à pleine utilisation avec une puissance sensiblement constante, celle-ci étant naturellement fonction du débit du cours d'eau et de l'époque de l'année.

Toutefois, si l'on veut utiliser au maximum la puissance disponible, il faudra débiter une énergie sensiblement constante pendant les vingt-quatre heures sans aucune compensation journalière et encore moins hebdomadaire.

Cela en ce qui concerne les débits d'étiage et les débits moyens.

Dans les périodes de crues il y aura des jours d'arrêt complets des installations hydro-électriques du Tibre. Car pendant les crues de quelque importance, les vannes doivent être ouvertes, ce qui a pour effet de supprimer la différence de niveau entre l'amont et l'aval de celle-ci, qui constituait la chute utilisée par la Centrale correspondante.

Dans l'ensemble, en considérant le régime annuel du Tibre, entre Orte et Castelgiubileo, on a un débit moyen des hautes eaux de l'ordre de 1.200 m³/sec. et un débit moyen d'étiage d'environ 85 m³/sec., avec un rapport d'environ 14, entre ces deux débits.

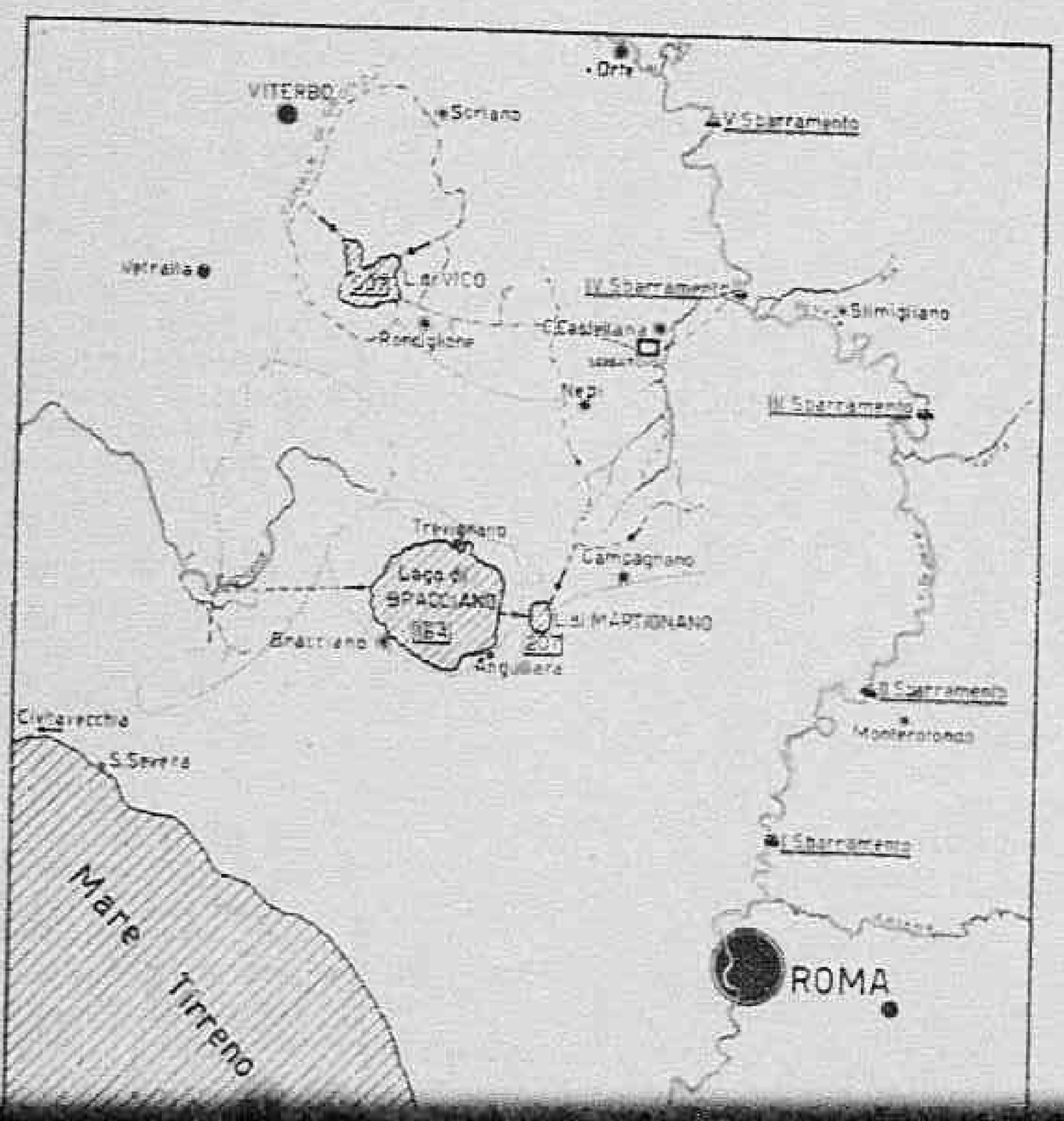
Il s'en suit, qu'en ce qui concerne l'allure saisonnière, l'utilisation intégrale au moyen de retenues de cette eau est absolument impossible, ce qui est, par contre, possible, en considérant l'énergie sous forme d'énergie électrique.

Dans l'ensemble, le Tibre donnera annuellement, environ $2.5.10^8$ kwh., dont 180 millions de kwh. pendant le semestre d'hiver et 70 milions dans le semestre d'été, en conséquence, la production en hiver sera deux fois et demi celle en été. En passant des débits aux énergies, le rapport de la valeur maxima à la valeur minima s'abaisse de 14 à 2,5.

D'autre part, il faut noter que la demande d'énergie est bien plus grande pendant le semestre d'été que pendant celui d'hiver, et, que toutes les installations hydro-électriques de l'Italie du Centre ont leur débit d'eau considérablement réduit en été.

De tout ce qui précède, il est évident que l'utilisation rationnelle de l'énergie que peut fournir le Tibre demande que les ouvrages et installations sur le cours d'eau soient intégrés avec le fonctionnement d'installations auxiliaires qui fournissent l'énergie pendant les périodes de forte consommation et qui en absorbent pendant celles où les demandes sont au dessous de la puissance correspondante au débit du fleuve.

Pour ce genre d'installations, on a pris en considération les lacs naturels



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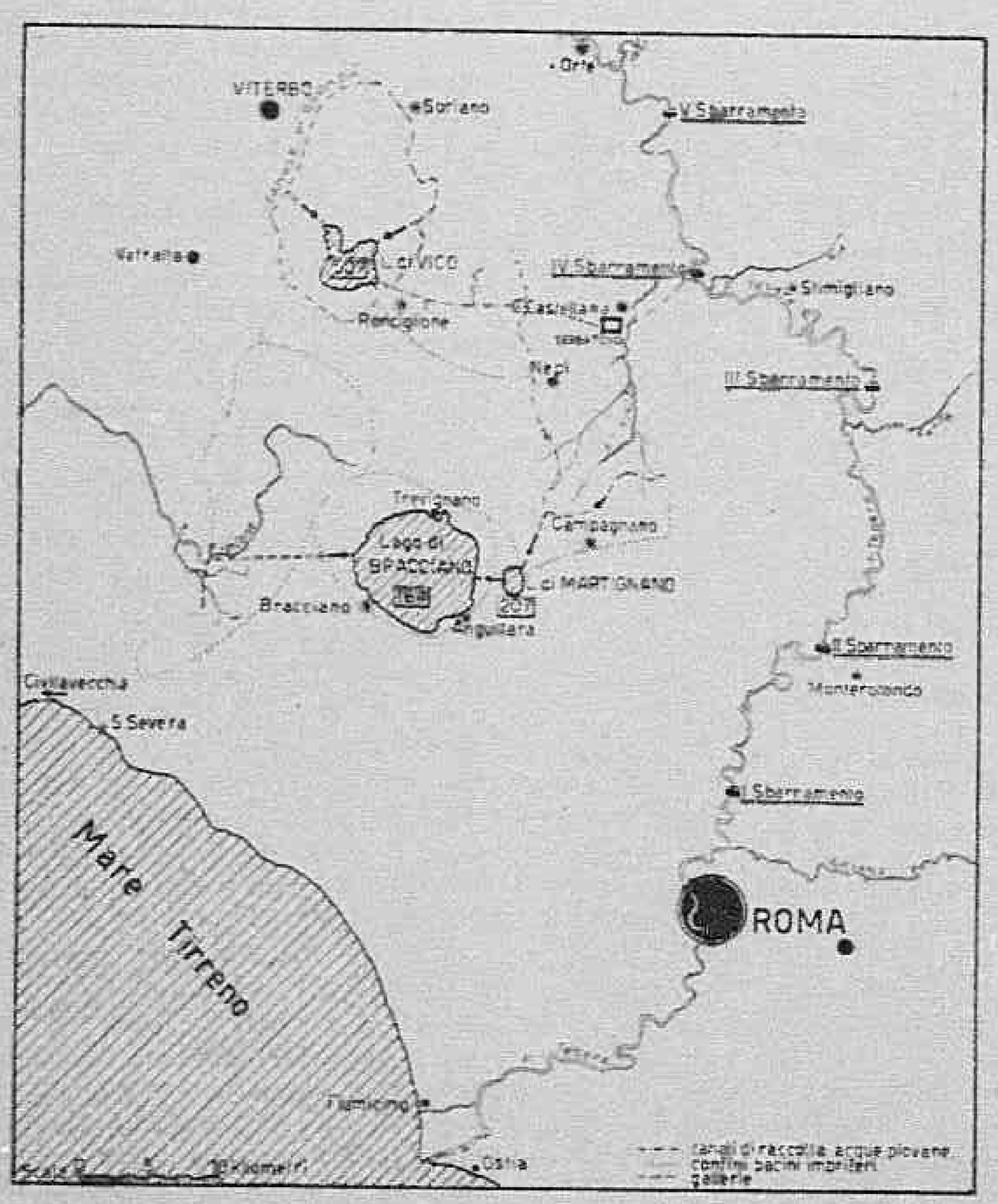

Carte A. — Afflux des eaux

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Pour ce genre d'installations, on a pris en considération les lacs naturels de Vico, Martignano et Bracciano, situés relativement assez près du Tibre, d'autant plus que, par un aménagement opportun, ils se prêtent très bien à fonctionner comme réservoirs, dans lesquels, par des ouvrages convenables on fait aboutir d'autres eaux que celles qui en sont les affluents na-

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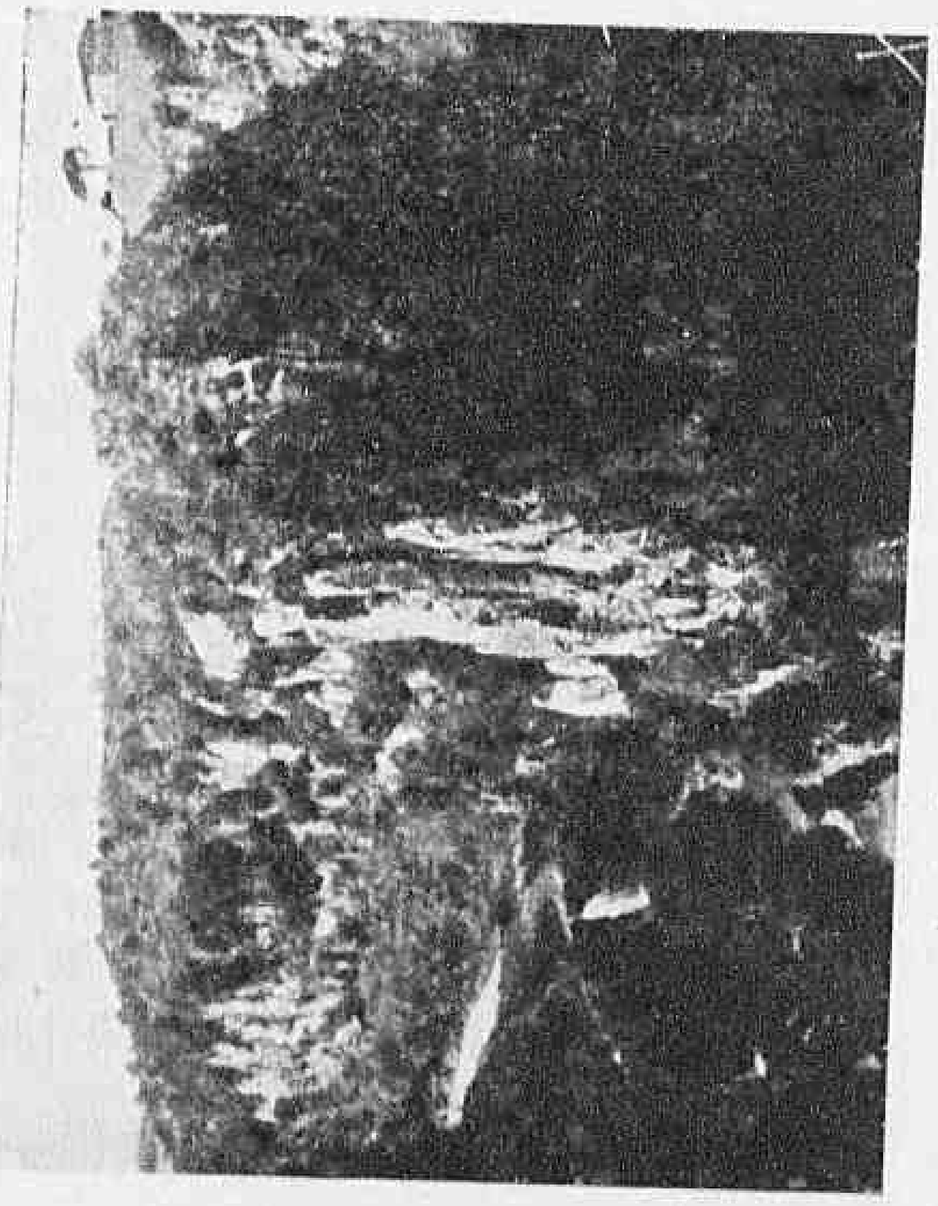

Fig. 1. — Terre Tro... Gaz au Cap Cattier

...ières, par exemple en petite ... Tréja, etc... De ces ... Centrales ... les gaz collectés ...

Disons tout de suite que ... ...ique est intéressante ... ...ent pas de ... ...ent ... ...

IV. — *Installations de captage.*

Les réservoirs ... servent ... conservation ... le tout ... ainsi que ... les ... sans ... Les ... ...ndrauliques ... ainsi que ... lues ... les ... ...

L'emplacement de ces ... le fonctionnement ... aussi des ... ses ...

La valeur de cette chute [illegible] deux [illegible]

Fig. 1 — Torrent Treja. Gorges sous Croix Castellana.

turels, par exemple, en partie les cours de Mignone, du Tréja, etc... De ces réservoirs, on dérive l'eau qui, dans les Centrales appropriées, donne l'énergie de pointe, chaque fois que celle-ci est nécessaire.

D'autre part dans le lac de Vico on refoule l'eau de pompage prise à des cotes beaucoup plus basses en utilisant pour cela l'énergie en excès des centrales sur le cours du Tibre, sans quoi cette énergie serait inutilement et définitivement perdue.

On obtient ainsi la compensation journalière et hebdomadaire et, de ce fait, une amélioration considérable du diagramme annuel.

IV. — *Intégration de l'énergie.*

Les réservoirs d'eau ou de vapeur, ou en général les réservoirs ou accumulateurs du fluide moteur, réalisent une conservation d'énergie potentielle et une économie partielle d'eau ou de charbon, mais ils ne représentent pas une véritable utilisation intégrale de toutes les parties composant l'installation hydro-électrique.

Les réservoirs permettent des intégrations thermiques ou hydrauliques, ils influent sur les débits du fluide moteur ainsi que sur la production dans les installations thermo-électriques, ils en améliorent l'utilisation, mais la production de l'énergie cinétique, mécanique ou électrique n'est pas avantagée au maximum possible.

L'amélioration de cette production exige non seulement le fonctionnement à charge constante des chaudières, mais aussi des turbines à vapeur ou hydrauliques, ainsi que des générateurs électriques.

La valeur de cette charge qu'il faudra maintenir constante est celle que les études au cours du projet et les essais en cours d'exercice ont démontré être la charge du rendement total maximum, donc consommation minimum d'eau ou de charbon par kwh. produit.

Le principe d'intégration de l'énergie a une portée bien

On a considéré l'équivalent en énergie électrique de toutes les eaux, du Tibre, des autres cours d'eaux et des lacs et non pas les volumes de ces eaux.

Les principes de la production maximum et de l'intégration ont été appliqués à l'équivalent en énergie électrique forme sous laquelle ont été transformées les énergies de toutes les eaux, au moyen desquels on a pu entièrement conserver toutes les énergies hydrauliques, qui auraient été, autrement, perdues (pompage).

L'application du principe de l'intégration de l'énergie, réduite à son expression la plus simple, se présente sous la forme schématique suivante : Pendant la période d'excès de l'énergie électrique, dans une installation thermo-électrique ou hydro-électrique, on refoule de l'eau dans un réservoir artificiel, d'où elle descend en produisant à son tour de l'énergie pendant les périodes de manque d'énergie électrique.

Si l'installation est thermique les chaudières et les moteurs à vapeur fonctionnent à pleine charge, la Centrale contient un double jeu de machines thermiques et hydrauliques, comme dans les installations hydro-électriques intégrés par des installations à hautes chutes et alimentés par un réservoir artificiel. Le rendement de l'ensemble, du charbon au kwh., augmente sensiblement par rapport aux cas de production de vapeur seulement par des chaudières marchant à pleine charge et munies du réservoir de vapeur.

L'énergie électrique consommée pour refouler l'eau est supérieure à celle qui se développe lorsqu'elle redescend, lorsque la hauteur de refoulement est égale ou plus grande que la hauteur de chute motrice, elle est inférieure lorsque la hauteur de refoulement est plus faible que la chute.

L'énergie électrique récupérée par le pompage de l'eau se désigne sous le nom de *Energie électrique d'affination.*

Dans l'ensemble, l'application de ce principe convient aussi lorsque ce transport alterné de montée et descente de l'eau s'effectue entre deux réservoirs artificiels : l'un de décharge et l'autre de charge (refoulement = chute).

En Allemagne, on l'a appliqué pour d'immenses centrales thermo-électriques et hydro-électriques.

La Centrale de Herdecke a une puissance de 196.000 C.V., celle de Niederwartha, 120.000 C.V., elles sont toutes les deux thermo-électriques. Pour ces deux installations, très importantes, on a recherché le régime économique le meilleur des chaudières et des turbines à vapeur. Elles fonctionnent, en effet, à cette charge de rendement maximum que l'on peut appeler *régime optimum.* Lorsque la production de l'énergie électrique dépasse la consommation, l'excès est

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utilisé pour le pompage d'eau du réservoir artificiel inférieur dans celui supérieur ; vice-versa lorsque ont doit intégrer le diagramme des consommations ou produit de l'énergie électrique en faisant descendre l'eau du bassin supérieur dans celui inférieur.

L'installation de Schluchsee est, par contre, hydraulique, sa puissance est d'environ 180.000 C.V., l'eau est refoulée à 170 mètres et l'énergie accumulée dans le courant d'une année dans le réservoir artificiel de l'eau de pompage est de l'ordre de 170 millions de kwh.

L'installation du Schluchsee, qui n'est pas encore entièrement achevée, a les principes suivants communs avec l'installation en projet : Tibre-Lac de Vico-Lacs Sabatini : augmentation des bassins hydrographiques naturels des lacs ; conservation de l'énergie au moyen du pompage de l'eau ; fonctionnement automatique des Centrales hydro-électriques ; conduites forcées à diamètres variables, diminution progressive vers le bas (l'auteur de ces notes en a proposé des formules pour le calcul déjà en 1903 : *Politecnico*, avril). (1)

Le problème de la production la plus rationnelle de l'énergie thermo-électrique est pourtant un peu différent du problème analogue de la production de l'énergie hydro-électrique.

Dans le premier cas comme il a été dit plus haut, il convient davantage de maintenir constante la charge et, donc la production de l'énergie. Dans le second cas, il vaut mieux utiliser aussi les débits de crues ou de semi-crues d'un cours d'eau en augmentant donc la charge et la production des groupes hydro-électriques.

L'excès ou le défaut d'énergie électrique entre la production et la consommation est, en général, inférieur aussi bien dans le premier que dans le second cas, parce que les maxima et les minima de la production hydro-électrique, liés au régime du cours d'eau peuvent se produire dans la même période, dans le temps des minima et des maxima, de la consommation, tandis que dans les installations thermiques (Herdecke, Niederwartha, etc...), la production est constante et les oscillations dans les diagrammes de l'énergie électrique dépendent seulement de la consommation.

Les oscillations peuvent s'atténuer dans une installation hydro-électrique quant à un système fluvial (d'un ou plusieurs cours d'eau) on peut adjoindre un système de lacs constitué par un ou plusieurs réservoirs artificiels, ou bien d'un ou plusieurs lacs naturels, comme dans le cas du système Tibre-

Un lac a l'avantage que l'on peut lui demander l'eau lorsqu'elle est nécessaire, tandis que d'un glacier on n'en obtient que lorsque la température le permet.

D'autre part un glacier se reforme naturellement tandis qu'un lac il faut le remplir.

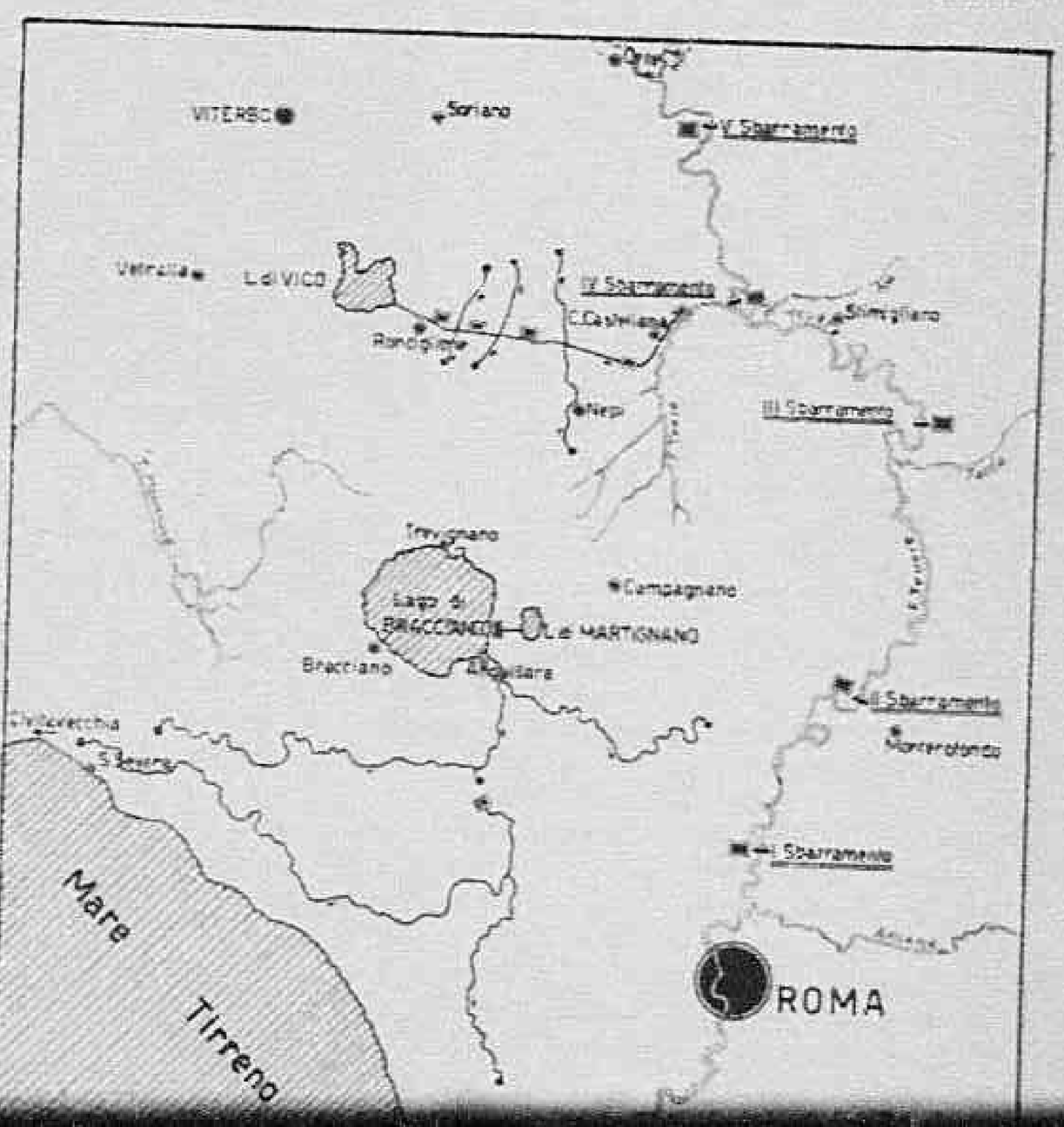
V. — *Accouplement des énergies hydrodynamiques du Tibre avec les énergies hydrostatiques des lacs de Vico, Martignano et Bracciano.*

Dans le cas prévu entre Orte et Rome on a un fleuve dont les possibilités d'utilisation sont très grandes.

A droite de celui-ci des régions hautes et très vastes d'origine volcanique, donc très fertiles à la seule condition d'être bien irriguées... D'autre part, à des distances relativement faibles du fleuve, des lacs naturels à un niveau bien supérieur à celui du fleuve.

Une bonne utilisation des débits du Tibre n'était pas possible en constituant des accumulations d'eau dans la vallée du fleuve entre Orte et Rome, soit à cause de la nature du terrain soit par l'impossibilité de créer des chutes importantes.

Pour pouvoir conserver l'énergie des hautes eaux du Ti-



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Les oscillations peuvent s'atténuer dans une installation hydro-électrique quant à un système fluvial (d'un ou plusieurs cours d'eau) on peut adjoindre un système de lacs constitué par un ou plusieurs réservoirs artificiels, ou bien d'un ou plusieurs lacs naturels, comme dans le cas du système : Tibre-Lacs de Bracciano, Martignano et Vico.

En Italie, un lac peut fonctionner, dans un système hydraulique de l'Appenin d'une façon analogue à un glacier dans un système hydraulique alpin.

Dans le cas prévu entre Orte et Rome on a un fleuve dont les possibilités d'utilisation sont très grandes.

A droite de celui-ci des régions hautes et très vastes d'origine volcanique, donc très fertiles à la seule condition d'être bien irriguées.. D'autre part, à des distances relativement faibles du fleuve, des lacs naturels à un niveau bien supérieur à celui du fleuve.

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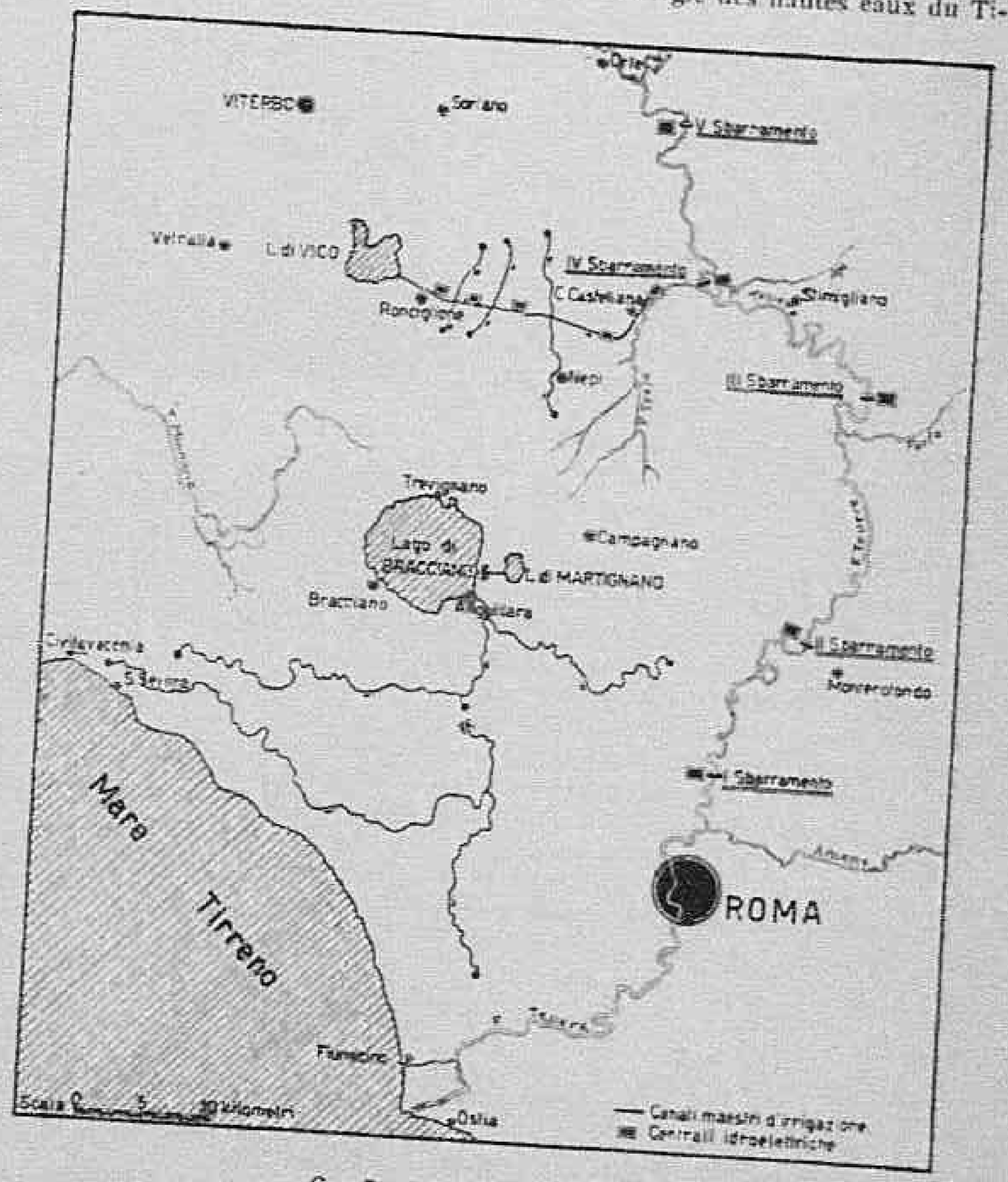
Pour pouvoir conserver l'énergie des hautes eaux du Ti-



Carte B. — Ecoulement des eaux.

(1) Voir la « Houille Blanche », N° 201--202, septembre-octobre 1933, et N° 203-204, novembre-décembre 1933, *Technique et économie dans les conduites forcées, à diamètre constant et à diamètres variables*, par Dott. Ingénieur, Remo-Catani.

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bre il fallait donc abandonner le principe de l'intégration hydraulique au moyen de réservoirs artificiels.

Le projet en question s'inspire donc bien plus du principe d'intégration de l'énergie que du principe de la conservation de l'énergie.

Les eaux du Tibre sont toujours et entièrement utilisées tant que leur débit ne dépasse pas 250 à 300 m³/sec., et cela indépendamment du diagramme des consommations, grâce au concours des eaux du Haut Mignone et du Haut Tréja à travers le lac de Bracciano (Carte A).

L'excès d'énergie est conservé en refoulant de l'eau dans le lac de Vico suivant les modalités que nous exposerons par la suite.

On a cherché à revaloriser au plus haut degré les conditions naturelles et favorables des systèmes hydrauliques, Tibre et Lacs.

Il en est résulté un ensemble indivisible des eaux des puissances, des énergies susceptibles de satisfaire toute demande de bonification intégrale, de navigabilité du Tibre, d'énergie électrique de la ville de Rome et même de la région toute entière.

Ensemble très avantageux parce que l'utilisation du Tibre ne peut exclure celle des Lacs et l'utilisation de ceux-ci implique l'usage de l'énergie électrique du Tibre.

Le problème du Tibre n'a pas été résolu jusqu'à ce jour, malgré les études de technicien de la valeur de l'Ingénieur Cipolletti, par le fait que l'on ne prévoyait pas la multiplicité des buts et l'intégration de l'énergie électrique. De même les différentes propositions non coordonnées d'utilisation des Lacs n'ont apporté aucune conclusion du fait qu'elles ne tenaient pas compte du facteur Tibre.

Ainsi, on a tiré parti des lacs naturels de Bracciano, Martignano et Vico en prévoyant un seul petit réservoir artificiel auxiliaire en dessous de Civita Castellana (fig. 1).

Dans ce projet définitif, on a attribué aux lacs naturels de Vico, Martignano et Bracciano, des fonctions diverses.

Au lac de Vico, qui se trouve à 507 mètres au dessus du niveau de la mer, on a attribué la fonction de recueillir les eaux des précipitations naturelles (intégration hydraulique) et de recevoir les eaux de pompage élevées à cette hauteur avec l'énergie électrique excédante à la consommation (intégration de l'énergie). L'intégration hydraulique est réalisée au moyen d'un canal qui permet de recueillir les eaux de pluie de la zone de Cimino (se trouvant au dessus de la cote moyenne de 510 mètres au dessus du niveau de la mer). Ces zones représentent une surface d'environ 190 km². Du canal, les eaux sont dirigées dans le lac au moyen d'une galerie qui passe au dessous de

d'augmenter le rendement et cela du fait que les eaux peuvent se collecter dans les zones les plus hautes du Cimino et être élevées par pompage dans le lac de Vico, d'une hauteur moyenne d'environ 250 mètres ; par contre, lorsque ces eaux descendront jusqu'à la vallée du Tibre, pour produire de l'énergie électrique, elles auront une chute de 450 mètres environ (Carte B).

Dans ces conditions, on récupérera environ autant d'énergie qu'il en sera dépensé pour l'élévation par pompage.

Le lac de Vico peut donc, dans les conditions les plus favorables, s'attribuer le but de conserver et d'intégrer l'énergie électrique du Tibre.

Le but des deux autres lacs, les lacs Sabatini, est différent. Le lac de Martignano, à 207 mètres au dessus du niveau de la mer, et le lac de Bracciano, à 164 mètres au dessus du niveau de la mer, auront, en effet, principalement la tâche d'accumuler et de distribuer les eaux pour le service de l'irrigation.

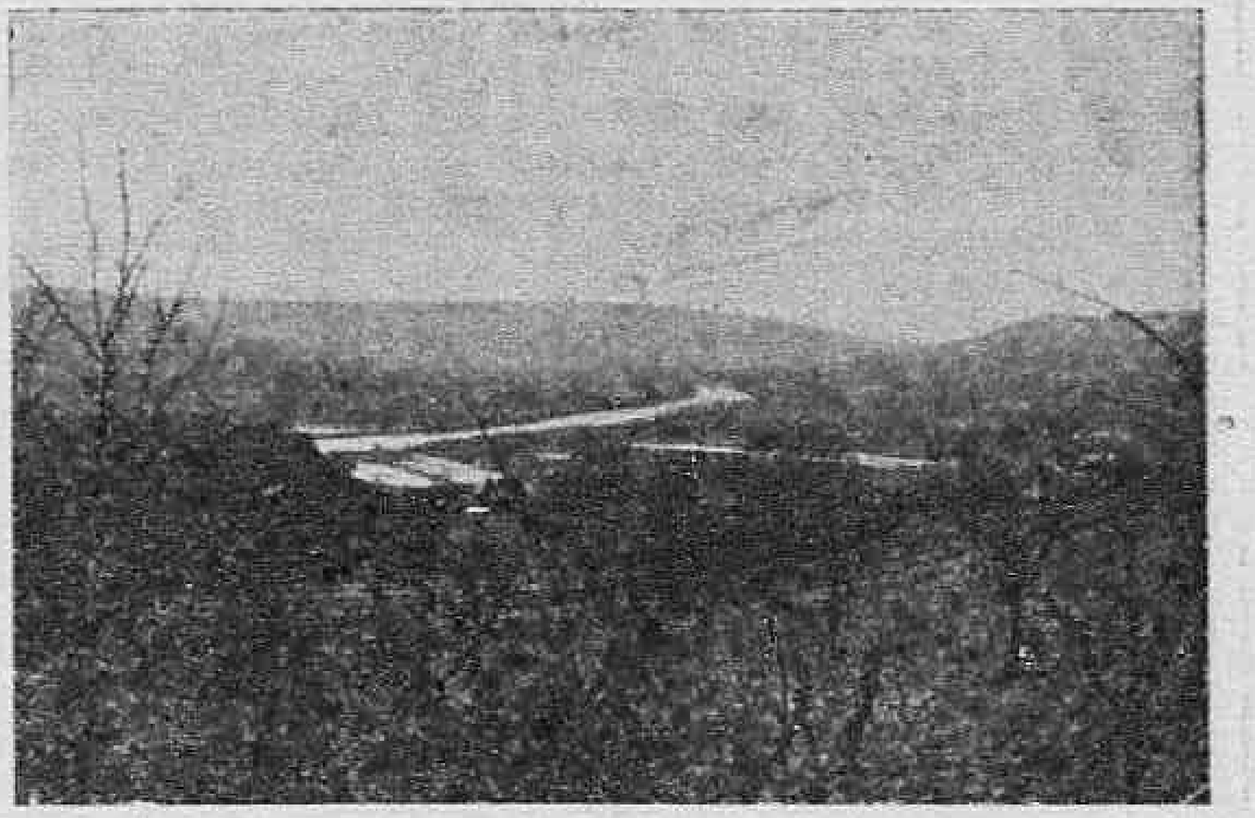

Fig. 2. — Le Tibre à Otricoli pendant la crue du printemps 1933.

Notre projet prévoit donc :

1° Cinq barrages mobiles sur le Tibre, dans la partie de son cours entre Orte et Castelgiubbileo ;

2° Une galerie passant sous Mauziano qui amènera les eaux du haut bassin du Mignone dans le lac de Bracciano ;

3° Une autre accumulation d'eau se fait dans le lac de Martignano, ce sont les eaux du Haut Tréja qui, par la suite, sont renvoyées dans le lac de Bracciano par l'intermédiaire d'une Centrale électrique automatique, située sur la rive orientale du lac de Bracciano ;

4° Des canaux principaux d'irrigation à la cote de 150 et 50 mètres environ au dessus du niveau de la mer ;

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Prof. à travers le lac de Bracciano (Carte A).

L'excès d'énergie est conservé en refoulant de l'eau dans le lac de Vico suivant les modalités que nous exposerons par la suite.

On a cherché à revaloriser au plus haut degré les conditions naturelles et favorables des systèmes hydrauliques, Tibre et Lacs.

Il en est résulte un ensemble indivisible des eaux des puissances, des énergies susceptibles de satisfaire toute demande de bonification intégrale, de navigabilité du Tibre, d'énergie électrique de la ville de Rome et même de la région toute entière.

Ensemble très avantageux parce que l'utilisation du Tibre ne peut exclure celle des Lacs et l'utilisation de ceux-ci implique l'usage de l'énergie électrique du Tibre.

Le problème du Tibre n'a pas été résolu jusqu'à ce jour, malgré les études de techniciens de la valeur de l'Ingénieur Cipolletti, par le fait que l'on ne prévoyait pas la multiplicité des buts et l'intégration de l'énergie électrique. De même les différentes propositions non coordonnées d'utilisation des Lacs n'ont apporté aucune conclusion du fait qu'elles ne tenaient pas compte du facteur Tibre.

Ainsi, on a tiré parti des lacs naturels de Bracciano, Martignano et Vico en prévoyant un seul petit réservoir artificiel auxiliaire en dessous de Civita Castellana (fig. 1).

Dans ce projet définitif, on a attribué aux lacs naturels de Vico, Martignano et Bracciano, des fonctions diverses.

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Entre le lac de Vico et le réservoir de Civita Castellana, on a prévu quelques centrales hydro-électriques qui produiront ou absorberont, suivant les exigences, de l'énergie électrique.

L'intégration de l'énergie sera faite dans les meilleures conditions parce que cette région, d'elle-même, permet

Le lac de Vico peut donc, dans les conditions les plus favorables, s'attribuer le but de conserver et d'intégrer l'énergie électrique du Tibre.

Le but des deux autres lacs, les lacs Sabatini, est différent. Le lac de Martignano, à 207 mètres au dessus du ni-

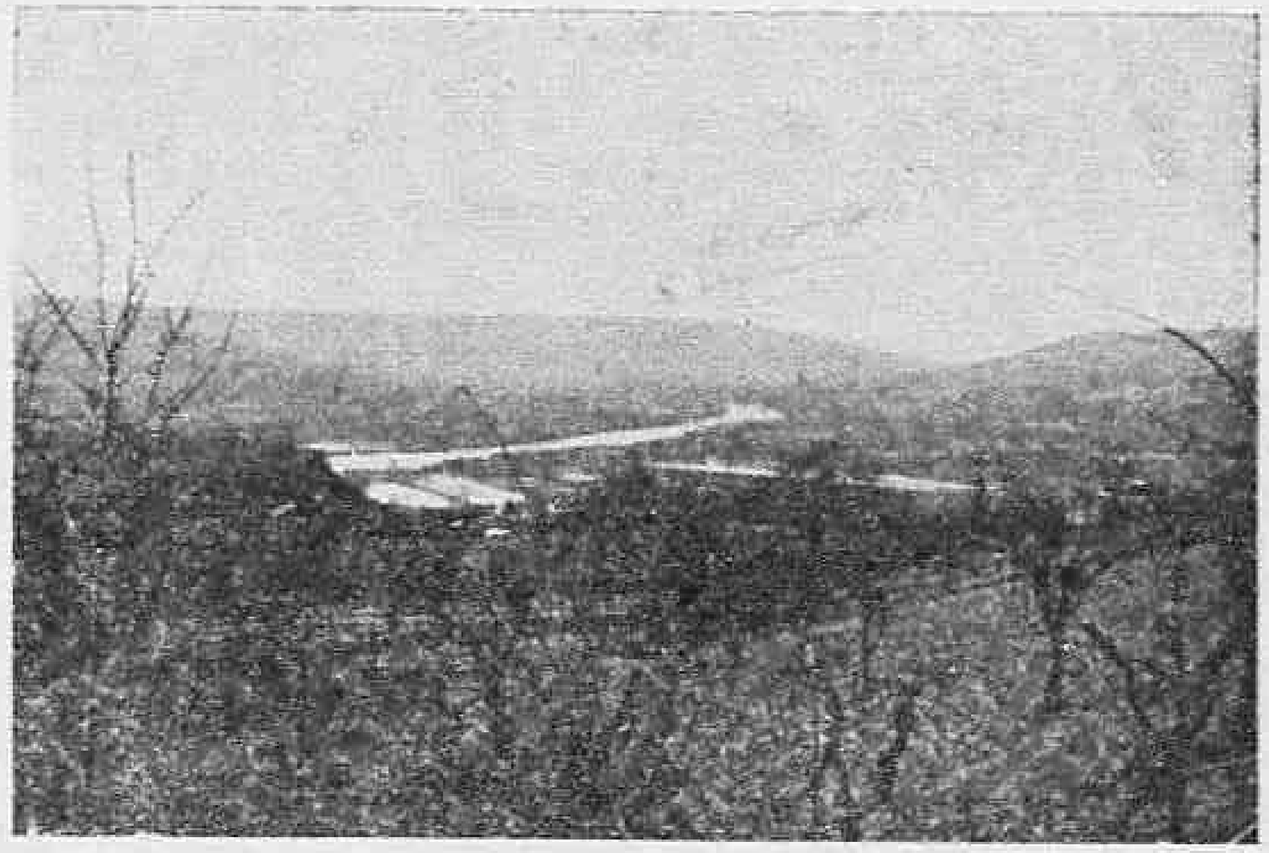

Fig. 1. — Le Tibre à Otricoli pendant la crue du printemps 1911.

veau de la mer, et le lac de Bracciano, à 164 mètres au dessus du niveau de la mer, auront, en effet, principalement la tâche d'accumuler et de distribuer les eaux pour le service de l'irrigation.

Notre projet prévoit donc :

1° Cinq barrages mobiles sur le Tibre, dans la partie de son cours entre Orte et Castelgiubileo ;

2° Une galerie passant sous Manziana qui amènera les eaux du haut bassin du Mignone dans le lac de Bracciano ;

3° Une autre accumulation d'eau se fait dans le lac de Martignano, ce sont les eaux du Haut Treja qui, par la suite, sont renvoyées dans le lac de Bracciano par l'intermédiaire d'une Centrale électrique automatique, située sur la rive orientale du lac de Bracciano ;

4° Des canaux principaux d'irrigation à la cote de 150 et 50 mètres environ au dessus du niveau de la mer ;

5° D'autres Centrales hydro-électriques automatiques et de moindre importance, interposées entre ces principaux canaux d'irrigation.

Pendant la saison d'été, pendant laquelle les installations de compensation doivent plus particulièrement émettre leur énergie, l'eau est ainsi, après sa chute productrice de cette énergie de compensation, utilisée pour l'irrigation d'une très vaste région agricole.

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VI. — *Les travaux sur le Tibre.*

N'importe quel ouvrage de retenue du Tibre exige la prise en considération des données que représentent ses crues les plus remarquables qui eurent lieu en 1598, en 1870 et en 1900.

La crue exceptionnelle de 1598 survint avant que les travaux du Pont Régulateur sur le Velino, fussent terminés, presque sur le sommet des Chutes des Marmore (Cascate delle Marmore). Elle atteint, à Rome, le niveau maximum dont on conserve le souvenir.

Elle détruisit le pont que Grégoire XIII avait reconstruit sur les fondations de l'ancien pont romain Emilio (Ponte Rotto).

La crue de 1870 a trouvé le Pont Régulateur, sur le Velino, achevé, et donc le débit du Tibre, de ce fait réduit de l'apport du Val di Chiana, qui a été dévié dans l'Arno, au XVIIe siècle. L'inondation de Rome fut, toutefois, assez grave et décida définitivement le Gouvernement Italien à prendre immédiatement des mesures efficaces par la canalisation du Tibre dans la ville.

En 1900, la situation était encore différente : améliorée notablement grâce à la magnifique canalisation du Tibre qui, tout en rectifiant les rives, avait aussi débarrassé le cours du fleuve de nombreux et importants obstacles ; par contre, la situation s'était aggravée par la construction de nouveaux ponts sur le Tibre et par l'empêchement de l'expansion de la crue dans la vaste plaine aux pieds du Monte Mario.

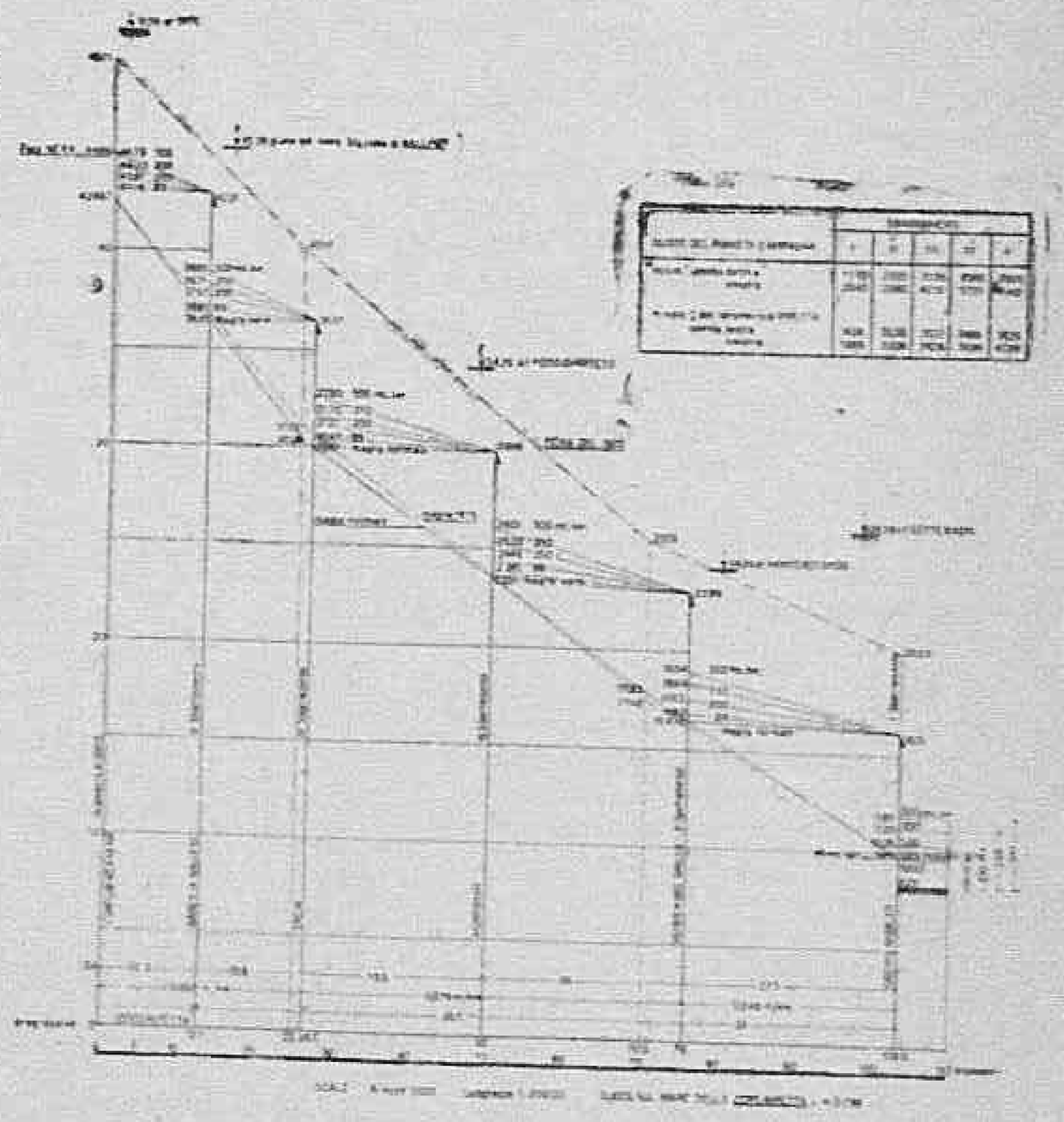

Fig. 5. — Diagramme schématique des barrages et des crues du Tibre.

Les crues de 1870 et de 1900 n'atteignirent pas les hauteurs de celle de 1598. En 1900, bien que les nouveaux ouvrages de canalisation du Tibre, dans la ville, empêchaient, en partie, l'inondation de la ville, on eut pourtant à déplorer de graves dégâts sur ces œuvres d'art elles-mêmes : écroulement d'une partie des murs de soutènement, des quais, et cela sur les quais des Anguillara et des Albertaschi, et des lésions sur les murs du quai des Mellini.

Après 1900, de nombreux autres ponts furent construits sur le cours urbain du Tibre, ce qui augmente encore les difficultés d'écoulement d'une crue de l'importance de celle de 1900.

Le problème de Rome n'a jamais été séparé de celui du Tibre. La ville n'est

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sur le Velino, fussent terminés, presque sur le sommet des Chutes des Marmore (Cascate delle Marmore). Elle atteint, à Rome, le niveau maximum dont on conserve le souvenir.

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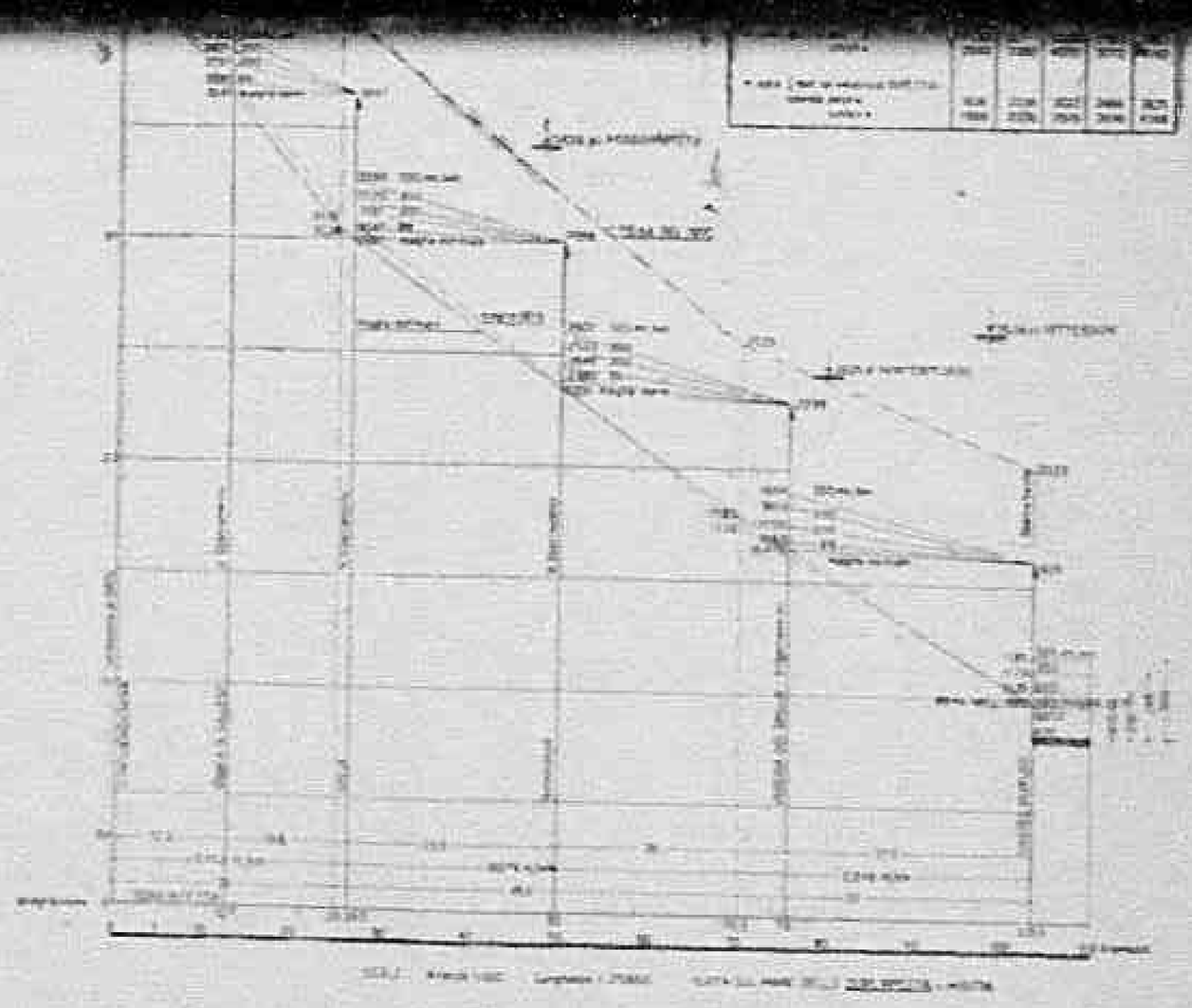

Fig. 5. — Diagramme schématique des barrages et des crues du Tibre.

Fig. 3

Fig. 4

La chute du Marmore pendant la crue du printemps 1935.

Les crues de 1870 et de 1900 n'atteignent pas les hauteurs de celle de 1598. En 1900, bien que les nouveaux ouvrages de canalisation du Tibre, dans la ville, empêchaient, en partie, l'inondation de la ville, on eut pourtant à déplorer de graves dégâts sur ces œuvres d'art elles-mêmes : écroulement d'une partie des murs de soutènement, des quais, et cela sur les quais des Anguillara et des Albertaschi, et des lésions sur les murs du quai des Mellini.

Après 1900, de nombreux autres ponts furent construits sur le cours urbain du Tibre, ce qui augmente encore les difficultés d'écoulement d'une crue de l'importance de celle de 1900.

Le problème de Rome n'a jamais été séparé de celui du Tibre. La ville n'est qu'un formidable nœud sur le cours du fleuve. Même dans les premiers siècles de l'existence de la ville, Rome se confondait avec *Rumon*, l'ancien nom du Tibre, d'où, d'après les dernières investigations, son nom provient.

Le Tibre a toujours été une véritable menace pour Rome, déjà, depuis que cet-

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le dernière, véritable nid d'aiglons, était ramassée au pied du Campidoglio, serrée ainsi entre cette colline et le Tibre, avec un de ses bras tendu vers les Etrusques par la tête du pont du Gianicolo, opposée à la tête du pont de Fidenae, tenue par les Etrusques.

Il y eut des inondations terribles dont quelques-unes seulement pendant les périodes historiques. Il en advint une pendant l'Empire de Tibère. L'Empereur nomma une commission de deux membres seulement, qui aboutirent à la conclusion de faire dévier toutes les eaux du Tibre !

Curio Dentato avait gravement compromis les régimes naturels de la Nera et du Tibre en faisant creuser le grand et profond canal qui avait permis l'assèchement de la plaine de Rieti et crée les chutes des Marmore.

Clément VIII fit construire le Pont Régulateur sur le Velino, pour tenter de réduire les maxima des crues du Tibre, à Rome.

Les cinq barrages mobiles prévus dans ce projet ne représentent aucun danger ou empêchement pour l'écoulement des eaux de crue. En effet, en ouvrant rapidement les vannes mobiles de ces barrages avant l'arrivée des crues, tout le lit du fleuve redevient entièrement libre pour l'évacuation de ses eaux. Or, les services actuels de prévision des crues donnent des informations suffisamment à temps pour que cette opération puisse être effectuée avant tout danger possible.

Cette opération d'ouverture des vannes effectuée il ne reste, comme encombrement du lit du fleuve, que les piliers du barrage qui ne détermineraient pas des engorgements plus importants que ceux produits par un pont moderne et la crue s'écoulera dans des conditions sensiblement semblables à celles actuelles.

Donc, en ce qui concerne la sécurité de la ville, en particulier, aucune préoccupation ne serait justifiée du fait de l'exécution des barrages en question.

Bien au contraire, il n'est pas dit qu'avec une manœuvre opportune des vannes, au passage du débit maximum de la crue, il ne soit pas possible de réduire d'une façon appréciable le niveau maximum de crue dans la ville.

Des études dans ce sens sont en cours.

Actuellement, les crues, à Rome, sont assez réduites par les élargissements et régulations des lits du Tibre et de ses affluents.

La fig. 2 montre la campagne, sous Orticoli, inondée par une crue moyenne au printemps de 1935 : Le même jour (5 mars), les chutes des Marmore avaient les aspects des figures 3 et 4.

Pour le projet en question, il était du plus haut intérêt

VII. — *Energie hydro-électrique du Tibre.*

L'énergie hydro-dynamique du Tibre se transforme grâce aux ouvrages proposés en énergie électrique.

Une ligne à haute tension reliera les Centrales sur le Tibre ; aux deux extrémités de cette ligne se trouveront les deux grands centres de consommation : Rome et la station de pompage des eaux dans le lac de Vico.

Les pompes fonctionneront pendant les périodes d'excès de production, tandis que dans les périodes où Rome et la bonification intégrale exigeront une énergie supérieure à celle produite, l'eau redescendra pour produire cette énergie en défaut.

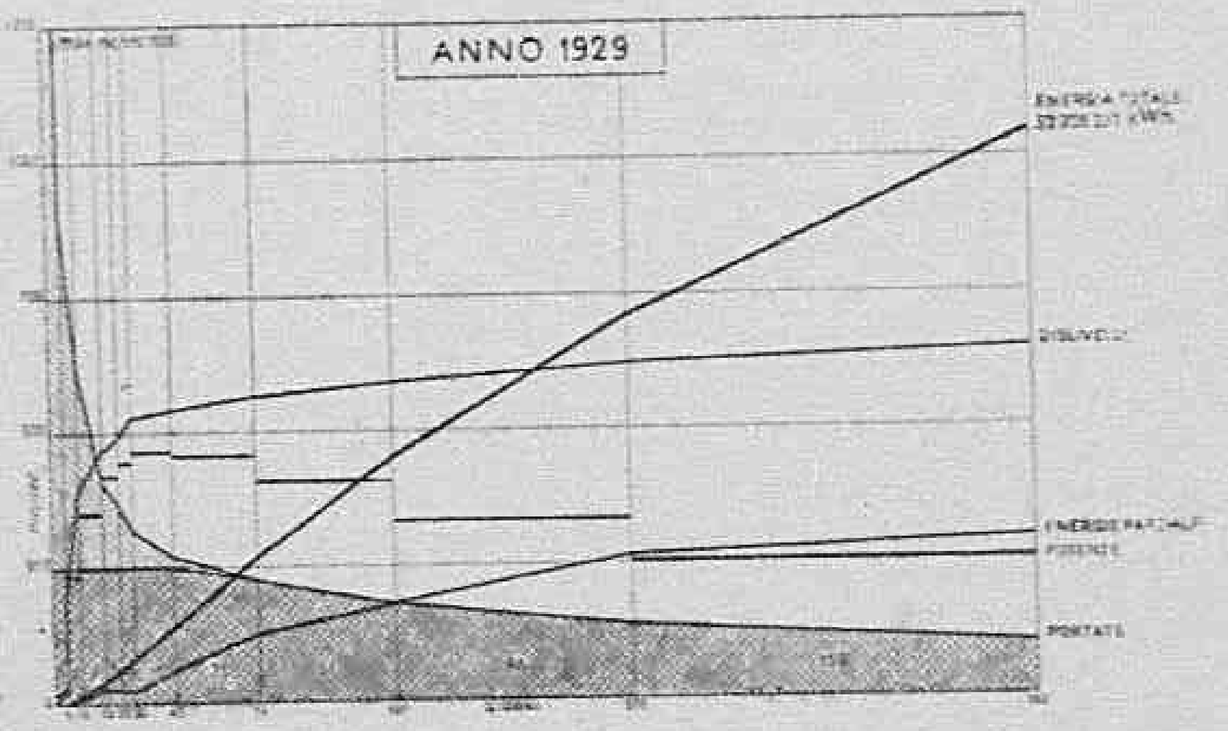

Fig. 6. — Caractéristiques hydro-électriques du Tibre à Castelgiubbileo (année 1929).
Débit moyen annuel : 198 m³/sec.
— *moyen journalier maximum :* 1773 m³/sec.
— *moyen journalier minimum :* 97 m³/sec.

Pendant la période 1925-1936, l'énergie électrique produisible par le Tibre entre Orte et Castelgiubbileo (fig. 6 et 7) est représentée dans le tableau ci-inclus.

Dans ce tableau est clairement illustrée la fluctuation de l'énergie hydro-électrique au cours de l'année dans les différents tronçons considérés et dans l'ensemble du cours d'eau pris en considération dans ce projet.

On y remarque une régularité des possibilités de production qui est due soit à la régularité des débits du fleuve, soit aussi à la méthode proposée pour l'utilisation des eaux.

VIII. — *Energie électrique des Lacs.*

En tenant compte des autres Centrales hydro-électriques de moindre importance, on arrive à une production totale de 300 millions de kwh. par an, dont on prévoit que 20 seront absorbés pour les besoins des terres bonifiées. Il resterait 280 millions de kwh. par an disponibles pour les besoins de Rome.

Le lac de Vico (fig. 8) se trouve actuellement dans des

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Curio Dentato avait gravement compromis les régimes naturels de la Nera et du Tibre en faisant creuser le grand et profond canal qui avait permis l'assèchement de la plaine de Rieti et créé les chutes des Marmore.

Clément VIII fit construire le Pont Régulateur sur le Velino, pour tenter de réduire les maxima des crues du Tibre, à Rome.

Les cinq barrages mobiles prévus dans ce projet ne représentent aucun danger ou empêchement pour l'écoulement des eaux de crue. En effet, en ouvrant rapidement les vannes mobiles de ces barrages avant l'arrivée des crues, tout le lit du fleuve redevient entièrement libre pour l'évacuation de ses eaux. Or, les services actuels de prévision des crues donnent des informations suffisamment à temps pour que cette opération puisse être effectuée avant tout danger possible.

Cette opération d'ouverture des vannes effectuée il ne reste, comme encombrement du lit du fleuve, que les piliers du barrage qui ne détermineraient pas des engorgements plus importants que ceux produits par un pont moderne et la crue s'écoulera dans des conditions sensiblement semblables à celles actuelles.

Donc, en ce qui concerne la sécurité de la ville, en particulier, aucune préoccupation ne serait justifiée du fait de l'exécution des barrages en question.

Bien au contraire, il n'est pas dit qu'avec une manœuvre opportune des vannes, au passage du débit maximum de la crue, il ne soit pas possible de réduire d'une façon appréciable le niveau maximum de crue dans la ville.

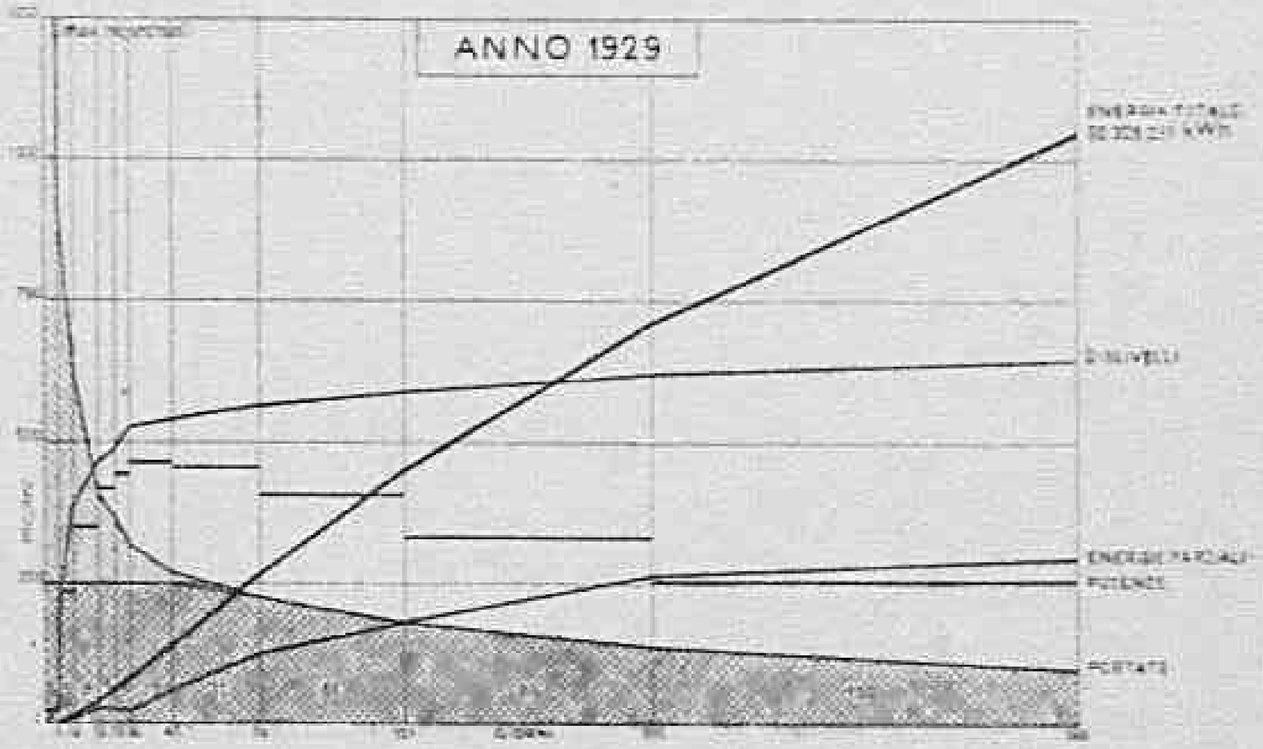
Des études dans ce sens sont en cours.

Actuellement, les crues, à Rome, sont assez réduites par les élargissements et régulations des lits du Tibre et de ses affluents.

La fig. 2 montre la campagne, sous Orticoli, inondée par une crue moyenne au printemps de 1935 : Le même jour (3 mars), les chutes des Marmore avaient les aspects des figures 3 et 4.

Pour le projet en question, il était du plus haut intérêt surtout de pouvoir choisir convenablement l'emplacement des barrages mobiles en question, ceux-ci devant jouer le rôle de Ponts, de Centrales hydro-électriques, de barrages de retenues et aussi constituer les écluses pour la navigation. Cela a été fait en cherchant à éviter des chutes trop faibles ainsi que des inondations par l'effet des eaux retenues par ces barrages.

celle produite, l'eau redescendra pour produire cette énergie en défaut.



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Le lac de Vico (fig. 8) se trouve actuellement dans des conditions hydrauliques peu favorables, soit à cause de l'immense quantité d'eau perdue par évaporation vue son altitude et l'exposition aux forts courants d'airs, soit par suite de l'état de l'émissaire et des ouvrages rudimentaires qui le régularisent, soit enfin par la nature de la partie asséchée après l'ouverture de l'émissaire.

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Energie hydro-électrique du Tibre (en millions de kwh.)

BARRAGES	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	Moyenne
I° Castelgiubbileo	52,7	55,9	55,9	54,2	52,8	53,7	55,9	55,1	53,2	52,9	52,9	54,5	54,2
II° Pont de Grillo	50,9	52 »	52 »	51,4	49 »	50,1	52 »	51,4	50,5	49,8	49,8	51,5	50,9
III° Montorso	49,5	51,5	51,4	50,2	48 »	48,9	51,5	50,6	49 »	48,7	48,7	50,2	49,9
IV° Confluent du Treja . . .	44,2	44,2	43,7	44,2	44,2	49,1	45,1	45,5	44,2	44 »	44 »	48,5	45,2
V° Barca di Gallese	44,4	44,4	45,8	44,5	44,4	49 »	45,3	45,6	44,5	44,4	44 »	44,8	45 »
Total. . .	242,7	248 »	250 8	244,5	237,9	250,8	249,8	248,2	241,4	239,8	239,4	249,5	245,2

Après ces travaux d'ouverture de l'émissaire, la surface libre du lac s'est notablement abaissée, les eaux n'entouraient plus le Mont Venere, la surface libre du Lac a diminué et, de ce fait, aussi les pertes par évaporation.

Le projet en question se propose de la réduire encore en diminuant davantage la surface libre du lac en l'abaissant, et par l'aménagement de l'émissaire en organisant un bon régime hydraulique, au moyen d'ouvrages d'écoulement et de dérivation des eaux.

Le lac de Vico est actuellement dans des conditions très défavorables. Par contre, sa situation est très favorable pour sa mise en eau.

D'une façon analogue, le petit lac de Martignano, fort peu connu, est pourtant très intéressant (fig. 9) : Sans accès faciles, dans une région inhabitée, mais bien beau dans sa solitude et potentiellement de grand avenir.

Le lac de Bracciano est essentiellement un lac volcanique : Il a une profondeur maximum de 160 mètres, de sorte que le point le plus bas de son fond est presque au niveau de la mer puisque, comme nous l'avons déjà dit, sa surface libre se trouve à 164 mètres au dessus du niveau de la mer.

IX. — *Développement de Rome et nécessité d'énergie électrique :*

Le problème que l'on a cherché à résoudre est un problème intégral : Développement de Rome, utilisation du Tibre, transformation [illegible]

Rome a été tel qu'il imposa aussi le développement du Lazio septentrional, qui peut être considéré comme délimité par le Tibre, de Orte à Rome, la mer Tirénienne, les groupes de montagnes Tolfa et Cimino. Cette région est en partie incluse dans le territoire du Governatorato de Rome et le reste en est une extension naturelle.

Le développement de la ville depuis le début de l'Ere fasciste est synthétisé par l'augmentation de la population enregistré par les recensements [illegible]

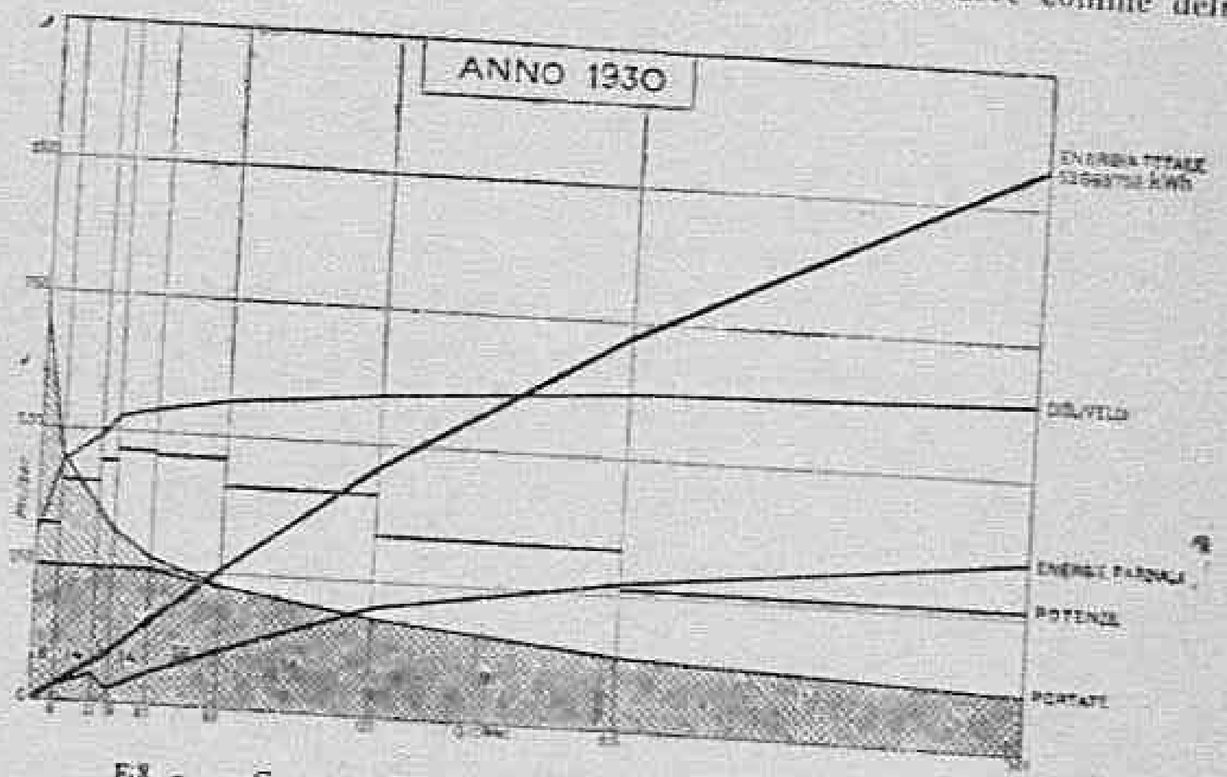

Fig. 7. — Caractéristiques hydro électriques du Tibre à Castelgiubbileo (année 1930 -
Débit moyen annuel : 182 mc/sec.
— *moyen journalier maximum :* 899 mc/sec.
— *moyen journalier minimum :* 105 mc/sec.

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	49,5	51,5	51,4	50,2	48 »	48,9	51,5	50,6	49 »	48,7	48,7	50,2	49,9
IV° Confluent du Treja	44,2	44,2	45,7	44,2	44,2	49,1	45,1	45,5	44,2	44 »	44 »	48,5	45,2
V° Barca di Gallese	44,4	44,4	45,8	44,5	44,4	49 »	45,3	45,6	44,5	44,4	44 »	44,8	45 »
Total	242,7	248 »	250,8	244,5	237,9	250,8	249,8	248,2	241,4	239,8	239,4	249,5	245,2

Après ces travaux d'ouverture de l'émissaire, la surface libre du lac s'est notablement abaissée, les eaux n'entouraient plus le Mont Venere, la surface libre du Lac a diminué et, de ce fait, aussi les pertes par évaporation.

Le projet en question se propose de la réduire encore en diminuant davantage la surface libre du lac en l'abaissant, et par l'aménagement de l'émissaire en organisant un bon régime hydraulique, au moyen d'ouvrages d'écoulement et de dérivation des eaux.

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Le lac de Bracciano est essentiellement un lac volcanique : Il a une profondeur maximum de 160 mètres, de sorte que le point le plus bas de son fond est presque au niveau de la mer puisque, comme nous l'avons déjà dit, sa surface libre se trouve à 164 mètres au dessus du niveau de la mer.

IX. — *Développement de Rome et nécessité d'énergie électrique :*

Le problème que l'on a cherché à résoudre est un problème intégral : Développement de Rome, utilisation du Tibre, transformation « foncière » des territoires immédiatement au nord de Rome.

On ne peut imaginer que Rome doit s'étendre jusqu'à constituer un de ces océans de pierres et de béton armé défini par le Duce.

Par contre, avec ce projet, on a transformé « foncièrement » un territoire de facile débouché pour la population de Rome.

En effet, avec le régime fasciste, le développement de Rome a été tel qu'il imposa aussi le développement du Lazio septentrional, qui peut être considéré comme délimité par le Tibre, de Orte à Rome, la mer Tirénienne, les groupes de montagnes Tolfa et Cimino. Cette région est en partie incluse dans le territoire du Governatorato de Rome et le reste en est une extension naturelle.

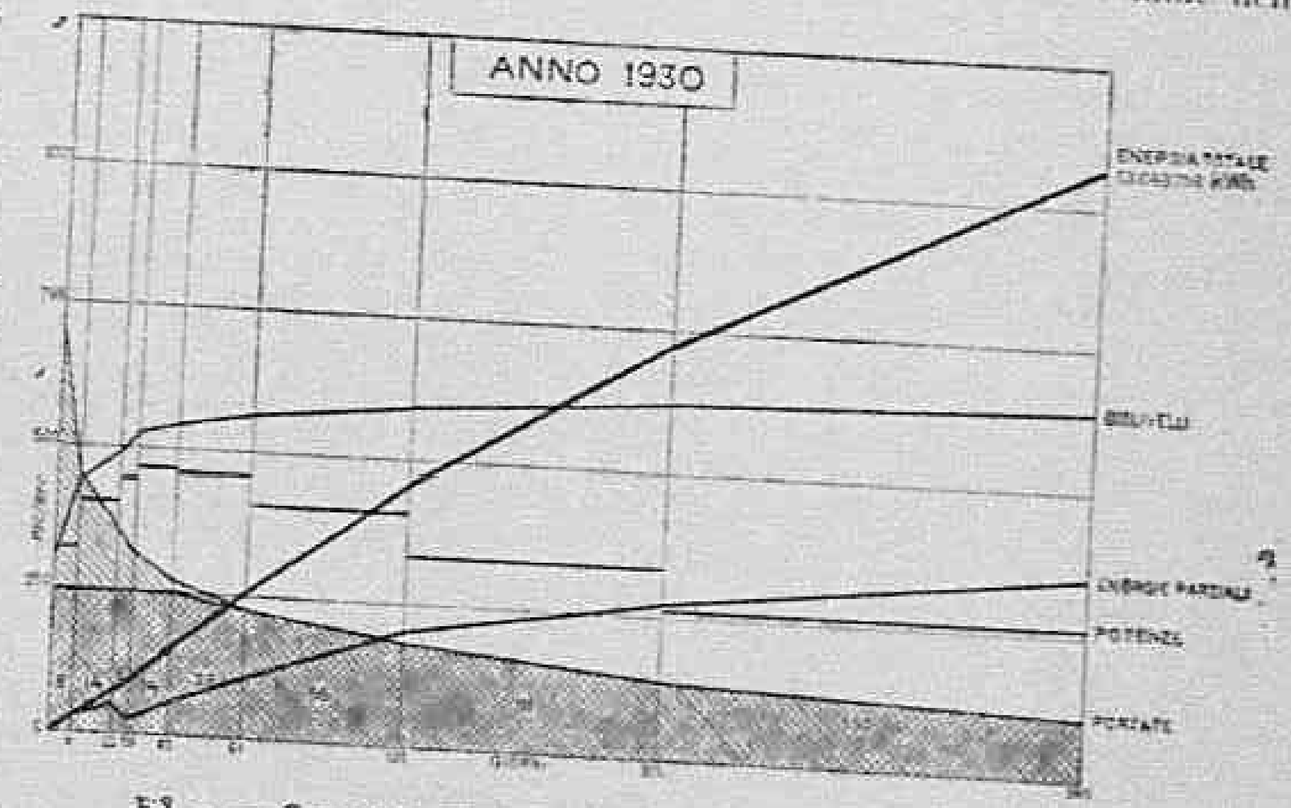

Fig. 7. — Caractéristiques hydro électriques du Tibre à Castelgiubileo (année 1910).
Débit moyen annuel : 181 m³/sec.
— *moyen journalier maximum* : 699 m³/sec.
— *moyen journalier minimum* : 108 m³/sec.

Le développement de la ville depuis le début de l'Ere fasciste est synthétisé par l'augmentation de la population enregistré par les recensements de 1921 et de 1936 : de 692.106 habitants à 1.178.491 habitants, soit une augmentation d'environ un demi-million, correspondant à 70.23 % de la population de 1921.

En prenant en considération les données statistiques relatives aux années écoulées, on peut prévoir ce qu'elle sera dans les années futures (fig. 10).

De l'augmentation qui s'est vérifiée jusqu'à ce jour et de la façon dont elle s'est effectuée, on déduit, au moyen de procédés de calcul se basant sur un critérium de prudence que Rome augmente actuellement de 45.000 habitants par

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an (10 pour cent de l'augmentation de toute l'Italie), dont 15.000 représentent l'excédent des immigrations sur les émigrations.

Si toute l'Italie avait un quotient de natalité égale à celui de Rome (20,95 par mille habitants en 1935) on devrait avoir une augmentation par an de 650.000 habitants. Mais Rome a un coefficient de natalité plus élevé que la moyenne générale.

Tout fait supposer que la population de Rome continuera à augmenter en atteignant les 2 millions en 1950 et les 3 millions en 1960.

Des augmentations de la population on a déduit les augmentations de consommation totale d'énergie électrique.

En 1945 Rome aura besoin d'au moins un demi million de Kwh par an. Autour de 1960 il en faudra un million, c'est-à-dire environ le triple de la consommation actuelle (figure 11).

L'accroissement démographique sera suivi, outre l'inévitable, bien que limitée, expansion de la ville, de la création de zones industrielles, de la plus grande densité de la population dans la région suburbaine, dans l'Agro et aussi dans le Lazio Septentrional, où pour l'instant la densité de la population est faible.

Au delà de la région suburbaine et de l'Agro, Rome devra logiquement se développer vers le Nord, pour les raisons suivantes : Raison topographique, parce que entre la mer Tirénienne et le Tibre, de Rome à Orte, prédominent les plateaux, tandis que le Lazio au sud de Rome a des plaines et peu de localités élevées. Raison démographique, parce que le Lazio Septentrional a une population peu dense : La densité descend à 30 habitants par km² dans la commune de Tolfa et même 19 habitants au km² dans la commune de Cerveteri ; par contre, le Lazio méridional a une densité de 430 (commune de Albano) et même 506 dans la commune de Frascati.

X. — *Haut et Moyen Lazio :*

La région qui s'étale en éventail, de Rome vers Orte, le long du Tibre, et vers Civitavecchia, le long de la voie ferrée, est riche en eau qui s'écoule dans le Tibre et dans le Treja, mais n'a pas d'eau d'irrigation et non plus suffisamment d'énergie électrique.

Le groupe montagneux de la Tolfa, contenant des minerais, en quantité peut-être bien plus grandes que celles prévues, a eu des périodes de prospérité

XI. — *Rome, centre de l'Empire Fasciste.*

La Rome Mussolinienne peut, dans l'avenir, faire revivre et repeupler le Moyen et le Haut Lazio en les revivifiant grâce à ses fois prévoyantes de bonification intégrale, en les irradiant d'énergie électrique, en restituant au Tibre sa fonction de voie de communication et en les repeuplant à l'aide des populations des régions surpeuplées de l'Italie.

En effet, puisque la densité moyenne de la population, en Italie, est de 138 habitants au km², et que le Lazio septentrional n'en a que 38, il peut donc en recevoir encore 100 au km², par conséquent, au total, 200.000 habitants sur son étendue d'environ 2.000 k².

Quand les études que l'on vient de résumer ont été entreprises, quelque âme mesquine non italienne aurait pu douter du développement de la capitale d'Italie.

Le doute n'est plus possible, à présent.

Dans les années à venir, il y aura, pour Rome, des accroissements démographiques supérieurs à ceux exposés plus haut. Les hypothèses faites en 1928 ont été surpassées par les faits.

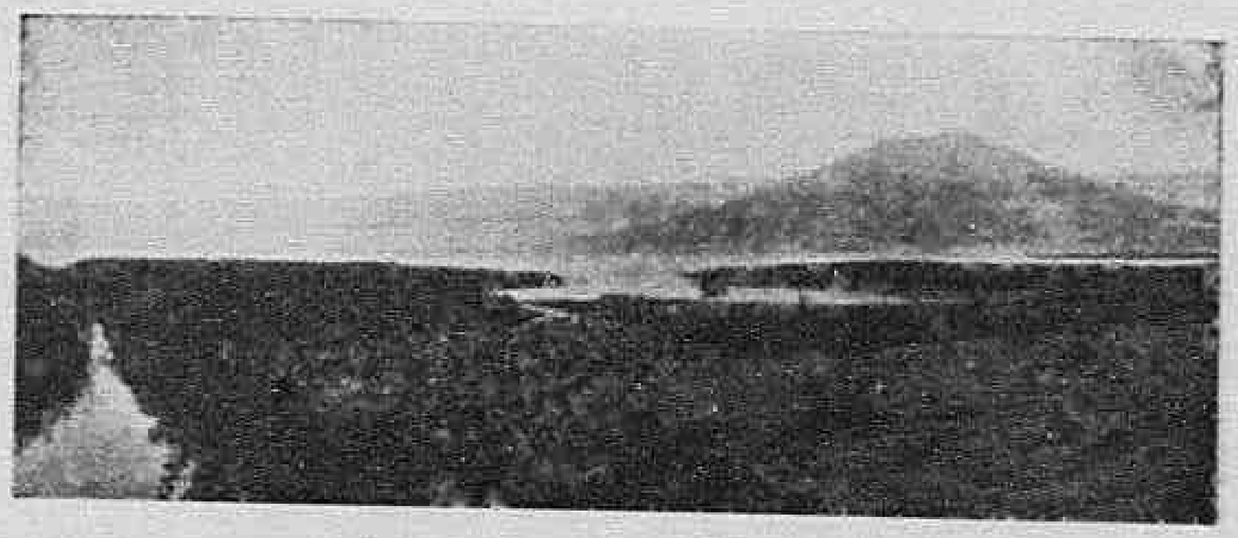

Fig. 8. — Le lac de Vico et son émissaire.

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6 millions en 1960.

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En 1945 Rome aura besoin d'au moins un demi million de Kwh par an. Autour de 1960 il en faudra un million, c'est-à-dire environ le triple de la consommation actuelle (figure 11).

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Le groupe montagneux de la Tolfa, contenant des minerais, en quantité peut-être bien plus grandes que celles prévues, a eu des périodes de prospérité et de renommée sur la fin du Moyen âge et cela grâce à son alumine, ses minerais de plomb et de mercure.

Dans le Lazio, immédiatement au Nord de Rome, prédomine actuellement, par contre, une grande prospérité.

Italie, est de 138 habitants au km², et que le Lazio septentrional n'en a que 38, il peut donc en recevoir encore 100 au km², par conséquent, au total, 200.000 habitants sur son étendue d'environ 2.000 k².

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Fig. 8. — Le lac de Vico et son émissaire.

Fig. 9. — Le lac de Martignano.

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XII. — *Résumé des principes techniques et des résultats économiques.*

Les solutions envisagées dans ce projet constituent un système efficace technico-économique dans l'état actuel de la technique et de la Loi Mussolini.

1. *Production maximum d'énergie électrique des eaux du Tibre et des autres cours d'eau moins importants.* — Le principe de l'intégration et de la conservation des énergies a été ultérieurement développé en comparaison des installations étrangères (allemandes, anglaises ou américaines).

Des six milliards de mètres cubes d'eau que le Tibre charrie chaque année, ce projet en utilise cinq.

2. *Protection des intérêts de l'Etat* par la valorisation maximum d'une ressource italienne, le revenu des dépenses engagées fourni par l'énergie électrique et les plus grandes rentes des terrains intégralement bonifiés.

3. *Utilisation des lacs naturels* sans grande dépense.

4. *Appuis pour la navigation aérienne :* De Rome à Orte, le Tibre, porté au niveau des campagnes, avec cinq bassins, en amont des Centrales, qui sont surélevés sur le niveau aval du fleuve, constituerait, sur une longueur de 100 km., une échelle fluide continue (fig. 5) à cinq gradins, très utile pour amérir dans n'importe quelle condition de vent et de vol (protection, en cas de guerre, des voies ferrées de Rome à Pise, Florence et Ancône).

5. *Aucune diminution des débits minima du Tibre :* Les eaux d'irrigation sont accumulées pendant les périodes de pluies et ne sont pas à être prises au Tibre pendant les périodes de sécheresse, donc son débit minimum ne sera pas diminué, car celui-ci recevant le déversement des égouts collecteurs de Rome, doit avoir toujours, pour diverses raisons d'hygiène un débit minimum le plus grand possible.

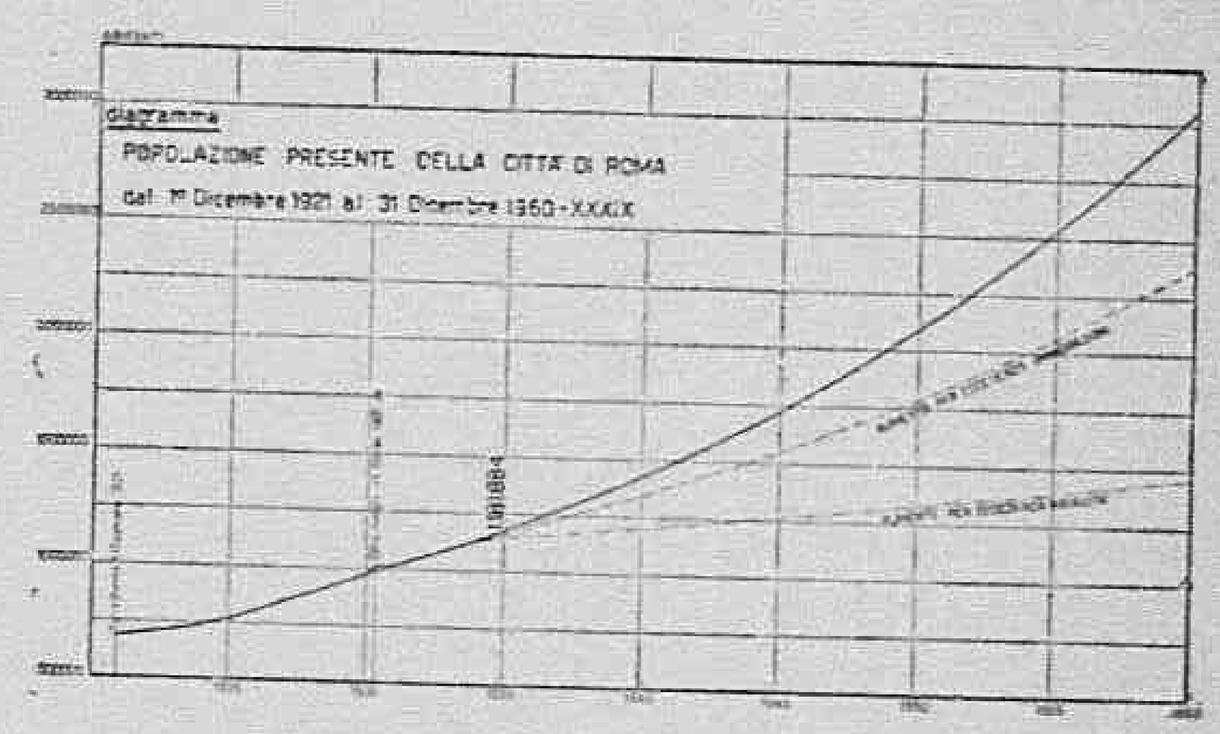

Fig. 10. — Augmentation de la population de Rome de 1921 à 1960 (*par excédent de naissance, par excédent d'immigration, par excédent total*).

6. *Capacité démographique des zones irriguées.* Les plusieurs dizaines de milliers d'hectares, aux portes de Rome, pourraient recevoir une immigration très appréciable, en soulageant la zone romaine et d'autres régions italiennes.

Traduit de l'Italien par
G. KOLOVITCH.

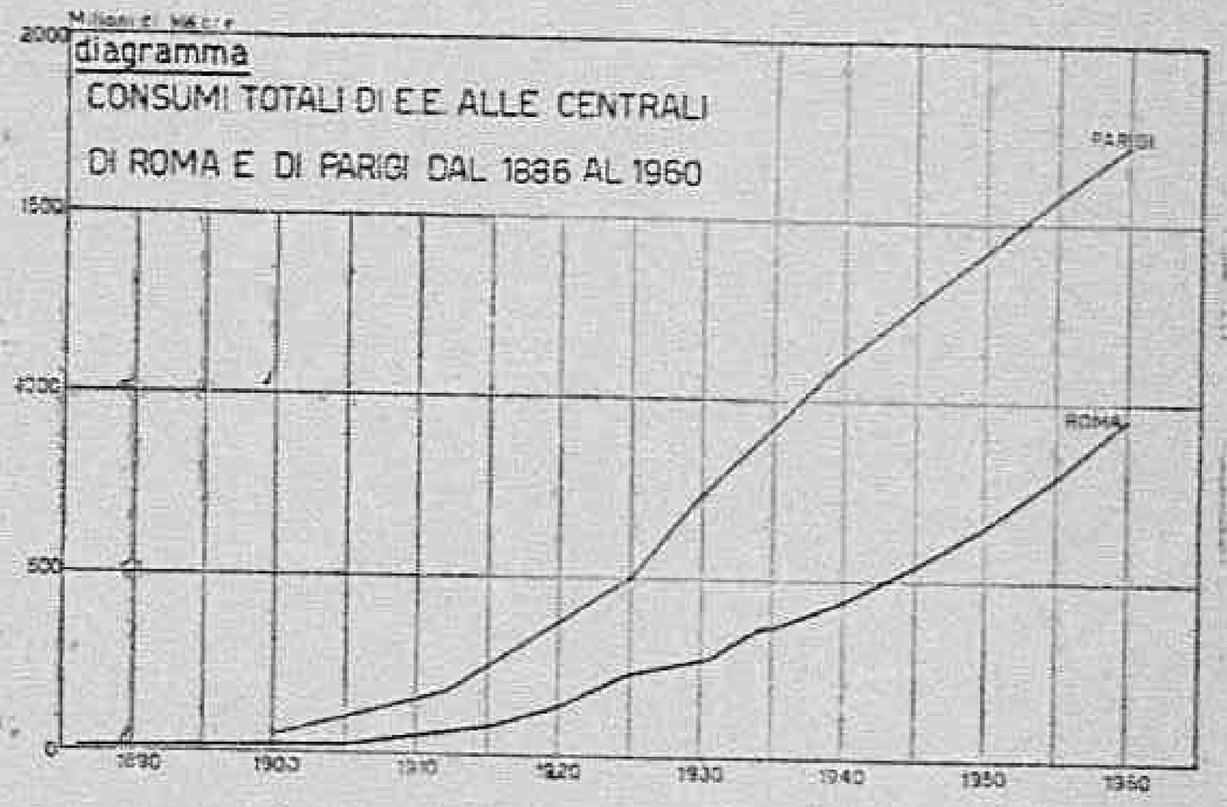

Fig. 11. — Consommation de l'énergie électrique de Rome et de Paris, du début de la distribution à 1960, rapporter aux centrales.

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HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

127

ACC/158/PWU

16 Sep. 44

Subject : Electricity Supply - Rome

To : CHAIRMAN ELECTRICITY CONTROL BOARD R.A.A.C.

1) - References your two letters W.H.H./va dated 12th Sep. 44.

2) - This Sub-Commission is shortly taking over the responsibility for the operation and maintenance of the Rome power plants.

3) - The particular questions you ask in para 1) (a) about the fitting of some devices which you say are difficult are not understood and it is suggested that you discuss the matter with the electrical division of this Sub-Commission if you require further information.

4) - As regard (b) and (c) it is observed that you have been experiencing difficulties with coal and oil supplies. This matter will have our attention.

W.W.LAWLER
Lieut-Colonel
Chief, Elec. Div.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

VHW/alg

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Tel. 459081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/159/PWU

6 Sept. 1944

Subject : Spotting of Important Electric Power Facilities.

To : Director Patriots Branch.

1. This will confirm the handing to your Captain T.B. Mc Nary by Major Virgil S. Renton of this Sub-Commission, a map marked to show important electric power facilities in North Italy. Data to mark this map was furnished by Captain Mc Nary.

2. This Sub-Commission will be pleased to be of any further assistance to you in this matter.

W. M. LAPPER
Lieut. Colonel
Chief Util. and Adm.Div.

176

Note. Captain Mc Nary wanted to locate certain power plants on a map. The location of most was known to Engineers in Transmission Dept. and they marked the map P.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 49081

VSP/edg

Nib 0

R 125

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AOO/158/PWU

6 Sept. 1944

Subject : Procurement of Electric Transmission Line Material.

To : Societa' Romana Elettricita'.

1. Because of a serious emergency which arose, it was necessary for the Headquarters Allied Control Commission to request your assistance in furnishing certain electric transmission line materials described below.

2. By making this material available, your company has made a valuable contribution in assisting the Allied Military Forces, and your help and cooperation is deeply appreciated.

3. It is believed that through a misunderstanding, there was no receipt signed for the material taken from your warehouse on 4 September 1944. The following material was obtained:

- 2521 kilograms stranded aluminium conductor, 50 square millimeters in cross-sections on 3 reels. (each reel contained 2,3 kilometers of wire).

- 30 Cable connectors.

4. Instructions have been given for the reels to be returned to you as soon as possible.

173

W. M. LAWLER
Lieut. Colonel
Chief Util. and Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

T-2. 48901 VSV/ads

124

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ADU/150/PWU 6 Sept. 1944

Subject : Procurement of Electric Transmission Line Material.

To : Azienda Comunale Elettricita' Acqua.

1. In order to meet a serious emergency condition which arose suddenly, it was necessary for the Headquarters, Allied Control Commission to request your assistance in furnishing certain electric transmission line materials described below.

2. As the result of making this material available your company has provided valuable help in assisting the Allied Military forces, and your cooperation is deeply appreciated.

3. It is believed that through a misunderstanding, there was no receipt signed for the material taken from your warehouse on 4 September 1944. The following material was obtained:

- 505 kilograms stranded wire 50 sq.millimeters in cross-section (about 3 kilometers);
- 100 conical wire connectors;
- 150 parallel wire clamps;
- 5 kilograms of solder.

172

W. M. LAPPER
Lieut. Colonel
Chief Util. and Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

171

PROF. ING. GIOVANNI SILVA
CONSIGLIERE E DIRETTORE GENERALE DELLA "CONSEL-
COMPAGNIA NAZIONALE IMPIANTI ELETTRICI

ROMA - VIA IGNAZIO PANT. 14
TELEF. 867-305

6 SEP Recd 15 CEB

PROMEMORIA PER IL SIG.ING. ERRERA

1230

Importazione di energia elettrica

a) L'energia elettrica è stata importata, negli ultimi anni, in quantitativi sempre più modesti che per l'ultimo anno di cui possediamo i dati (1943) non raggiungono l'1% del totale fabbisogno italiano. Nella tabella allegata abbiamo riportato i dati mensili dal 1938 al 1943.

b) L'importazione ha luogo dalla Svizzera attraverso i seguenti collegamenti:

- Vizzola (ex Lomberda) - Forze Motrici di Brusio.

Le Centrali della Società Forze Motrici di Brusio sono:

	Potenza installata kVA	Potenza effic. kW
Palù	10.000	8.500
Cavaglia	8.000	6.700
Robbia	14.000	11.000
Campocologno	37.400	30.000
	69.400	56.200

L'energia è immessa nella grande arteria della Valtellina (2 terne a 135 kV della Vizzola).

- Sip - Ofelti (Officine elettriche Ticinesi)

Il collegamento avviene a Ponte Tresa con una terna a 70 kV Ponte Tresa-Veveri. 170

Si ritiene che questo collegamento non consenta di ritirare più di 10 ÷ 15.000 kW.

Trasmesso
Send to Mr. C. Foppiano

Declassified E.O. 12356 Section 3.3/NND No. 785019

a) L'energia elettrica è stata importata, negli ultimi anni, in quantitativi sempre più modesti che per l'ultimo anno di cui possediamo i dati (1943) non raggiungono l'1% del totale fabbisogno italiano. Nella tabella allegata abbiamo riportato i dati mensili dal 1938 al 1943.

b) L'importazione ha luogo dalla Svizzera attraverso i seguenti collegamenti:

- Vizzola (ex Lomberda) - Forze Motrici di Brusio.

Le Centrali della Società Forze Motrici di Brusio sono:

	Potenza installata kVA	Potenza effic. kW
Poschiavo	10.000	8.500
Cavaglià	8.000	6.700
Robbia	14.000	11.000
Campocologno	37.400	30.000
	69.400	56.200

L'energia è immessa nella grande arteria della Valtellina (2 terne a 135 kV della Vizzola).

- Sip - Ofelti (Officine elettriche Ticinesi)

Il collegamento avviene a Ponte Tresa con una terna a 70 kV Ponte Tresa-Veveri. 170

Si ritiene che questo collegamento non consenta di ritirare più di 10 ÷ 15.000 kW.

Translate
Send to Dr. Col Rapper
For information

Copy of translation
to me

Declassified E.O. 12356 Section 3.3/NND No. 785019

123B

- <u>Comacina - Officina Elettrica Comunale di Lugano</u>

Il contratto origimale (1926) contemplava una potensa a disposizione di 3.000 kW; successivamente (1933) tale potenza a disposizione è stata ridotta.

- <u>Prealpina (già Varesina) - Officina Elettrica Comunale di Lugano</u>.

Come sopra.

26 agosto 1944

<u>1 allegato</u>

169

Declassified E.O. 12356 Section 3.3/NND No. 785019

ENERGIA IMPORTATA IN kWh

	1938	1939	1940	1941	1942	1943
Gennaio	24 592	17 694	27 904	21 561	18 484	23 344
Febbraio	25 804	15 297	26 313	20 844	15 531	18 644
Marzo	26 671	25 509	26 785	30 426	19 092	22 786
Aprile	23 445	19 160	25 723	26 301	23 622	19 560
Maggio	14 373	18 438	16 512	14 806	18 550	17 228
Giugno	8 349	13 305	11 450	11 142	15 498	21 863
Luglio	16 259	12 483	10 895	12 034	21 810	22 112
Agosto	24 094	14 137	23 424	14 607	25 863	20 174
Settembre	23 401	15 120	27 910	25 876	27 563	16 630
Ottobre	19 285	16 456	17 481	17 569	19 612	4 452
Novembre	19 231	19 799	17 650	16 075	19 550	4 200
Dicembre	18 820	24 634	20 256	20 702	22 113	441
Totale annuo	244 324	213 032	252 303	231 943	247 088	191 434
Totale produzione (idraulica + termica + importata)	15 352 486	17 710 616 (1)	18 831 725	20 094 080	19 609 558	—— (2)
% dell'importata	1.59	1.20	1.34	1.15	1.26	

(1) Dal 1939 in poi è compresa la Libia
(2) Mancano i dati dell'Italia Meridionale, Insulare e Libia

Declassified E.O. 12356 Section 3.3/NND No. 785019

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Copy Provided
Fiel Sub

title 158

12 Aug

AMB FIFTH ARMY

26 Aug

RESTRICTED

NQ AOO

SCOTTIE

2337

Public Works & Util.

261625

REFERENCE YOUR 262 OF 26 FP PAGE AG AMB FIVE ARMY FOR GAITHER
PAGE AGO FOR LAVERN CLARK OFFICE SIGNAL PAGE YOS WEDNESDAY

Major Bell

Declassified E.O. 12356 Section 3.3/NND No. 785019

Air 15/8

121B

7 September 1944

Subject : Visit to Electric Power Facilities, Cagnano Area.

To : Chief, Electrical Division.

1. Electric power facilities in the Cagnano area were visited by Major Price, Lt. Wade-Brown, Sig. Toscano, Signor D'Arcola and myself yesterday.

2. We first visited the Cagnano generating station. The work still to be done is as follows:

(a) Line the penstock with cement.

(b) Finish the discharge canal.

(c) Install the electrical control system.

(d) Erect th electrical equipment in the outdoor substation (At the present time, only the foundations and bus supports have been built.

3. The station superintendent said that he expected that the plant would be available about the last of December (we are carrying this plant as coming in by 15 December, and I suggest that we retain this date for the present). We were informed that sufficient cement was being made available at Calitorro, and that they were not in need of any other material.

4. We went to Cagnano Substation but did not inspect the sites thoroughly. The Roman and railway substations are adjoining. The Roman substation was fed from several nearby generating stations, the largest being Cagnano Generating Station. Prior to the war, there were 2-20 KV lines between Cagnano Generating station and the Cagnano substation of the Roman company. At least one of the lines has been repaired but it is not clear to me whether both have been fixed. It is over this connection that Cagnano substation will receive energy from Cagnano Generating station. The incoming energy will be stepped from 20 to 60 KV through the use of two transformers which are in the nearby railway substation, and were almost undamaged. It is planned to leave the transformers in the railway substation.

5. The Roman substation at Cagnano has been badly damaged and no attempts are yet being made to repair it. It was from this substation that two lines ran to the South to S.M.R. and two lines to Cecchi.

166 .55

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121

6. We went to the Cepeano generating station. They are repairing on two units and preparing the third for shipment to Angeria. The superintendent of construction told us they hope to have the first small unit turning over by 30 September, and that sometime later it will be dried out and carrying load. They hope to have the large unit on the line between 15 October and 1 November. (We are carrying both units to come in by 15 October). They have discovered some leaks in the penstock and were checking yesterday to learn more details.

7. We went to Ceccano substation. Of the two 60 KV lines between Cepeano and Ceccano substations the copper conductor-steel tower line has been repaired. The aluminium conductor-concrete tower line has not been repaired, and I do not know if plans exist for its early repair. There is a damaged copper conductor-concrete tower line running out of Ceccano to a nearby industrial plant. Conductor from much of it has been recovered and brought to the Ceccano substation. Work is presently being done on the outdoor structure in order to tie the Cepeano and Ceccano-Segni lines together. There is a 60/20 KV - 4000 KVA transformer in the Ceccano yard, undamaged, except for several radiators. This transformer was used for 20 KV distribution in the surrounding area. I do not know whether the 20 KV system will first be energized by this transformer or from a point further north. The 60 KV line out of Ceccano to Segni is repaired to Segni and beyond.

8. We learned from a line crew that there are presently four crews on the lines, two working on the 60 KV line between Segni and the junction with the 150 KV Marino-Cine Citta' line, and two working on the 150 KV line west of the junction. It is hoped that the line between Segni and Cine Citta' will be finished by 9 September.

9. There is some confusion regarding food and petrol for the transmission crews. Lt. Wade-Brown has given the S.I.R.E. Company both materials in at least the quantities they requested; yet yesterday, we were told that neither had been obtained by the transmission crews. Ing. Toscano is going to accompany an engineer of the electric company to discuss the matter with one of Lt. Wade-Brown's engineers. It looks to me as if there is some confusion in the Roman company as to the way of obtaining material but I believe that it will be straightened out.

WIRAL S. REYNOR
Major, Infantry
Chief, Operations and Transmission Department

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Distribution :
- Col. W.H.Lapper
- Major Berry
- Lt. Wade-Brown
- Ing. Toscano

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 46901

VSR/cdg

HEADQUARTERS
ALLIED CONTROL COMMISSION
Publi Works and Utilities Sub-Commission
APO 394

6 Sept. 1945

AOI/158/PWU

Subject : Procurement of materials for Larderello Colle Val d'Elsa and Siena-Castelnuovo Transmission lines.

To : Chief, Electrical Division.

1. Because some details incident to the procurement of materials for the Larderello-Colle Val d'Elsa, and Siena-Castelnuovo transmission lines may be of interest in the future, the following facts are set out:

2. Major Lee, Regional Engineer, Region VIII, A.C.C. was asked by the Fifth Army, through Captain Gaither, Fifth Army A.M.G., on or about 30 August, to rehabilitate the Larderello-Colle Val d'Elsa and Siena-Castelnuovo transmission lines, as soon as possible. These lines normally operated at 30 KV, and their completion would insure two supplies to both Siena and Florence.

3. Fifth Army A.M.G. agreed to provide all necessary transport for the work. Major Lee planned to use civilians to do the work. He had received a release order prepared by the Commerce Sub-Commission for the following quantities of material at the plant of Spolettificio R.E. di Via Flaminia, Via Guido Reni, Rome:

- 6,000 Kilograms 50 sq.mm. stranded copper wire;
- 5,000 or 6,000 Kilograms 28 sq.mm. solid copper wire (both figures appeared on the release order, in different places);
- 1,000 Kilograms (? sq.mm.) solid copper wire for binding;
- 15 Kilograms of pure tin.

4. Major Lee sent two 5th Army trucks to Rome on 2 September to transport the materials. At the Spolettificio plant, attaches said that such a quantity of copper had never been stored there, and that there had recently been received at the plant, several other orders emanating from the Commerce Sub-Commission, and requesting the release of copper.

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5. Captain L.W. Laughlin, learning of the difficulty, telephoned Captain Austin of the Commerce Sub-Commission. According to Captain Laughlin, Captain Austin promised to look for other places where copper might be available and stated that he would be in his office on the following day, 3 September (Sunday). Twice during 2 September Eng. Colamarino went to the Spolettificio plant to learn whether copper was available.

6. Because the available information was not altogether clear, Eng. Colamarino and Errera went to the plant on Sunday morning, and satisfied themselves that no copper was on hand at the plant and that with the exception of an order for 1400 kilograms solid copper wire and 7000 metres of lead covered cable (no other details were available), there had not been other any requisitions for wire filled at the plant.

7. on Sunday, 3 September. An unsuccessful effort was made to reach Captain Austin in his office. Captain Laughlin stated that he called Major Wood, Captain Austin's superior and elicited the information that "Captain Austin will be back tomorrow" (Monday 4 September).

8. Captain Laughlin and myself then visited the Commerce Sub-Commission offices. It was near lunch time and Colonel Evans was the only officer present. The urgency of the situation was explained to him and he promised to try to locate Captain Austin, and to have him come to the office, in the afternoon.

9. At about 1500 hours, I called Captain Austin's office, received no reply, and called Major Wood. He was unfamiliar with the situation and I referred him to Col. Evans. He subsequently called me, stating that he had learned from the Local Resources Branch that copper conductor was not known to be available in any other location, and that in his opinion, the material did not exist. He disclaimed knowledge as to the origin of the report stating that copper was on hand, stating that the report had come from the office of Captain Austin, who was not in. I asked him if the report might have come from Region IV. He agreed to inquire, and later called me, and said that he could locate no one in Region IV who knew of the report, believed that he had done everything possible, and would leave a message for Captain Austin to call me on the following morning.

10. In the meantime, I telephoned the following officers in order to try to locate same conductor material:

Officer	Remarks
Capt. Lund, Military Railway Service	Reported to me on two times. Checked Peggs and the stores. No wire.
"X" Branch, Signals (Phone, Advance Pilot 68)	No wire.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Major William Rivett No 2 C.E.Works	Major Rivett unavailable.
Major A.W. Page 11 C.E. Works.	No wire. Said he had no stores and that it had always been necessary for him to strip other lines to obtain material.
Captain Rowberry Office D.D.W., A.A.I.	No wire available. Said he had discussed matter with Lt.Colonel W.A.R. Smith who said that there was a great deal of copper around and that he could see no reason for using material from other sources.
Captain Rose Advance P.B.S. Engineer Service.	Said Col. Cooly unavailable. Expressed belief that wire might be available at E-252 Dump, and suggested I talk to Col.Davis at P.B.S. Engineer Service.
Lt. Col. Davis P.B.S. Engineer Service	At first said no wire was available but after half hour reported that there was 1800 feet of one size of wire and 1200 feet of other size at E-252 Dump, and said that Colonel ~~Cooley~~ Cooley had much wire.
Captain Foley Advance P.B.S. Engineer Service.	Made second attempt to contact Colonel Cooley who was still unavailable but who would return at 1900 hours of the same day.
Colonel Cooley Advance P.B.S. Engineer Service.	Said no new wire was available; that much wire was on unused lines.

11. At the same time the telephone inquiries were being made, Eng. Toscano communicated with several engineers of the Societa' Nazzare di Elettricita' and learned that a quantity of aluminium wire was on hand in their stores. Eng. Toscano was instructed to go to the Nazzara offices on the following morning (4 September) and learn the details of the wi-

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Declassified E.O. 12356 Section 3.3/NND No. 785019

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12. On the morning 4 September, Major Price, Eng. Errera and myself went to the Azienda Comunale Elettricita' Acque offices in Rome and discussed the situation with Eng. Angelucci e Bordoni. They stated that Azienda Comunale Elettricita' Acque had many cable connectors available but only between 9 and 10 kilometers of 50 sq.millimeters aluminium cable. We later asked them to make the arrangements for us to take 3 kilometers of cable, 100 conical cable clamps, 150 parallel clamps, and 5 kilograms of solder.

13. We then went to the Romana offices and informed Eng. Rovelli of our needs. He expressed willingness to help, notwithstanding the need which his own company has for the material. We asked him for 19 kilometers of wire, and he offered us 20, so that we could have complete reels. He also offered us 30 cable clamps. We accepted both. He told us that there is a considerable amount of wire, still on railway cars in Rome, and which had been removed by the Germans. He said that this wire belonged to his company, and asked that we help him to get it back. We promised that we would do this.

14. Eng. ~~Colamarino~~ Errera and I went to the storehouses of each company to view the material, and also went to the Spolettificio plant where we arranged for the release of 15 kilograms of pure tin.

15. Sergeant Ansivino was present at the loading of the trucks. He signed a receipt for the pure tin at the Spolettificio plant. He did not sign receipts for the material removed from Azienda Comunale Elettricita' Acqua and Societa' Romana Elettricita' plants. I will arrange for these receipts to be sent to the respective companies, together with a thank you note. On 5 September, a letter was written to the Regional Engineer, Region VIII transmitting receipts and requesting that they be signed and returned.

16. In a discussion with Major Wood and Captain Austin on the Sept. 4th, I was told that they believe that the copper conductor never was at the Spolettificio plant; that they did not understand how the release order had been released, but it looked as if someone had "guessed" that the material was at Spolettificio.

17. As to the argument that the conductor should have been stripped from other lines, I do not feel that there was sufficient time to strip any lines before rebuilding others. Were more time available I would have asked that this be done.

161

Vinal S. Renton
Major, Infantry

Distribution:
Original to Col. Lapper
1 copy to Major Renton
1 copy to Major Price

Declassified E.O. 12356 Section 3.3/NND No. 785019

SOCIETÀ ROMANA DI ELETTRICITÀ

(da segnarsi dal Magazziniere)

Parte da restituirsi a cura dell'utente del buono

BUONO DI PRELEVAMENTO N° 18708

Dal Magazzino FLAMINIA

Per il lavoro

Pratica N.

Ord. lav. N.

Capitolo contabile	Numero di catalogo	DENOMINAZIONE DEI MATERIALI	RICHIESTA (parte che va riempita dal richiedente) Unità di mis.	Quantità	CONSEGNATA (parte che va riempita dal magazz.) Unità di mis.	Quantità
	5835	Morsetti bifilari a due bulloni per corda alluminio ola mmq. 50	N°	30 -		30-

M Rutiglio

Le quantità consegnate sono state riscontrate esatte

Il Richiedente

Roma, li 160 6 6

Il Magazziniere

Il Richiedente

Declassified E.O. 12356 Section 3.3/NND No. 785019

SOCIETÀ ROMANA DI ELETTRICITÀ

N.
(da segnato dal Magazziniere)

(Parte da restituire all'emittente del buono)

BUONO DI PRELEVAMENTO N° 18707

FLAMINIA

(Pratica N. 1

dal Magazzino

per il lavoro

(Ord. lav. N. 1

Capitolo contabile	Numero di catalogo	DENOMINAZIONI DEI MATERIALI	RICHIESTA (parte che va riempita dal richiedente) Unità mis.	Quantità	CONSEGNATA (parte che va riempita dal magazz.) Unità mis.	Quantità
	65	Cavo telefonico a 2 mm 50 - Doppino N.		8		2321 -

prelevato dalla Commissione Centrale di Controllo Lottizzazioni Lavori Pubblici per sopralluogo Linea Tangenziale Est (Tuscolano)

Le quantità consegnate sono state ricontrate esatte

Il Richiedente

Roma, li 6-9-1955

Il Magazziniere

Il Richiedente

(ed. G.I. Tricchi - Vit. 61)

Declassified E.O. 12356 Section 3.3/NND No. 785019

ALLIED FORCES
ALLIED CONTROL COMMISSION
COMMERCE SUB-COMMISSION
APO 394

120B4

RELEASE ORDER NO. ACC. 733 18 Aug. 1944. DEMAND NO. ACC. 0-8

TO : Regional Commissioner - Reg.VIII
attn.Economic & Supply Division
for Società Elettrica Selt-Valdarno

REFERENCE: your form MAT 10, 24 July=AFLR(I)B, R/O No532, 12 Aug.

1. The following items have been released to you by

Commerce Sub Commission HQ.ACC :

ITEM	MATERIAL	QUANTITY	FOR PERIOD
a.	Stranded Copper wire	Kilos 6,000	see reverse
b.	Solid Copper Wire	" 6,000	see reverse
c. Urge	Soldering tin Pure	" 25/5	
d.			

2. The above items will be collected by you from stocks located at:

Spoletificio R.E. di Via Flaminia
Via Guido Reni
Roma

3. Collection should be made by 30 September 1944, failing which this Release Order ceases to be valid.

4. Remarks

Encl I form MAT 10

Lawson Brig.

for L. E. EVANS
Colonel,
Director, Commerce Sub Commission.

158

Copy To:
~~Regional Commissioner Reg. IV~~
~~Economic & Supply Division~~

Form ACC-MAT No. 11
APPROVED.
Economics and Supply Division, R.C. Region VIII.

Rd Whalwood.

Regional Commissioner - Reg.VIII
attn.Economic & Supply Division
for Società Elettrica Selt-Valdarno

REFERENCE: your form MAT 10, 24 July-AFLR(I)B, R/O No532, 12 Aug.

1. The following items have been released to you by

Commerce Sub Commission HQ. ACC :

ITEM	MATERIAL	QUANTITY	FOR PURPOSE
a.	Stranded Copper wire	Kilos 6,000	see reverse
b.	Solid Copper Wire	" 6,000	see reverse
c.	Urgl Soldering tin	" 25 15	
d.			

2. The above items will be collected by you from stocks located at:

Spolettificio R.E. di Via Flaminia
Via Guido Reni
Rome

3. Collection should be made by 30 September 1944, failing which this Release Order ceases to be valid.

4. Remarks

Encl I form MAT 10

Copy To:
~~Regional Commissioner Reg. IV~~
~~Economic & Supply Division~~

Lawood
for J. P. EVANS
Colonel
Director, Commerce Sub Commission

158

Form ACC-MAT No. 11
APPROVED.
Economics and Supply Division, H.Q. Region VIII.

22 Aug. 44.

R. H. Mallett
C.M.R. MALLETT D.
Lt. Col.
Economics and Supply

Declassified E.O. 12356 Section 3.3/NND No. 785019

6,000Kilos Stranded Copper Wire
Uog × 5,000 Kilos Solid Copper Wire
1,000 Kilos Solid Copper wire
(for binding)

Italian size	U.S. size
50 Sq. mm. section	No 0
28 " " "	" 3
" " "	" 8

Lue Eng.

Mr. Lee
Blk Sec
Mr. Lee Reg Eng
Regional Eng

Expense
45-65-1

Room 4-8
191

HEADQUARTERS R-G/CA
23 AUG 1945
OFFICIAL
ACC

Declassified E.O. 12356 Section 3.3/NND No. 785019

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1-

1204

L. Pardo

Oviedo, Asturias

for $1.50 each additional page

Ex. Solicitud 112

157

Fil. 60676

Declassified E.O. 12356 Section 3.3/NND No. 785019

5 SEP Read 158 Cab.

Roma addì 2 SET 1944 N° 119 B

Ministero dei Lavori Pubblici

Direz. Gen. Serv. Tecnici

N° 224

Al Gr.Uff. Dott.Ing.
MARCO VISENTINI - SEDE
e, per conoscenza/
Lt.Col. L.A. JENNI - Direttore
Sottocommissione LL.PP. e Servizi
A.C.C. ROMA

N° Div.

Oggetto: Danni agli impianti elettrici e richiesta di materiali e macchinari -

La Commissione Alleata di Controllo raccomanda che i funzionari incaricati dei servizi elettrotecnici si mettano subito in relazione con l'Ufficiale specialista alleato nelle zone che via via vengono liberate, allo scopo di rendersi subito conto di tutte le necessità.

Inoltre é necessario che i funzionari siano mantenuti al corrente delle richieste, presentate dalla Compagnia di Elettricità, Gas ed Acqua, per materiali, macchinari e parti di ricambio.

Tali richieste dovranno essere comunicate sollecitamente a questa Direzione Generale che dovrà trasmetterle al Direttore della Sottocommissione LL.PP. e Servizi della A.C.C.

Prego impartire con urgenza le necessarie istruzioni agli Uffici dipendenti.

GER - / IL DIRETTORE GENERALE

Lt Col Rhodes
Engineer Sect

Permits & Sales
Mar 8/9

b.a.

156

Declassified E.O. 12356 Section 3.3/NND No. 785019

194

Translation

Rome, Sept.2nd 1944

Ministry of Public Works.
General Direction of
Technical Services.

No.224.

To: Gr.Uff.Dott.Ing. Marco
Visentitni - "Sede" -
and for the attention of:
Lt.Col.L.A. Jenny,
Director of P.W.& U. S-C ACC
Rome

Subject: Damage to electric plants and
request for materials and machinery.

The A.C.C. recommends all off cials charged with electro-technical services to get immediately into touch with the specialized Allied Officer in the areas that are gradually liberated, in order to get an idea at once all the requirements.

It is also necessary for off cials to be kept posted with regard to the requests for materials, machinery and spare parts made by the Company for Electr city, Gas and Water.

This General Direction will have to be informed promptly about these requests and it will have to forward them to the Director of the P.W.& U. Sub-Commission of the A.C.C.

Please impart the necessary orders at once to the Offices depending from you.

for the Director General

(signed: Faccenda)

Declassified E.O. 12356 Section 3.3/NND No. 785019

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5 September 1944

Subject : Information Concerning Larderello-Castelnuovo Transmission Line, 5 September.

Major Lee, Regional Engineer, Region VIII telephoned me today in connection with construction on the Larderello-Siena-Castelnuovo transmission line. He reported the following:

(a) The aluminum conductor and other material which we sent by truck yesterday arrived this morning.

(b) A British engineer officer had a copy of a letter apparently given to him by Major Nivett, No 2 CMU and which had reportedly come from Lt. Col. W.A.R. Smith stating that the portion of the line from Larderello to Colle Val d'Elsa was unnecessary from military consideration. Major Lee stated that in spite of that letter he was going to continue construction. I told him to go ahead. (Later I asked Captain Rosbery, Office of D.P.W., A.A.I. if such an instruction had been issued. He said that it had not been; that there had been a misunderstanding).

(c) That he was supervising the construction of the Larderello-Colle Val d'Elsa line and that he hoped to have it finished in one week from today.

(d) That he was supervising the construction of the Siena-Castellina line and that he hoped to have it finished in one week from today.

(e) That the 93 CMU has taken over construction of the Castelnuovo-Tavarnelle line and that the completion date is from 8 to 10 days from today. They still have about 60 pylons down and will run a temporary line to by-pass this section.

(f) That he may want allocation of 650 kv of power from Castellina to Siena, and he wanted to know how to obtain it.

(g) That the Fifth Army has installed 800 Kw of portable generating equipment in Florence and that Captain Gaither plans to ask for a block of power.

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VIRAL B. NEWTON
Major, Infantry
Chief, Operations and Transmission Department

Distribution:
- Lt.Col. Lapsley
- Ing. Toscano
- Operation Department

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Declassified E.O. 12356 Section 3.3/NND No. 785019

RESTRICTED 15th Feb

ALLIED CONTROL COMMISSION

INCOMING MESSAGE

HEADQUARTERS 4 AUG 1944 A. C. C.

TO: ACC FOR LAPPER

SIGNAL MESSAGE CENTER No: 60/29

FROM: ENGR SERVICE PBS FWD

CLASSIFICATION: RESTRICTED

REFERENCE No: PENBASE FWD 93

PRECEDENCE: NONE

DATE AND TIME OF ORIGIN: AUG 291125B

OFFICE OF ORIGIN: CITE: FPENG FWD

TURBO ALTERNATOR PARTS NOT REPEAT NOT AT ANIC. REURAD 226 CITE 2328 DATED 27 AUGUST. WILL ADVISE IF LOCATED ELSWHERE.

ACC DIST

ACTION

Act: Allen (2)
Info: Alpe
Lem Sc
File (2)
Plapt
Maj Brown Elb
Beulen RL
White

Called Capt Calvery 31 Aug 44 and passed information; Lt Col Gerard & Marinelli Lt White

DATE and Time of RECEIPT AUG 30

Distribution:

RESTRICTED

Declassified E.O. 12356 Section 3.3/NND No. 785019

116B

30 AUG Recd
15 Feb

Allied Force
MILITARY RAILWAY SERVICE
Office of Director General

A.P.O. 400
27 August 1944.

Subject: Transfer of Electrical Equipment.

To: Allied Control Commission, Public Works and Utilities Sub-Commission, APO 394, USArmy.

75

1. Reference is made to your letter of 19 August 1944 on the removal of three transformers from the Anversa Power Station.

2. The Director General, Military Railway Service, has entire control over and is responsible for all Italian State and privately owned railways. The proper distribution of available resources of equipment, to meet the operational requirements of the Supreme Allied Commander, is one of the responsibilities of the Director General. The authority of the Director General is granted by AFHQ in their General Orders No. 60, 22 October 1943, and General Orders No. 19, 5 August 1944.

3. Removal of any equipment or material from ISR property without the prior consent of the Director General will not be permitted. The request in Paragraph 2 of above reference is approved.

4. Requests for railway material or equipment may be submitted by you through the Transportation Sub-Commission of ACC who understands that requests will be cleared through the Director General, Military Railway Service, or in case of emergency, by 'phone or telegraph direct with the DG MRS.

CARL R. GRAY, JR.
Brigadier General, USA
Director General

cc
Directorate of Works, AAI, CMF
Tn. Sub-Com., ACC

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16 AUG Rec'd

158 cas

PW&U 66

116A

SUBJECT: Electrical Plant - 1 District

Directorate of Works,
HQ AAI CMF

2107/DW
15 Aug 44

C.E. 1 District

Ref your CE 3034 of 10 Aug.

Approval is hereby given for you to remove three 60,000/6,000 volt 850 KVA Transformers at present located in ANVERSA (SUGGITTORIA) Power Station (M.R. G.8477) complete with 6,000 volt switch gear. These transformers will be installed, it is understood, at:

(i) RECANATI Sub Station

(ii) FALCONARA Sub Station

(iii) Held as spare at ANCONA. (may be required by 3 Dist plan for 66/10

Please keep this HQ informed of any changes in your plans.

2. Arrangements have been made with the Chief Electrical Engineer, H.Q. A.C.C. to effect the necessary transfer of the property from Italian State Railways to the U.N.E.S. Company and to co-ordinate the removal with D.C. M.R.S. It is, however, permissable for you to remove the transformers and switchgear forthwith.

W.A.R. SMITH
LT.COL. RE
FOR BRIGADIER,
DW.

Copy to: Chief Electrical Engineer
Public Works & Utilities Sub Commission
HQ ACC.

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dy Col 14/8

Declassified E.O. 12356 Section 3.3/NND No. 785019

4-1

SUBJECT:- Electrical Intelligence. 27 AUG Recd 158 Cases.

HQ ALLIED ARCOS IN ITALY. PW & W 115

Tel: PIEPOT 317 7449

2065/DW

26 Aug 44.

HQ A.C.C. FOR Public Works & Utilities Sub Commission.

1. Enclosed for your information and retention are:-

I. Particulars of UBS 60 KV Substations
II. Particulars of UBS3 30 KV Substations
III. Particulars of Valcarno 120 to 30 KV Substations
VI. List of Valdarno Hydro stations 100 to 5000 KW Capacity.
V. List of UBS Hydro stations.

FILE

HEADQUARTERS 27 AUG 1944 A.C.C.

R.T. HARRIS,
Major, R.E.
for Brigadier,
Director of Works.

Attached to Electrical Intelligence Report by Major Harris dated 26 Aug 44 and returned by Commission Vth

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LWL/ac

Tel. 489 081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

ACC/158/PWU

7 Sep. 44

To : HQTRS 5th ARMY AMG
Att. Capt. Gaither

1) - Attached is copy of the log of Major Bell for the period August 28 to September 5 inclusive.

W.M.LAFFER
Lieut.-Colonel
Chief, Util. & Adm. Div.

1 enclosure

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Declassified E.O. 12356 Section 3.3/NND No. 785019

148 113

Tel. 489 081

LWL/ec

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

ACC/158/PWU

7 Sep. 44

To : HQTRS REGION IV
att. Regional Engineer Lt.Wade-Brown

1) - Attached is copy of the log of Major Bell for the period August 28 to September 3 inclusive.

W.M.LAFFER
Lieut-Colonel
Chief, Util. & Adm. Div.

1 enclosure

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147

Declassified E.O. 12356 Section 3.3/NND No. 785019

0

9ie 112

Tel.:489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO 394

LWL/ao

ACC/158/PWU

7 Sep. 44

To : Hqtrs REGION VIII
att. Regional Engineer Maj.Lee

1) - Attached is copy of the log of Major Bell for the period August 28 to September 5 inclusive.

W.M.LAPPER
Chief

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Declassified E.O. 12356 Section 3.3/NND No. 785019

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LWL/ac

Tel. 489061

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS & UTILITIES SUB- COMMISSION
APO 394

ACC/158/PWU

7 Sep. 44

To : P.B.S. ENGINEERS
Attention Lt.Col.Coley

1) - Attached is copy of the log of Major Bell for the period August 28 to September 5 inclusive.

W.M. LAPPER
Lieut-Colonel
Chief, Util . & Adm. Div.

1 enclosure

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PBS JUL Rec'd
PBS 062
Rec'd

Econ Sec.
4-3800

HEADQ... 2-AUG 1944 A.C.C. 110

HEADQUARTERS
PENINSULAR BASE SECTION
A. P. O. 782

AG 671 BPENG (30 June 44) PW-4 30 JUN 1944

SUBJECT: Requisition of Calcium Hypochlorite for the Acquedotto di Napoli.

TO : Chief Commissioner, A.C.C., APO 394.

1. Mr. Betta, Chief Engineer of the Acquedotto di Napoli, has requested that 3000 pounds of high-test calcium hypochlorite be made available to his company for chlorination of the Bolla Aqueduct water. It is necessary to use Bolla water in the Naples system due to very heavy use during hot weather. The water requires chlorination before use.

2. The issue of 3000 pounds of high-test calcium hypochlorite by PBS Engineer Supply Officer has been approved. It is requested that you present a requisition to the Engineer Supply Officer, PBS, for 3000 pounds of high-test calcium hypochlorite for the Acquedotto di Napoli, stating that the issue is to be made in three monthly issues of 1000 pounds each.

3. It is requested that a copy of this letter be presented with the requisition.

For the Commanding Officer:

L. F. Nickel

L. F. NICKEL,
Lt. Colonel, A. G. D.,
Adjutant General

Lt. Alberis

Send letter to R.E. III — & ask him to forward attached copy of letter (Enclose the copy of this letter).

GER 145

4/7.

Tel. 409081 VSR/cdg

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACQ/158 /PWU 5 Sept. 1944

Subject : Transmittal of receipt for electric transmission-line material.

To : Regional Engineer
Headquarters. Region VIII A.C.C.

1. Transmitted herewith are three copies each of the receipts covering material for the Lardarello Castelnuovo transmission-line. This material was shipped by truck from Rome on 4 Sept. 1944.

2. It is required that two copies of the receipts be signed and returned to this Headquarters.

3. It would be appreciated if the 8 wire reels were returned to this Headquarters at your earliest convenience.

W. M. LAPPER
Lieut. Colonel
Chief Util. and Adm.Div.

3 Enclosures: Receipts 3 copies each.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
PUBLIC WORKS AND UTILITIES SUB-COMMISSION
APO #390

EJB/ao

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5 Sep. 44

ACC/A58/PWU

Subject : # 5 Unit Papigno Generating Station

To : Lt.Col.W.M.LAPPEN, Chief Util. & Adms Div.

The work of restoration has been set up on a later schedule than Colleto for the following reasons :

(a) - The placing of all four Colleto sets in operation will use all the available water and No 5 unit at Papigno will not increase the output of Kilowatts but only the power available.

(b) - Up to the present time no transformer is available 6/70 KV for the No 5 unit.

(c) - The restoration of sufficient part of the old building and roof to protect this unit.

Rebuilding overhead crane and major repairs to 120 KV substation thru which the output of this unit is distributed.

The damage to the turbine itself is apparently not extensive.

The alternator has been severely damaged to the following extent one sixth of the stator windings completely destroyed, and one half of the frame destroyed.

The shaft damage has not been determined as to alignment because it has been impossible to rotate the machine due to the broken frame.

It is estimated by the company that temporary supports and the work of repairing the crane and removal of the shaft for inspection will take forty days.

In the event the shaft is out of alignment this work and repairs to the alternator are estimated to take ten months.

E.J.BARRY
Major C.E.
Public. W & U Sub-Com.

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File in 158

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FILE ELECTRICITY

I T A L Y

see file in Lt.Col. Lapper's office dealing with :

Requisition for Electric Power Plants

Declassified E.O. 12356 Section 3.3/NND No. 785019

file 158 196

AUG. 15

AURELIA STEAM PLANT : "Prodotti Chimici Nazionali"

Eng. Corbino Romana Co. Suggests that in case of operation the plant must operate at 50 cycles - connetsd in a special Civitavecchia network - where the most important customers (cement mill.port etc.) Are ready for operate at 50 cycles.

After a new inspection and the necessary trials Romana Co. consideres the operation of Aurelias steam plant convenient only if coal will be available in the Civitavecchias harbour. If coals supply must be realised Trough the Naples harbour Romana consideres much more convenient to increase the actual power steam generation in the St. Paolo and Montemartini Roma plants - where the unitary coal requirement is not so high many other operations expenses may be avoided and the coal supply is limited.

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ALLIED CONTROL COMMISSION

INTER OFFICE MEMO

From: Office of the Acting Chief Commissioner

SUBJECT: Electric Power for Printing Presses of the Ministry for Foreign Affairs.

FILE No. A/CC 004.04

TO: Economic Section.

30 Aug 1944

Forwarded for appropriate action.

Stone.

1 Incl-
Memo fr Ministry of For. Affairs.

Declassified E.O. 12356 Section 3.3/NND No. 785019

105a, U.S.
Captain Stone
from Political
Section

Ministero degli Affari Esteri

HQ ACC APO 394
Doc. y Cen.
Rec'd 30 Aug 1820
By AMB

MEMORANDUM

The printing presses of the Ministry for Foreign Affairs are unable to function for lack of electric current.

The electric power is furnished by the Società A.G.E.A. (200 volts, 30-40 amphere).

Electricity should be supplied, if possible, every day from 6:00 a.m. to 2:00 p.m.

Should it not be possible to supply electricity regularly it would at least be necessary to place at the diposal of the Ministry, three times a week and over a period of 8-10 hours, a generator with the following specifications: 30 ampheres - 220 volts - three phase current.

Rome, 26th August, 1944.

nearest pref. cabin
nº 422
ACEA
(actually energizing Gaiety movie-hall)

220
30
6600
1.73
19800
4620
6600
11418

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CC 158 CC 104

HEADQUARTERS
ALLIED CONTROL COMMISSION
FINANCE SUB-COMMISSION

IRS/213/F/12 30 August 1944

SUBJECT : Electric Power

TO : Public Works and Utilities Sub-Commission
(Capt. Laughlin)

We have received a request for restoration of electric power to

Le Assicurazioni d'Italia
14 Via S. Basilio,
Rome.

for the purpose of operating several Hollerith tabulating machines, some small calculating machines and other minor services. The amount of current consumed is given as about 6 - 7 Kw. during the hours 0630 to 1400 only.

This request is recommended. It is stated that there is a Switch box in the basement of the building which has been closed by the electric company (described as "cabina di trasformazione N. 367" serving the building only).

Can anything please be done to supply this service?

Lt Col Kapfer

They should state what this work is for, is it essential?

21/8

Osman

Major R.A.S.C.
Insurance Department
Finance Sub-Commission.

This is a very small supply and it is important that it should be restored as soon as possible. Recommended

Lt Col Kapfer

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File 158

extracted from the newspaper
AVANTI 103
of August 25 1944

Part E

FOR THE ECONOMIC RENEWAL OF ITALY

The electric industry in the frame of reconstruction

Lt Col Ryder visited Radiolian in Italian n°1

The Italian electric industry, which has progressed during the last 30 years under a regimen of industrial monopoly and municipal managements, had reached, before the 8 Sept. a stage of development which is not, probably, well known to the public.

It has been, in effect, the one silent fact in the noisy and desastrous period of fascist regimen. Nevertheless it has, really nourished all the Nations' activities, no one excluded.

This matter of fact was well known by the Germans. They did not ignore that electric energy is the backbone of Italy itself and that by destroying methodically and scientifically the production plants, Italy would be handicapped and that tremendous difficulties would interpose with the reorganization and reconstruction of the country.

Of the main Power plants destroyed or seriously damaged we mention that of Pescara supplying about 120.000 KW. that of Terni of about 200.000 KW. the Larderello plant of 100.000 KW , the one of Tivoli of 60.000 KW , besides several others of less importance.

Neither public opinion, through the press, or the Government seem to clearly realize the situation, that only a rapid end of the war, leaving intact all alpine plants could make less desastrous.

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D

The serious situation of the country together with the scarsity of means at disposal require that the problem of electric energy should take a place of absolute priority. It is the problem of all problems. It is useless to settle plans of edile reconstruction, of landreclamation, of systematization of roads, railways and means of transport if we do not consider , first of all, the problemof electric energy which is the basis of everything. Witout electric energy no cement, no hydraulic lime, no bricks are built. No factories are operating, no water is pumped in pumping houses. No grain is milled, no furnaces are activated and you cannot proceed to the lifting of water for irrigation. The problem ought to be faced immediately , and not through crossways, that is burocratic organs, but appointing for the electric mangement Commissionersof unitary character for all Electric concerns. So private interests will not interfere between the best utilization of the scarce possibility to improve the situation

Such possibilities of improvement consist in some cases in the partial repair of destroyed machinery - utilizing several twin engines which are damaged in order to obtain a single perfect unit. In other cases a displacement of auxiliary or pick of load machinery of intact Power Stations to other destroyed stations of similar characteristics or the tranfer of energy from one region to the other will be advisable. Naturally it must be attempted to realize such a result with the least work of reconstruction of the lines destroyed by the Germans possible, gaining so, on time money and efficiency .

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Besides this we must not either forget that the separated electric Managements and the single industries have an interest in converging production and distribution to the points and cases of

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most financial efficiency, while the Country has interest in having the energy distributed to such industries that represent the vital part of Italian economy and which with the least consumption of energy will give work to more workers.

Only a moment of meditation over such programm is needed in order to understand that its prompt realization requires an unitarian direction that should care only for collective interests, conquering every egoistic consideration against those that ought to receive it.

In Rome, for instance, there are two electric Bodies which had, before the 4th of June, a quantity of plants for the total installed Power of about 300.000 KW -and beside this- received about 85.000 KW energy from Terni Firm. This allowed them to meet largely the maximum of power required of 125.000 KW.

After the 4th of June only 6 small Hydro-Stations remained in efficency; With the actual condition of rivers' capacity they develop only a total power of 30.000 KW available in Rome.

Such scarse energy is naturally of enormous cost as it is thermically produced at least the greater part of it; on the other side it is absolutely inadeguate to the necessities of a retaking -also if only partial- of the citys' activity.

In a few months- a concordant and energetic action of the two electric Firms helping- it would certainly be possible to reactivate some other Hydrostation more, bringing the so available power up to 80.000 KW, which wisely distributed would ameliorate the electric situation of the capital.

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In order to obtain such a result, surely and promptly

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it is absolutely necessary to have a unic Commissary who would bring harmony between the efforts of reconstruction of the two Firms, would throw the basis to a tight collaboration, levelling eventual difference of opinion and ensuring an impartial energy distribution of the availa ble energy to the various categories of consumers, indipendently from the supplying Company.

On the other side this is only a particular case of a general electric problem of the nation which must look forward to a unic natio nal Commisary.

There is no doubt that urgent measures which would put the aforesaid forces in action on this sector , with direct interveening of the State in the Management as well as with the allowance of every possible means and available helps - in first place- and intrusting such tasks to a reliable and competent person about whose honesty and indi= pendence from private inte rests there were no doubt N - would be necessary.

Naturally the writer does not publish this like Cicero " pro domo sua"

Giuseppe Romita

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HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

Minutes of the first meeting of the Electrical Reconstruction Committee held at the office of the CE HQ AAI at 1415 hours on Tuesday 8th August 1944.

Present:

Major-General W.A.Coxwell-Rogers	Chairman
Lt.Col.Lapper	Vice Chairman
Lt.Col.W.A.R.Smith	D.W.
Lt.Col.G.Cooley	PBS
Comdr.L.E.Hoggan	R.N.
Major E.J.Barry	A.C.C.

1. Organisation of Electrical Reconstruction Committee Italy.

The Chairman stated that the Central Electrical Board has been abolished and its functions taken over by the Electrical Reconstruction Committee Italy. The members present would constitute the committee, but other persons would be invited to attend as and when occasion arose. A letter regarding this matter was shortly to be circulated to all concerned.
A draft letter outlining the organisation of the new committee and setting up Area Advisory Committees was discussed. It was agreed that the C.A.O. A.A.I. be asked to circulate the letter to services concerned. A.C.C. would on receipt of the letter pass the necessary information to the Italian Government and the Electrical Companies.

2. Review of electrical reconstruction programme.

The reconstruction programme at present being carried out was discussed. The Chairman stated that it would be necessary to withdraw the military assistance from the Matese II plant.
It was left to A.C.C. to decide whether the Alto Belico plant was still to be installed at Matese II. The Vice Chairman agreed to communicate with Società Meridionale di Elettricità regarding this matter. Commander Hoggan requested that the field Coils belonging to the Matese I plant under repair at Taranto be sent so that the

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rotor balancing could be completed. Major Barry agreed to make arrangements. Major Barry stated that he desired the Bailey bridge to remain in the road to Lete Power Station until the plant had been removed to Lete. The Chairman agreed for this to remain, Lt. Col. Smith to make necessary arrangements.

3. Proposal for restoration of electricity supplies.

The Vice Chairman explained that A.C.C. engineers had now made a preliminary survey of the electrical Generating facilities in Central Italy. It was perfectly clear that if rapid rehabilitation was to be done sufficient to allow a reasonable amount of electrical energy to be made available for the Military and essential Civilian Services it was necessary to consider the importation of electrical Generating plant. After a discussion it was resolved that: -

" Having given due consideration to the present electricity supply position, affecting both military and essential civilian needs, and the possibility of early rehabilitation of electrical plant and equipment damaged by war action, this Committee recommends that steps be taken for the early importation of 60,000 KW of electrical generating plants for use in this Theater of Operations. In view of the urgency of the matter it is recommended that floating Power plants, if available, should be provided."

W.M. LAPPER,
Lieut-Colonel,
Vice Chairman
Electrical Reconstruction
Committee, Italy.

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Col Jeanes

Phil Hq

Plans prepared at Louisville
Ky & proposed organization of Detachments
should be made after Total losses have been taken over & reorganization Effy. for
Ky & Ammunition Specifications &
Equipment that can be had for Immediate
and pass to Jeff. for Tim being
to for Europe

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1 SEP Recd 158 Cels.

100

"LARDERELLO"

SOC. AN. PER LO SFRUTTAMENTO DELLE FORZE ENDOGENE

CAPITALE SOCIALE L. 150.000.000

ROMA

SEDE LEGALE ROMA
- COMM. E AMM. FIRENZE
STABILIMENTI LARDERELLO

Larderello 14 Agosto 1944

Société Anonyme BROWN BOVERI & Cie

B A D E N

(Suisse)

TUBO COMPRESSORI per LARDERELLO

Con la presente Vi confermiamo l'ordinazione di due dei quattro gruppi turbo-compressori ordinativi, sino dall'anno 1942 per la nostra Centrale di Larderello, dalla Soc. Franco Tosi di Legnano.

Ciascun gruppo comprende:

a) un compressore propriamente detto formato da due cilindri uno di bassa ed uno di alta pressione. I due cilindri funzioneranno in serie restando direttamente accoppiati tra loro. Il compressore è previsto per la velocità normale di circa 4.570 giri al minuto primo. Il comando del compressore avverrà a mezzo di motore elettrico facente circa 1400 giri al primo a velocità variabile fra 1400 e 1430 giri accoppiato mediante moltiplicatore di velocità ad ingranaggi previsto per la velocità di 1400 / 4570 giri al minuto. Restano esclusi dalla fornitura sia il motore elettrico che il moltiplicatore ad ingranaggi.

Ogni cilindro sarà a doppia aspirazione munito di diffusore a palette fisse e con cuscinetti lubrificati con olio sotto pressione.

Le ruote e le palette saranno di acciaio speciale tipo REMANIT e le parti dell'albero che verranno in contatto col gas saranno ricoperte con bussole di protezione dello stesso tipo di acciaio speciale. Le palette saranno del vostro tipo fucinate in sol pezzo coi piccioli di unione.

Resta compreso nella fornitura un accoppiamento a denti al pignone del moltiplicatore di velocità ad ingranaggi.

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b) Una elettropompa ausiliaria d'olio per la lubrificazione del gruppo (costruzione Brown Boveri e C.) con dispositivo completo di sicurezza e di allarme.

Questa pompa avrà una portata d'olio sufficiente all'avviamento ed il suo motore elettrico verrà automaticamente inserito nella messa in marcia del compressore e resterà inserito finchè la pressione dell'olio non avrà raggiunto lo stabilito valore massimo

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ed il motore si rimetterà automaticamente quando la pressione dell'olio sarà scesa allo stabilito valore minimo. Tutto ciò per assicurare la migliore lubrificazione del gruppo durante l'esercizio.

GARANZIA - Ciascun gruppo turbo-compressore avrà una portata di 5600 Kg./ora di gas fino alla pressione finale di 1 Kg./ cm² ass. marciando alla velocità di 4570 giri al minuto assorbendo al giunto di accoppiamento col motore elettrico una potenza di 640 Kw. Il gas come vi è noto ha la seguente composizione media:

CO_2 94 % ; H_2S 2 % ; H_2, H_2, CH_4, aria complessivamente 4 % .

Ogni gruppo turbo - compressore è destinato ad assicurare il vuoto nel condensatore a miscela di una turbina a vapore Tosi da 26.000 KW funzionante con il vapore naturale dei soffioni di Larderello ed ammesso che la percentuale di gas sul peso del condensato sia sei 2 % .

Vi sono note le caratteristiche della turbina perchè Vi sono state comunicate dalla Soc. Tosi . I due refrigeranti a miscela di ciascun gruppo saranno costruiti su Vs. di= segno dalla Soc. Tosi ai sensi degli accordi già intercorsi con Voi .

La presente ordinazione Vi viene passata in accordo con la Allied Control Commission per l'Italia, la quale certifica a parte la sua approvazione e si rende mallevatrice anche per quanto concerne il pagamento le cui modalità restano stabilite come da Voi concordato con la Soc. Tosi .

LARDERELLO . S. A.
Due consiglieri di Amministraz.

Luigi Micarelli

Declassified E.O. 12356 Section 3.3/NND No. 785019

Translation.

99

LARDERELLO Company

ROME

Larderello 14 August 1914

To BROWN BOVERY Co.

Baden
(Switzerland)

TURBO Compressor for Larderello

Herewith we confirm the order of two of the four Turbo-compressor units ordered by the Firm Franco TOSI of Legnano in 1912 for our Power Station at Larderello.

Each unit is composed of :

a) A compressor - strictly intended - consisting of two cylinders, one for low- and one for high pressure. Both cylinders will operate coupled in series. The compressor is designed for a normal speed of about 4570 r.p.m. The compressor control is made by means of an electric motor of about 1400 r.p.m. and speed variable between 1400 and 1480 r.p.m. coupled to a speed gear multiplicator designed for 1400/4570 r.p.m. The electric motor and gear multiplicator are not included in our order.
Each cylinder operates with double admission and is furnished with oil lubricated force fed bearings.
Special steel - KRUPP - will be employed for impellers and ladles; casings of same steel will protect the shaft from gas. Forged ladles in one piece with pivots will be according to your type.
Remains included in our order a gear coupling for speed multiplicator pinion.

b) An auxiliary electric oil pump for lubrification of the unit (Brown Boveri make) with a complete safety and alarm device.
Pump oil flow is sufficient during the starting period, while the electric motor is automatically inserted at the compressor start. The motor remains connected as long as oil pressure reaches its maximum value. When oil pressure decreases to the minimum value, automatic re-insertion is provided for the motor. All this in order to ensure perfect lubrification of the unit during operation.
GUARANTY - Each Turbo-compressor unit has a gas flow of 5600 Kg/h till final pressure of 1 Kg/cm^2 running at the speed 4750 r.p.m. and requiring at the coupling with the electric motor a power of 640 KW.
The gas average composition is, as you know, the following:
CO_2 94 % ; H_2S 2 % ; N_2 , H_2, CH_4, air complexively 4 %

130

Declassified E.O. 12356 Section 3.3/NND No. 785019

98

Each turbo -compressor unit will ensure the vacuum in the condenser (mixture operation) of a 26,.000 KW. TOSI steam-turbine operating with national fuel of Larderello. Gas percentage in weight is 2% of the condensed total.

You already know the turbine characteristics sent to you by Tosi Firm. Both mixture cooling device for each unit will be constructed by the Tosi Firm according your designs and previous agreements.

The present order is placed with you in agreement with the A.C.C. Seperately approval and responsibility for payment certified by A.C.C. according to agreements between you and Tosi Company.

"LARDERELLO" S.A.

Two Members of the Board:

(signed: Virgili Macarelli)

129

Declassified E.O. 12356 Section 3.3/NND No. 785019

97

Translation.

LANDERLLO Company

ROME

Landerello 14 August 1944

To BROWN BOVERI Co.

Baden
(Switzerland)

THREE Compressors for Landerello

Herewith we confirm the order of two of the four Turbo compressor units ordered by the Firm Franco TOSI of Legnano in 1942 for our Power Station at Landerello.

Each unit is composed of :

a) A compressor - strictly intended - consisting of two cylinders, one for low- and one for high pressure. Both cylinders will operate coupled in series. The compressor is designed for a normal speed of about 4570 r.p.m. The compressor control is made by means of an electric motor of about 1400 r.p.m. and speed variable between 1400 and 1480 r.p.m. coupled to a speed gear multiplicator designed for 1400/4570 r.p.m. The electric motor and gear multiplicator are not included in our order.
Each cylinder operates with double admission and is furnished with oil lubricated force fed bearings.
Special steel - KRUPP - will be employed for impellers and ladles; casings of same steel will protect the shaft from gas. Forged ladles in one piece with pivots will be according to your type.
Remains included in our order a gear coupling for speed multiplicator pinion.

b) An auxiliary electric oil pump for lubrification of the unit (Brown Boveri make) with a complete safety and alarm device.
Pump oil flow is sufficient during the starting period, while the electric motor is automatically inserted at the compressor start. The motor remains connected as long as oil pressure reaches its maximum value. When oil pressure decreases to the minimum value, automatic re-insertion is provided for the motor. All this in order to ensure perfect lubrification of the unit during operation.
GUARANTY - Each Turbo-compressor unit has a gas flow of 123 000 Kg/h till final pressure of 1 Kg/cm² running at the speed 4750 r.p.m. and requiring at the coupling with the electric motor a power of 640 HP.
The gas average composition is, as you know, the following: 97
CO_2 94 % ; H_2S 2 % ; N_2 , H_2, CH_4, air complexively 4 %

Declassified E.O. 12356 Section 3.3/NND No. 785019

Each turbo -compressor unit will ensure the vacuum in the condensor (mixture operation) of a 26,000 KW. TOSI steam-turbine operating with national fuel of Larderello. Gas percentage in weight is 2% of the condensed total.

You already know the turbine characteristics sent to you by Tosi Firm. Both mixture cooling device for each unit will be constructed by the Tosi Firm according your designs and previous agreements.

The present order is placed with you in agreement with the A.C.C. Separately approval and responsibility for payment certified by A.C.C. according to agreements between you and Tosi Company.

"LARDERELLO" S.A.

Two Members of the Board:

(signed: Virgili Micarelli)

Declassified E.O. 12356 Section 3.3/NND No. 785019

Translation.

LARDERELLO Company

ROME

Larderello 14 August 1944

To BROWN BOVERY Co.

Baden
(Switzerland)

Turbo Compressor for Larderello

Herewith we confirm the order of two of the four Turbo compressor units ordered by the Firm Franco TOSI of Legnano in 1942 for our Power Station at Larderello.

Each unit is composed of :

a) A compressor - strictly intended - consisting of two cylinders, one for low- and one for high pressure. Both cylinders will operate coupled in series. The compressor is designed for a normal speed of about 4570 r.p.m. The compressor control is made by means of an electric motor of about 1400 r.p.m. and speed variable between 1400 and 1480 r.p.m. coupled to a speed gear multiplicator designed for 1400/4579 r.p.m. The electric motor and gear multiplicator are not included in our order.

Each cylinder operates with double admission and is furnished with oil lubricated force fed bearings.

Special steel - REMANIT - will be employed for impellers and ladles; casings of same steel will protect the shaft from gas. Forged ladles in one piece with pivots will be according to your type.

Remains included in our order a gear coupling for speed multiplicator pinion.

b) An auxiliary electric oil pump for lubrification of the unit (Brown Boveri make) with a complete safety and alarm device.

Pump oil flow is sufficient during the starting period, while the electric motor is automatically inserted at the compressor start. The motor remains connected as long as oil pressure reaches its maximum value. When oil pressure decreases to the minimum value, automatic re-insertion is provided for the motor. All this in order to ensure perfect lubrification of the unit during operation.
GUARANTY - Each Turbo-compressor unit has a gas flow of 5600 Kg/h till final pressure of 1 Kg/cm^2 running at the speed 4750 r.p.m. and requiring at the coupling with the electric motor a power of 640 KW.

The gas average composition is, as you knew, the following:

CO_2 94 % ; N_2 & 2 % ; N_2 , H_2, CH_4, air complexively 4 %

Declassified E.O. 12356 Section 3.3/NND No. 785019

Each turbo -compressor unit will ensure the vacuum in the condenser (mixture operation) of a 26.000 KW. TOSI steam-turbine operating with nationsl fuel of Larderello. Gas percentage in weight is 2% of the condensed total.

You already know the turbine characteristics sent to you by Tosi Firm. Both mixture cooling device for each unit will be constructed bu the Tosi Firm according your designs and previous agreements.

The present order is placed with you in agreement with the A.C.C. Separately approval and responsibility for payment certified by A.C.C. according to agreements between you and Tosi Company.

"LARDERELLO" S.A.

Two Members of the Board:

(signed: Virgili Marelli)

Declassified E.O. 12356 Section 3.3/NND No. 785019

LARDERELLO

Rome 7 Aug,44

Director Manager General

Dear Sir,

Here enclosed two copies of data requested by Col. Lapper concerning turbine compressors for Larderello's 25.000 KW turbines.

Yours very truly

Virgili

Turbine compressor requested in order to install units of 25000 KW at Larderello.

The turbine compressors ordered by the Tosi C° of Legnano (constructor of the 25.000KW Larderello's turbine) to Brown Boveri in Baden Svizerland) were four and of following characteristics:

Quantity of gas (water steam contained not included)	Kgh	5600
Constant of gas about	R	19,7
Specific weight of gas at 0° C and 760 mm Hg	Kgm^3	1.87
Temperature of refrigeration water		35° C
Max. of operating temperature in turbine condensator (summer)		45° C
Max. of pression admissible (summer)	Kgm^2	1200

Note: The avarage ~~gas~~ composition of gas to be extracted from turbine condensator is following

CO2	94%
H2 S	2%
N2 (	
H2)	4%
C H4 (	
Air)	

The gas composition requires that the turbines compressors should be made of material resistent to chemical porrosion (non oxidable steel at least for shaft and roters.).

For each 25.000 KW turbine , 2 turbine-compressors are needed,each of 9600 kg.hour capacity. Discussing with the Brown-Boveri, it resulted that there is more advantage in using 2 turbo-compressors for turbine instead of one of double capacity. (11200 kg. h.) If the problem should arise again also

126

1704

Declassified E.O. 12356 Section 3.3/NND No. 785019

In reference to another constructor, it should be advisable to re-examine the also another solution of using a turbo-compressor of 11200 Kg. hour capacity for turbine , in which case the turbo-compressor should not however be furnished with relative electric motor- because the motors already ordered at the Tecnomasio Brown-Boveri of Milan have only a power of 1000KW. - 4500 V. - 50 cycles.

Declassified E.O. 12356 Section 3.3/NND No. 785019

"LARDERELLO"
S.A. PER LO SFRUTTAMENTO DELLE FORZE ENDOGENE
ROMA

DIRETTORE GENERALE

O
R AUSTRIA

Roma 7/VIII-44 901
158 CB

Gentilissimo Ingegnere,

Le unisco due copie dei dati richiesti dal Col. Lapper relativi ai turbo-compressori per turbine da 25.000 kw di Lanciano.

Con distinti saluti

Virgili

All'Col Lapper
122
Ria 8/8

J3

Turbo-compressori occorrenti per impiantare a Larderello i gruppi da 25.000 KW.

==========

I turbo - compressori ordinati dalla Soc. TOSI di Legnano (costruttrice delle turbine da 25.000 KW per Larderello) alla Brown-Boveri di Baden (Svizzera) erano 4 e rispondevano alle seguenti caratteristiche:

-Quantità di gas (non compreso il vapor d'acqua contenuto)	Kg/ora	5600
- Costante del gas, circa		R = 19,7
- Peso specifico del gas a 0° C e 760 mm. Hg	Kg/m^3	1.87
- Temperatura dell'acqua di refrigerazione		35° C
- Temperatura massima di regime nel condensatore della turbina (estate)		45° C
- Pressione massima ammissibile (estate)	Kg/m^2	1200

NOTA - La composizione media del gas da estrarre dal condensatore della turbina è la seguente:

CO_2	94 %
H_2S	2 %
N_2, H_2, CH_4, Aria	4 %

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La composizione del gas richiede che il turbo-compressore

declassified E.O. 12356 Section 3.3/NND No. 785019

I turbo - compressori ordinati dalla Soc. TOSI di Legnano (costruttrice delle turbine da 25.000 KW per Larderello) alla Brown-Boveri di Baden (Svizzera) erano 4 e rispondevano alle seguenti caratteristiche:

-Quantità di gas (non compreso il vapor d'acqua contenuto)	Kg/ora	5600
- Costante del gas, circa		R = 19,7
- Peso specifico del gas a 0° C e 760 mm. Hg	Kg/m^3	1.87
- Temperatura dell'acqua di refrigerazione		35° C
- Temperatura massima di regime nel condensatore della turbina (estate)		45° C
- Pressione massima ammissibile (estate)	Kg/m^2	1200

NOTA - La composizione media del gas da estrarre dal condensatore della turbina è la seguente:

CO_2	94 %
H_2S	2 %
N_2, H_2, CH_4, Aria	4 %

La composizione del gas richiede che il turbo-compressore sia fatto con materiale resistente alla corrosione chimica (acciaio inossidabile almeno per l'albero e le giranti).

Per ogni turbina da 25.000 occorrono 2 turbo compressori della portata ciascuno di 5600 Kg./ora. Nelle discussioni con la

I.C.

121

Declassified E.O. 12356 Section 3.3/NND No. 785019

Brown - Boveri era risultato più vantaggioso ricorrere a 2 turbo-compressori per turbina anzichè ad un solo compressore di portata doppia (11200 Kg/ora). Se il problema viene sottoposto anche ad altro costruttore sarebbe del caso di riesaminare anche la soluzione con un turbo-compressore di portata 11200 Kg/ora per turbina nel qual caso però i turbo-compressori dovrebbero essere forniti con il relativo motore elettrico perchè i motori già ordinati al Tecnomasio Brown - Boveri di Milano hanno la potenza di soli 1000 KW., tensione 4500 V.; frequenza 50 periodi.

936

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

RESTRICTED 260ang 580

ALLIED CONTROL COMMISSION

INCOMING MESSAGE

3853 92

TO: HQ ACC FOR PUBLIC WORKS AND UTILITIES SUB COMM

SIGNAL MESSAGE CENTER No: N40/26

FROM: AMG 5 ARMY SUB GAITHER

CLASSIFICATION: RESTRICTED

REFERENCE No: 5518

PRECEDENCE: ROUTINE

DATE AND TIME OF ORIGIN: AUG261146B

OFFICE OF ORIGIN:

CAN MAJOR BELL MEET CAPTAIN GAITHER AT MAP REFERENCE Q7304501 TUESDAY 29 OR WEDNESDAY 30. ADVISE. CITE OUR 262.

HEADQUARTERS
AUG 1944
A. C. C.

ACC DIST

ACTION- P.W & U SC 2

INFO- A/CC

ECON SEC

FILE 2

FLOAT

Capt Gaither

Reply by wire and let me know the reply back with the reply

A- day

Lt Col. Kapper

Pls wire back

120
119

DATE and Time of RECEIPT AUG261435

Distribution:

RESTRICTED

Declassified E.O. 12356 Section 3.3/NND No. 785019

File 91

ALLIED CONTROL COMMISSION
Public Works and Utilities Sub Commission
APO 394

acc/158/P.U.U.

Rome, August 31 1944

Subject: Steel - forging spare parts for A.C.E.A. Electric Co Rome.

To Terni Co

T E R N I

This letter will constitute our approval for the construction of 1 forged steel shaft-blades and other turbine parts according to the draftings that the A.C.E.A. Co officials gave you.

W.M. Lapper
Lt.Colonel
Chief Util. and Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

ADVANCE FED

ACC

2126

261630

RECEIVED

ROUTINE

Public Works & Util.

REPORTED INDIRECTLY RAILROAD CARS CONTAINING TURBO ALTERNATOR PARTS LOCATED ANIC REFINERY YARDS NORTH NORTH EAST LEGHORN FD PLEASE ADVISE FED FOR GOOD FOR LAPET AGENT STATION CITY 2126 PARIS WOULD APPRECIATE CHECK

24 AUG Recd 158 CC3

88 1117

ALLIED MILITARY GOVERNMENT

Ref: PU/2.

ELBA, 7th August 1944.

Subject: Electricity-ELBA.

To : Public Utilities, A.C.C.

1. The islands of Elba and Pianosa are supplied with electricity for light and motive power by 3 thermo-generating stations: Portolongone, Portoferraio, and Pianosa. The thermo-electric stations at Portolongone and Pianosa are the property of the Societe Elettrica dell 'Elba, and the one at Portoferraio belongs to the Commune.

2. Portolongone station supplies the whole of the island of Elba with light and power, except for the town of Portoferraio. This station did not suffer any material damage as a result of the invasion, but overhead cables and pylons were broken or damaged at many places on the island. Repair squads were set to work and early in July every commune was being supplied with current for lighting.

3. The Portoferraio station was also undamaged, but all the overhead cables and wires in the town were down and have had to be repaired. This station supplies direct current whilst Portolongone supplies alternative. The station was re-started at the end of July.

4. The station at Pianosa was untouched and has never ceased to work. The current is supplied to the Penal Settlement and the village which is on the island.

5. The Societe Elettrica dell'Elba has its Registered Office in Leghorn, and Head Office in Florence, with a paid up capital of 3.000.000 lires. For the bi-monthly period just ended, it has made a deficit of 143.000 lires, or 71.500 lires a month. In order to cover this deficit and working charges, authority has been given to increase light and power rates to the consumer just sufficient to cover production and maintenance costs only. Charges will again be revised at the end of the present month.

6. The plant is not sufficient to supply the demands for power and current for lighting will have to be suspended during working hours should the mines require more power.

117

Declassified E.O. 12356 Section 3.3/NND No. 785019

thermo-electric stations at Portolongone and Pianosa are the property of the Societe Elettrica dell 'Elba, and the one at Portoferraio belongs to the Commune.

2. Portolongone station supplies the whole of the island of Elba with light and power, except for the town of Portoferraio. This station did not suffer any material damage as a result of the invasion, but overhead cables and pylons were broken or damaged at many places on the island. Repair squads were set to work and early in July every commune was being supplied with current for lighting.

3. The Portoferraio station was also undamaged, but all the overhead cables and wires in the town were down and have had to be repaired. This station supplies direct current whilst Portolongone supplies alternative. The station was re-started at the end of July.

4. The station at Pianosa was untouched and has never ceased to work. The current is supplied to the Penal Settlement and the village which is on the island.

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6. The plant is not sufficient to supply the demands for power and current for lighting will have to be suspended during working hours should the mines require more power.

117

Major.

Senior Civil Affairs Officer.

Lt Col Prosser

Please write him for information, re rate, costs, etc and what allowances he has made so you can study it and advise him accordingly. Being an isolated case we may let him handle it with certain restrictions. Elba is not Italian Territory, Hqs. 16/2

We may have some point here, but I have never seen it.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

21 AUG Recd 1588

SUBJECT: Electricity Supply - C.E.B. Allocations - Matese II.

P.W.& U. 1142

HQ ALLIED ARMIES IN ITALY

TEL: FILPOT 311

2057/DW

87

C.E. 3 District

19 AUG 44

Copy to: Chief Electrical Engr
P.W. & U. Sub Commission
H.Q. A.C.C.

Ref your 6004/10 of 17 August.

It is agreed that no further work on the installation of this plant at MATESE II should be done. It is, however, requested that all the machinery and parts should be protected from damage by the weather and made ready for shipment elsewhere. There is no immediate urgency for this work which should be undertaken as and when labour is available.

W.A.R. SMITH
LT.COL. RE
FOR BRIGADIER,
DIRECTOR OF WORKS.

Lt Col Ryland
Dir. 21/8

HEADQUARTERS
21 AUG 1944
A.C.C.

116

Declassified E.O. 12356 Section 3.3/NND No. 785019

20 AUG Recd

158 ECB

D-3847

86

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
REGION IV
APO 394

R/2247

16 August 1944

SUBJECT: Electric Power Problem

TO : Public Works & Utilities Sub-Commission
Headquarters, Allied Control Commission
Attention: Lt. Colonel L. A. JENNY

1. Colonel BIRCHETT has forwarded to me your letter of 7 August 1944, Ref:ACC/150/PWU, concerning a statement in the Risorgimento Liberale.

2. We have had considerable difficulty with the Italian press in publishing inaccurate statements in several fields. The press, as you know, is controlled by the Psychological Warfare Branch. Representations have been made to PWB and a conference is planned by them of Italian press officials in an attempt to avoid the type of inaccuracies referred to in your letter.

Charles Poletti
CHARLES POLETTI
Colonel
Regional Commissioner

Lt Col Kapper

Pls route & file

Rec'd 20/8

85

Tel:499081 HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU 22 Aug.44

SUBJECT : Electric Power Allocations for Sept.44

TO : Regional Mariner

Capt. Ryan	1
Reg. South	1
Reg. IV	1
Reg. V	1
Reg. VIII	1
File	1
HMBT	1
Maj. Spooner	1
Maj. Renton	1
Maj. Berry	1
Col. Lapper (HQ)	1

The attached letter from N.A.I 131/2/42 dated 19 Aug. 44 , is forwarded for information .

V.J.LAPPER,
Lieut-Colonel,
Chief, Publ.& Mun.Div.

OFFICIAL

11

Declassified E.O. 12356 Section 3.3/NND No. 785019

85

Tel:490081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

22 Aug.44

SUBJECT : Electric Power Allocations for Sept.44

TO : Regional Engineer

Capt. Ryan	3
Reg. South	2
Reg. IV	2
Reg. V	2
Reg. VIII	2
File	1
USSF	1
Maj. Worster	1
Maj. Kenton	1
Maj. Barry	1
Col. Lapper (PWU)	1

The attached letter from H.Q.A.I. 0131/1/Q2 dated 19 Aug. 44, is forwarded for information.

W.T.LAPPER,
Lieut-Colonel,
Chief, Civil Adm. Div.

OFFICIAL DATE

PUBLIC WORKS AND UTILITIES SUB-COMMISSION

FILE

Declassified E.O. 12356 Section 3.3/NND No. 785019

21 AUG Recd
158 Cas

P.W.T.O. 961

File

Subject:- Electric Power.

HQ ALLIED ARMIES IN ITALY.

Tel:- FHPOT 207.

2131/1/Q2.

19 Aug 44.

1 District (15)
2 District (15)
3 District (15)
CG, Rome Allied Area Command (5)
CG, PHS (15)

The schedule attached to HQ AAI letter, 2131/1/Q2 dated 18 July, 44, is cancelled.

Revised allocation for September, 44, is forwarded herewith as Appendix "A".

for Major-General,
Chief Administrative Officer.

Copy to:- AFHQ
Fifth Army (Br Inc).
CG, Fifth Army (2)
Main Eighth Army (2)
Rear Eighth Army (2)
5 Corps (2)
POWIB (2)
FOTALI (2)
HQ TAF
HQ DAF
HQ 214 Group RAF
Adv HQ 214 Group RAF
AAFSC/MTO
DCMFS
ACC (20)
Local Resources Section (8)
G.4
Q(Mov) (2)
RE (2)
Works
"X"
CSO L of C
Tn(Br)
Tn(US)
Postal
ST
Ord
DDOS L of C
PHMS
Lab (2)
EFI
ACC Liaison
NLO
War Diary (2)
File
Master

113
14

Declassified E.O. 12356 Section 3.3/NND No. 785019

1 District (15)
2 District (15)
3 District (15)
CG, Rome Allied Area Command (5)
CG, PBS (15)

The schedule attached to HQ AAI letter, 2131/1/Q2 dated 18 July, 44, is cancelled.

Revised allocation for September, 44, is forwarded herewith as Appendix "A".

for Major-General,
Chief Administrative Officer.

Copy to:- AFHQ
Fifth Army (Br Inc).
CG, Fifth Army (2)
Main Eighth Army (2)
Rear Eighth Army (2)
5 Corps (2)
FOWIT (2)
FOTAIL (2)
HQ TAF
HQ DAF
HQ 214 Group RAF
Adv HQ 214 Group RAF
AAFSO/MTO
DCMGS
ACC (20)
Local Resources Section (8)
G.4
Q(Mov) (2)
PE (2)
Works
"X"
CSO L of C
Tn(Br)
Tn(US)
Postal
ST
Ord
DDOS L of C
REME
Lab (2)
EFI
ACC Liaison
NLO
War Diary (2)
File
Master

113
14

20 Aug
34

Declassified E.O. 12356 Section 3.3/NND No. 785019

APPENDIX "A".

ALLOTMENT OF ELECTRIC POWER - SEPT. 44.

AREA SERVED	RESPONSIBILITY OF	PERMISSIBLE 15 Minute Peak KW x 10^3	PERMISSIBLE ENERGY KWH x 10^6
SOUTHERN ITALY:			
APULIA CO.	2 DISTRICT	37.00	17.50
To UNES	1 DISTRICT	1.50	1.00
NAPLES DISTRICT	PBS	29.00	15.50
CAMPANIA CO.			
(i) Pomigliano	3 DISTRICT	3.00	2.00
(ii) Salerno-Torre-Cast.	3 DISTRICT	17.00	9.40
(iii) Benevento	3 DISTRICT	1.75	1.00
(iv) Calore	3 DISTRICT	1.35	0.60
(v) Santa Maria	PBS	4.00	1.50
LUCANIA CO.	2 DISTRICT	5.00	1.50
	TOTAL	99.60	50.00
CALABRIA 60 KV SYSTEM			
Calabria Co. (Exclusive of Savuto Plant)	ACC	11.00	3.80
RAILWAYS:			
NAPLES AREA 150 KV System	DGMRS	1.00	0.70
FOGGIA BENEVENTO 150 KV System	DGMRS	4.00	1.30
SALERNO-TORRE 150 KV System	DGMRS	2.00	1.00
TOTAL Railway Load on 150 KV System		7.00	3.00
CALABRIA on 60 KV System		3.00	1.50
		10.00	4.50
TOTAL 150 KV at Substations		106.60	54.50
TOTAL 60 KV at Substations		14.00	5.30
TOTAL at Plants		123.00	66.00
CENTRAL ITALY:			
TERNI CO.			
(i) Florence-Arezzo	1 DISTRICT	7.00	-
(ii) Terni	1 DISTRICT	3.50	-
UNES ANCONA	1 DISTRICT	5.30	-
Soc. Volsinia di ELETTRICITA Civitavecchia	PBS	3.00	1.12
Soc. Romana di ELETTRICITA & ACEA	PBS	8.20	5.00

Declassified E.O. 12356 Section 3.3/NND No. 785019

(i) Pomigliano	3 DISTRICT	3.00	2.00
(ii) Salerno-Torre-Cast.	3 DISTRICT	17.00	9.40
(iii) Benevento	3 DISTRICT	1.75	1.00
(iv) Calore	3 DISTRICT	1.35	0.60
(v) Santa Maria	PBS	4.00	1.50
LUCANIA CO.	2 DISTRICT	5.00	1.50
	TOTAL	99.60	50.00
CALABRIA 60 KV SYSTEM			
Calabria Co. (Exclusive of Savuto Plant)	ACC	11.00	3.80
RAILWAYS:			
NAPLES AREA 150 KV System	DGMRS	1.00	0.70
FOGGIA BENEVENTO 150 KV System	DGMRS	4.00	1.30
SALERNO-TORRE 150 KV System	DGMRS	2.00	1.00
TOTAL Railway Load on 150 KV System		7.00	3.00
CALABRIA on 60 KV System		3.00	1.50
		10.00	4.50
TOTAL 150 KV at Substations		106.60	54.50
TOTAL 60 KV at Substations		14.00	5.30
TOTAL at Plants		123.00	66.00
CENTRAL ITALY:			
TERNI CO.			
(i) Florence-Arezzo	1 DISTRICT	7.00	-
(ii) Terni	1 DISTRICT	3.50	-
UMBRIA ANCONA	1 DISTRICT	5.30	-
Soc. Volsinia di ELETTRICITA Civitavecchia	PBS	3.00	1.12
Soc. Romana di ELETTRICITA & AGEA Rome	RAAC	* 8.20	5.00

* Plus entire output of the thermal stations in ROME Area.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.189081

VSR/ce

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

22 Aug 44

Subject: Distribution System Diagram
S.E. Valdarno.

To : Regional Engineer, Region VIII.

This acknowledges receipt of the diagram of the S.E. Valdarno system transmitted with your letter RVIII/100/PWU/3, dated 19 Aug 44. Your consideration in transmitting this diagram is much appreciated and it will be very useful to this Headquarters.

W.M. LAFFER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

File 83

Tel:489081 CCB/tr

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU 22 Aug.44

SUBJECT : Hydro Electric Station Paper Mill - Tarquinia .

TO : Advance HQ. FBS, Engineer Service
att: Lt.Col. G. Cooley.

1. Ref. our ACC/158/PWU dated 14 Aug 44, and further to our telephone conversation of 22 Aug 44

2. 2. Copies of CMB/1/2 dated 27 July 44 and memorandum dated 24 July 44 are attached as requested.

F.W.LAPPER,
Lieut-Colonel,
Chief,Util.& Adm. Div.

2 enclosures.

Declassified E.O. 12356 Section 3.3/NND No. 785019

21 AUG Recd

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
REGION VIII

158 CeB P.W. TC, 1128
89

RVIII/100/PWU/3

19 AUG 1944

Subject : Distribution System S.E.Valdarno.

To : Direction Public Works & Utilities Sub-Commission
ACC Att LT Col W.M.Lupper.

Attached hereto is tracing showing the distribution system of S.E.Valdarno.

For P.S.L.LEE
Major R.E.
REGIONAL ENGINEER.

Edward H.Richardson
Major F.A.

Enclosures:No. 1 tracing

Diagram to Maj Rutter

Lt Col Rupper
Asst
Enclosure 1/1
Maj Rutter
please see me
Lt Col

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
REGION VIII
TUSCANY
ACC

A C C
30 AUG 1944
RESPONSIBLE

109
118

Tel. 489061

VSR/ce

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

24 Aug 44

SUBJECT: Electricity Supply at Siena.

TO : Regional Engineer, H.Q. Region VI II.

1. An urgent inquiry has been received at this Headquarters concerning the availability of electricity at Siena.

2. It is requested that as much information as possible covering the following be brought with you to the Regional Engineers' meeting schedule for next week and that the information be given to the Chief of the Electrical Division Public Works & Utilities Sub-Commission.

(a) The present source of electricity at Siena,
(b) Maximum KW. demand and average KWh. consumption.
(c) Approximate percentage of strictly military load,
(d) Whether any more energy could be made available to military consumers if civilian use were further curtailed either in Siena or at any point in the supply to the City,
(e) The means used to ration electricity among the civilian consumers in Siena.

W.R. LAPPIN,
Lieut-Colonel,
Chief, Utils Adm.Div.

108

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Subject: Electricity Supply at Siena.

TO : Regional Engineer, H.Q. Region VI II.

1. An urgent inquiry has been received at this Headquarters concerning the availability of electricity at Siena.

2. It is requested that as much information as possible covering the following be brought with you to the Regional Engineers' meeting schedule for next week and that the information be given to the Chief of the Electrical Division Public Works & Utilities Sub-Commission.

(a) The present source of electricity at Siena,
(b) Maximum KW. demand and average KWh. consumption,
(c) Approximate percentage of strictly military load,
(d) Whether any more energy could be made available to military consumers if civilian use were further curtailed either in Siena or at any point in the supply to the City,
(e) The means used to ration electricity among the civilian consumers in Siena.

W.M. LAIPER,
Lieut-Colonel,
Chief, Utilities Adm. Div.

108

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

20 AUG Recd

SUBJECT: Electricity Supply
Allocations - Calors 2nd Set

HQ ALLIED ARMIES IN ITALY
TEL: FILPOT XII
2057/DW
19 Aug 44

C.E. 3 District

Copy to: C.E.E.
P.W. & C. Sub Commission
H.Q. A.C.C.

The Regional Engineer, A.C.C., appears to be misinformed. The removal of this set has NOT been cancelled. It should be repaired and checked over for completeness against a list of component parts, and then made ready for shipment.

It should NOT be dispatched without orders from this HQ.

W.A.R. SMITH
Lt.Col. RE
for Brigadier,
Director of Works.

Copy of Col Lapping's letter to Col Smith to Capt Ryan

HEADQUARTERS
21 AGO 1944
A. C. C.

107

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 439081

WML/ce

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

21 Aug 44

SUBJECT: Electricity Supply.

TO : Regional Engineer, Region IV.

1. Attached is a statement setting out the electricity requirements for the "Istituto Centrale di Statistica", Rome, Via Balbo 16.

2. It is requested that this be put before your Electricity Rationing Committee with the request that the power be supplied, as the work carried out by this Institute is of national importance and also that the machines are used by A.C.C., Finance Sub-Commission, for work in connection with the Italian Government Departments.

3. Brigadier General O'Dwyer agreed that this is an important establishment and requests that everything possible be done to see the supply is made available.

4. Will you please inform me as to the decision of your Committee.

Col. Murphy phone 3.13 called
re office at 10.20. 23 Aug. 44
regarding this serice. Called Lt. Hett who
had not received the above request as yet
and will check Capt. Reason.
Lt. Hett said a request had
been made some time previous and he knew
the particulars. Gave Col Murphy data from
attached and Lt. Col. Gaw telephone No
68301 Ext 4. Lt. Col. Gaw is
Chairman of Electricity control
committee of R.H.A.C. who approves
requests for power.

Hett
23 Aug 44

W.M. LAFFER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

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APPENDIX A – U.S.P.W. 47

CHARACTERISTICS OF THE ELECTRIC ENERGY IN USE IN THE
ISTITUTO CENTRALE DI STATISTICA

a) for lighting : alternate, 125 volts

b) for industrial power: alternate, threephase, 225 volts, continuous: 15, 24, 125 volts

Type of the electric energy required:

alternate, threephase with neuter 225 volts, 45 periods (the transformation from alternate to continuous current and to the different tensions takes place in this building by our means).

Power required :

= presently = kw 35 .

= when there will be the full machinery (equal to the previous one) = kw 100

GROUP GENERATOR OF CURRENT :

- 2 Electric Motors : 1 of 90 and 1 of 60 HP
- Total power given = kw 117
- Consumption per hour:
  a) naphta = kg. 25
  b) oil = " 1,300
  c) fluid oil, extradense oil , and petroleum, respectively kg. 0,300 , kg. 0,300 and liters 0,200.

(marine salt, kg. 4 per month - for the depuration of the water; shreds, rags, Kg. 10 per month).

The Group must always be considered as an Auxiliary Plant.

Declassified E.O. 12356 Section 3.3/NND No. 785019

b) for industrial power: alternate, threephase, 220 volts
continuous: 15, 24, 125 volts

Type of the electric energy required:

alternate, threephase with neuter 225 volts, 45 periods (the transformation from alternate to continuous current and to the different tensions takes place in this building by our means).

Power required :

= presently = kw 35

= when there will be the full machinery (equal to the previous one) = kw 100

GROUP GENERATOR OF CURRENT :

- 2 Electric Motors : 1 of 90 and 1 of 60 HP
- Total power given = kw 117
- Consumption per hour:

a) naphta = kg. 25
b) oil = " 1,300
c) fluid oil, extredense oil , and petroleum, respectively kg. 0,300 , kg. 0,300 and liters 0,200.

(marine salt, kg. 4 per month - for the depuration of the water; shreds, rags, Kg. 10 per month).

The Group must always be considered as an Auxiliary Plant.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

AUG Recd
158 Gen. File

Jeni Upon Aug 17, 44

Lt Col Logan

Several things called recent attention came up here this morning.

(1) Maj Fricker, Provin. Commissioner, requested the Jeni officials to give him a copy of their authorized power allocation (PAL) produced by Jeni (a). They informed him that Maj Bass was allocating the power here. Recommend that Lag IV Engineer be strongly urged to issue proper instructions for handling. In my conversation a week ago with Col Booth, he stated that all provinces had received a letter of instruction on rationing and distribution of power. This province has received no such letter.

(2) Staff memo #26 dated 7 Aug. 1944 from Region IV AMG signed by Adj H by order of Col Poletti orders all provinces to take orders from Region IV only disregarding direct orders from AFC Hq or Sub Commissions. In view of this, the gasoline and Scale B heavy workers rations for Jeni CO is steps with Region IV acts. Recommend conference with Region IV Supply to ascertain why authorization for Scale B rations has not been issued as per direction made by Reg IV Supply on July 27th from Prov Sub Commission (signed by Col Lagg).

(3) Major Fricker has list of manufacturing concerns within province, particularly Ice and cement that have wants to start into production. Some of these are still in Army territory and some are not. Recommended to Maj Fricker that he

Declassified E.O. 12356 Section 3.3/NND No. 785019

Wrote letter to Lay Q/ Hyter listing factories, electricity needed at and ECAP Rep rounded Dah action from there. Rec commend further that Perugia I/C Engineer be asked to contact maj Tucker on this and similar problems and impress him (again) that maj here is not the one to handle them.

(A) Capt Rogers (B) of 52 CRE Group called by to investigate rehabilitation of the steam plant at Fontado 18000 KW steam turbine (3 - 6000 KW units) 6600 volts. This plant uses coal gas (mine nearby) Plant belongs to Terni Co. & they did not plan to rehabilitate it. It was never commercially profitable. It would be used to serve Perugia district, can be producing 3000 KW in 6 weeks (½ of 1 unit) if rehabilitation starts now. 52 CRE is willing to do all work - only outside help needed is one carline to be made here at the steel mill and priority help in finding 6.6 KV/10 KV, 350 KVA transformer. Steel plant says they can make carline without interfering with present operations. Told Capt Rogers to proceed with rehabilitation of 8th Army approved (further words illegible) 52 CRE is only interested in getting 1000 KW to Perugia. If they can get that from Terni in six weeks, they are not willing to rehabilitate.

Fontado Plant has 10 KV line to Foligno Substa, there 60 KV to Perugia. Foligno substation undamaged & transformers available. No further recommendation necessary - it's up to 8th Army

103

Robert A. Bauer
Capt. C.E.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 429061

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/136/PWU

19 Aug 44

SUBJECT: Electricity Supply.
TO : Regional Engineer, Region IV.

1. You have already been informed that Major Bell of this S-C is working with the Tarsi and Leghorn groups to assist in the rehabilitation of electrical generating plants.

2. In order to avoid any misunderstandings on this point, I wish to make it perfectly clear that requisitioning of materials and rationing of electricity supplies is still to be handled through your Regional Organization.

3. The present situation in the Terni area needs immediate attention and guidance for the rationing of the available electricity supply. At present the Terni Company officials have complete control of electricity supplies and as the available electricity is required to be used only for essential services it is necessary that you arrange to have a control operating in this area.

4. You will remember that Lt.Col. Breth is still on loan to you for assistance in this work.

5. Some time ago efforts were made to obtain heavy vehicles for the Terni Company's workers. It appears now that this matter should be dealt with through your regional organization and as these people are engaged in work of vital importance, I shall be glad if you will deal with the matter as quickly as possible.

V. M. LAPTEW
Lt.Col.
Chief, Engr. & Adm.Div.

File 102

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 459063

WAU/ds

Feb 16

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AGO/151/PWU

19 Aug 44

SUBJECT: Materials
TO : Regional Engineer, Region IV.

1. A little while ago a letter was handed to Lt.Col. Breth requesting that he find out whether certain materials were available at Bernaabone (Brunico and Mion).

2. As we are waiting for these materials it is desired to know the result of Lt. Col Breth's visit.

W. M. LAFFER
Lt. Col.
Chief, Util. & Aer.Div. 101

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489083

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

29 Aug 44

AC/P&U/244U

SUBJECT: Transfer of electrical equipment.
TO : D. G. M.R.S.

1. Ref. electrical situation in Ancona area.

2. An urgent situation has arisen which makes it necessary to obtain three 60,000/6,000 volt KVA transformers and it is proposed to remove these from the Riverza Power Station (M.E.C.D477). complete with 6,000 volt switchgear. The matter is extremely urgent and we are asking the Subcommission to arrange for the transfer without delay. We should be glad to have your agreement to this arrangement.

3. The Minister of Public Works has been notified and has been asked to make the necessary arrangements for the transfer of the equipment as between the Italian State Railways and the U.F.K.S. Company. It is proposed to install them at:

(1). Recanati Sub Station
(2). Falconara Sub Station
(3). Held as spare at Ancona

W. M. LAPPIN
Lt. Col.
Chief, Util. & Adm.Div.

100

99

Declassified E.O. 12356 Section 3.3/NND No. 785019

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
REGION IV
APO 394
TCU DIV.

18 JG Recd
158 CB 0-3642

CRB/mp

5A/TCU/1500/300

15 August 1944

TO: Public Wks. Sub-Commission, ACC

Col. EDWARDS, Regional Engineer
Region Zed

1. Forwarded for your information and file.

C.R. BIRCHETT
Lt. Col., C.E.
Dir. TCU Div.

Enclosure:
list of Electric Plants

HEADQUARTERS
17 AUG

Declassified E.O. 12356 Section 3.3/NND No. 785019

Title 73

WDL/8

T83:489/021

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 534

AOO/158/PWU 19 Aug 44.

SUBJECT: Castelnuovo Power Station.
TO : Infantry S-G.

1. An arrangement has been made whereby the materials at the Leverkusen and Castelnuovo Power Stations are frozen and can be released only by 5th Army or Major Bell of this S-G.

2. Major Bell is our Electrical officer assisting the engineers in that area in rehabilitation of plant.

3. For your information, the material shown on the attached list has been taken away by the American Army prior to the setting up of this control.

V. M. JASPER
Lieut-Colonel
Chief, Util. & Adm. Div.

987
9
8,

Declassified E.O. 12356 Section 3.3/NND No. 785019

File 72

B.

CASTELNUOVO POWER-STATION

Materials taken away by American Army

Nr. 5 pairs pincers for electricians (7:9" size)
" 14 screw-drivers - various size
"
19 assorted wood wimbles , size mm. 3-18
6 pairs of scissors for electrician
5 monkey wrenches gauge: 15-20-30-35-40 mm.
1 pair tinsmith scissors
1 portatile electric drill to be assembled on bank maximum hole size 15 mm cone shaped housing, complete with drill chuck & steelneedles (cylindrical housing) For 220 Volts -50 cycles.
1 drill chuck with Nr.2 Morse cone.
2 supports for iron saws.
48 screw points with cylindrical drills:

size of mm.:	2	2,5	3	3,5	4	4,5	5	5,5	6
pieces:	4	4	4	4	4	4	4	4	3

mm.:	6,5	7	7,5	8	8,5
pieces:	3	3	3	2	2

16 screw points, conical drill:

size of mm.:	9	9,5	10	10,5	11	11,5	12	12,5
pieces :	2	22	1	1	1	1	1	1

mm.:	13	13,5	14	14,5	15	16
pieces:	1	1	1	1	1	1

1 iron square with metrical division - 250 mm.
1 pair big scissors for round iron bars
1 portable gimlet
2 pulley blocks of mm. 150 for lifting tackles
8 drill punchs, size mm. 4-5-6-7-8-9-10-11
1 wrench for pipe joining maxim. gauge 4"
1 pair of tongs
1 clamp gauge 40 mm.
1 vice for enginefitter, gauge mm.180 width of stanck jaw mm.120
9 numbering punchs (height mm. 8)
1 hydraulic hoist - 2 tons -
2 iron hammers
2 sharpening stones for tools
4 meter gauge 10 sections
1 Emery wheel with d.c.electric motor (160 V)
1m.120 electric cord- double pole - 2 sq.mm.500 V.

97

Declassified E.O. 12356 Section 3.3/NND No. 785019

724

100 meters electric cord - triple pole -
15 blades for hand saws
10 round files
10 half round files
12 flat files

- - - - - -

Castelnuovo, 13 August 1944.

No receipt was obtained for this material. It was an impossibility at the time.

(signed: [illegible]

Maj. S.C.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel 41631

WML/ef

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

19 Aug 44

SUBJECT: Transfer of electrical equipment.

TO : MINISTER PUBLIC WKS. Att: Sig. Tizzano.

1. It has been found necessary to remove three 60,000/6,000 volt 850 KVA Transformers at present located in Anversa power station complete with 6,000 volt switch gear.

2. This equipment is the property of the Italian State Railways and is being installed at:

(1) Pesaneti Sub Station
(2) Falconara Sub Station
(3) Held as spare at Ancona

belonging to the U.N.E.S. Company.

3. As this matter is most urgent the work has already been put in hand and I shall be pleased if you will make the necessary arrangements as between the State Railways and U.N.E.S. Co. for the transfer of this equipment.

W.M. LAFFER
Lt.Col.
Chief, Util.& Adm.Div.

953

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: A/3000

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AOD/1.92/PWU

19 Aug 44

SUBJECT: Caloro and Matese 2 Generating Units.
TO : D.W., A.A.I. (Att: Lt.Col. W.A.F. Smith)

1. In confirmation of telephone conversation with you regarding the movement of plant.

2. With regard to the Caloro unit which it was agreed at the C.S.D. meeting should be repaired and dismantled for movement to destination unknown, an examination has been made at the Papigno station where it was thought that the plant may be installed. The turbine of the Papigno unit appears to be in good order, but the alternator is extensively deranged. The Caloro alternator would not suit owing to speed variation but consideration is being given to the possibility of repair to the alternator. The prospects at Colets seem to be promising and the No.1 and No.3 sets should be operating by December and February respectively. The company have been asked to concentrate on this work and they are now arranging for 24 hour working. Under these circumstances would you please acquaint No.3 District of the position and suggest that we carry on with the former arrangement to have the Caloro plant repaired and prepared for shipment to destination unknown.

3. On receipt of a copy of your letter to District 3 we will notify the S.M.E. Company so that they are fully aware of what is taking place.

Matese 2.

Further consideration has been given to the installation of the Alto Salino unit at the Matese No.2 station and it is believed that at this stage it would be wise to discontinue the project for the erection at Matese No.2 and for the plant to be held in readiness for movement to destination unknown. It would be helpful if District 3 could arrange to have this plant protected against weather conditions before they discontinue supervision. We will notify the S.M.E. Company of this arrangement on receipt of copy of your letter to District 3.

Copy to: Capt Ryan
2 copies

E. M. LAPPER
Lt. Col.
Chief, Util. & Adm. Div.

3
96

Declassified E.O. 12356 Section 3.3/NND No. 785019

16 AUG Recd
158 CAB

10

ALLIED FORCE
MILITARY RAILWAY SERVICE
HEADQUARTERS, 704TH RAILWAY GRAND DIVISION

CSC/FK

A.P.O. 400
13 AUGUST 1944

SUBJECT: ELECTRIC POWER

TO: HQ, ACC - ~~PW~~ & U SUB-COMM.
(ATTN: LT. COL. W. M. LAPPER, CHIEF, U & ADM DIV.)

1. YOUR LETTER OF 17 JULY, FILE ACC/15E/PWU, SUBJECT "ELECTRICAL PLANT", HAS BEEN REFERRED TO THIS HEADQUARTERS FOR INVESTIGATION.

2. AN EFFORT HAS BEEN MADE TO LOCATE THE ELECTRICAL MOTORS MENTIONED, AND SOME VARIOUS TYPES OF INDUSTRIAL MOTORS HAVE BEEN FOUND ON RECENT RECONAISSANCE TRIPS CONDUCTED BY THIS DEPARTMENT. HOWEVER, WE ARE NOT POSITIVE AS TO THE IDENTITY OF THE MOTORS FOUND AND WOULD APPRECIATE YOUR GIVING US THE FOLLOWING DATA AND ANY OTHER INFORMATION WHICH MIGHT ENABLE OUR OFFICERS TO IDENTIFY THESE MACHINES:

TYPE OF MOUNTING
TYPE OF DRIVE
VOLTAGE
AMPERAGE
REQUIRED HORSE POWER
PHASE

3. WE SHALL BE GLAD TO ASSIST IN ANY WAY POSSIBLE IN THE ABOVE MATTER AND IF AT ANY TIME YOU FIND IT NECESSARY TO CALL ON US FOR SIMILAR INFORMATION PLEASE DO NOT HESITATE TO DO SO.

FOR THE COMMANDING OFFICER:

O. R. DIAMOND
LT. COL., TC
RY EQUIPMENT SUPT.

Lt Col Lapper

They should give us a list of anything they find not connected to a bearing unit so we can look into it, and if OK. freight it.

16/8

Lt. Col. Lapper. Unit of the portable unit of the equipment is information we have on same and a number of these units. Have drafted a reply.

C. T. HEDLUND 17 Aug

Declassified E.O. 12356 Section 3.3/NND No. 785019

28 JUL Recd
158 CCS.

JHB/gb

09

1 File JHB

HEADQUARTERS/REGION IV
Allied Control Commission
APO 394

. 27 July 1944

TO : "TERNI Co" Società per l'industria e l'elettricità
Via Due Macelli 86, Rome
Attention to: Chief Engineer.

SUBJECT : Hydro-electric plants, Jutificio di Terni.

FILE N° : R4/EKG/700g

Request that the engineers of the TERNI works at Terni be instructed to effect the necessary repairs to the 450 KW and 850 KW hydro-electric groups of the "Centurini" plants of the jute company at Terni.

Arrangements between the companies concerned and with the local Allied Control Commission officials should be made at Terni.

The material lists already submitted are general and do not give enough definite information for procurement. Detailed requests should be submitted to this office for material required and not available from any source in Terni. It is believed that some materials may be available locally from salvaged machines. Requests submitted to this office should be complete with sizes, quantities, technical data and specifications; including information as to firms that may be able to supply any of these materials.

For the Regional Commissioner:

Full report May Bell.
Material for repairs not available.
31-7-44

E.J.EDWARDS, Colonel
Regional Engineer.

Enclosure 1

Copy to:

1) Lt.Col.W.S.Lapper, Electrical Section
Public Works Sub-Commission M.G., AGO
1) Provincial Commissioner, Terni.

92 Lt Lapper 2/8

94

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LEL/ee

ACC/158/PWU

16 Aug 44

SUBJECT: Electrical Plant.

TO : Ministry of Public Works,
att. Comm. TIZZANO.

1. Reference is made to our letter 5 Aug 44, file ACC/158/PWU.

2. In that letter we requested that the No.2 unit from Calore be transferred from S.M.E. Co. to the TERNI Co.

3. Recent developments now indicate that it will not be necessary to transfer this unit to Terni.

4. Therefore, please cancel any instructions which you may have given the two companies on the matter.

for W.W. Laughlin Capt
W.W. LAUGHLIN,
Lieut-Colonel,
Chief, Util.& Mm. Div.

C.C. to: Hqtrs. Region IV,
att. Capt. RYAN.

91

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489081

IWL/co

67 A

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

16 Aug 44

SUBJECT: Electrical Plant.

TO : Ministry of Public Works,
att. Comm. TIZZANO.

1. Reference is made to our letter 5 Aug 44, file ACC/158/PWU.

2. In that letter we requested that the No.2 unit from Calore be transferred from S.M.E. Co. to the TERNI Co.

3. Recent developments now indicate that it will not be necessary to transfer this unit to Terni.

4. Therefore, please cancel any instructions which you may have given the two companies on the matter.

for M.W. LAPTEW,
Lieut-Colonel,
Chief, Utils Adm. Div.

W. Laughlin
Capt

C.C. to: Hqtr. Region IV,
att. Capt. RYAN.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel:489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LWL/tr

16 Aug,44

ACC/158/PWU

SUBJECT : Electric Power - Grosseto Province
File Mines -924,3

TO : Acting Director Industry - S.C.

1. Attached to information .

W.M.LAPPER ,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Enclosure : Letter 16 Aug,44
to HQ. Reg.VIII .

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel:489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LWI/tm

16 Aug,44

ACC/060/PWU

SUBJECT : Electric Power - Grosseto Province
Ribolla coal mines .

TO : H.Q. Region VIII.
attn: Regional Engineer .

1. Confirming the request made by Maj. Bell of Capt. Stephens several days ago, please arrange to provide 250 KW of capacity and 4000 KWH per day to the Ribolla coal mine as quickly as possible in accordance with the attached.

2. It is necessary that coal shipments begin within the next 7 days and the power will be needed at that time.

3. Please advise when this power is made available.

W.M.LAPPER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

CC: Transportation S.C.(coal Division)

1- Enclosure
letter 12 Aug,44-file 924.3

884

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel:489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LW/jr

16 Aug.,44

ACC/060/PWU

SUBJECT : Electric Power - Grosseto Province
Ribolla coal mines .

TO : H.Q. Region VIII.
attn: Regional Engineer .

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2. It is necessary that coal shipments begin within the next 7 days and the power will be needed at that time.

3. Please advise when this power is made available.

for W.M.LAPPEN, Capt
Lieut-Colonel,
Chief, Util.& Adm.Div.

CC: Transportation S.C.(Coal Division)

1- Enclosure
letter 12 Aug,44-file 924.3

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Declassified E.O. 12356 Section 3.3/NND No. 785019

15 AUG Rcd
099 C&B.

TLW/vdb

662

HEADQUARTERS
ALLIED CONTROL COMMISSION
INDUSTRY SUB-COMMISSION
MINING DIVISION
A.P.O. 394

Ref: Mines-924.3

12 August 1944

SUBJECT: Electric Power - Grosseto Province.

TO : Public Works Sub-Commission, HQ ACC.

1. Immediate urgent demands have been placed on this office for the shipment, as soon as possible, of lignite, from the commune of Ribolla in the Province of Grosseto.

2. It will be necessary to have a peak load of approximately 250 KW or 4,000 KWH per day, to accomplish the above loading and maintenance of the mine.

3. This fuel is needed immediately and is scheduled for use in power plants.

4. It is requested that assistance be given in the above power requirement. Any details required, can be obtained upon request.

J.S.E. TODD
Colonel,
Acting Director,
Industry Sub-Commission.

c/c -

Economic Section, HQ ACC. (info) (1)
Float (1)
Files, Mining Division (1)

Capt Langstaff
Ask Reg — to see
that this is made mandatory

Le Cal Harper
Reg 15/8

86

629

Declassified E.O. 12356 Section 3.3/NND No. 785019

C

40

WML/tr

Tel: 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

16 August,44

SUBJECT : Destruction of Electrical Plants .

TO : C.E.,H.Q.AA.I.

Mr. Cameron-Curry G-2 (GENA) visited this office and asked for similar information. A copy has been handed to him.

W.M.LAPPEN,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Major Stanton 0143

SECRET

Tel: 409061

WEL/gf

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

400/156/PWU

13 Aug 44

SUBJECT: Destruction of Electrical Plants.
TO : G.S., H.Q. A.A.I.

Referring your conversation regarding certain measures to be taken to prevent demolition of Electrical Generating Plants by the enemy, a list of plants in given order which it is considered if these can be saved will greatly assist the war effort.

Name of Station	Location	Company	River	Remarks
		BULGARIA		
SOFIA		Societa Generale Elettrica Balcanica	Maritza	First priority
		BELGIUM		
VILVORDE	Brussels	Societe Generale d'Electricite	Escaut and Rupel Valleys	First priority
CANDIAC		Soc. Gen. d'Elect. de Quebec	Riviere des Prairies	First priority
~~TOSI~~		~~Societa Generale Elettrica della Calabria~~	~~Tirso~~	~~Second priority~~
LAIN HOF.	Leiben	Soc. Trentina di Elettricita	Rivo di Gardena	~~Second~~ First priority

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Station	Location	Company	River	Remarks
MARGHERA	Marlengo	Soc.Elettr. Alto Adige	Adige	First ~~Second~~ Priority
ETSCH	Marlengo	Az.Elettr. Comunitaria Citta Bolzano e Renano	Adige	First ~~Second~~ Priority
		VENETO		
ACCEGLIO		Societa Adriatica di Elettricita	Cardevole	First Priority
ADAMELLO	Sovramonte	Societa Idroel.del Cismon		First Priority
PIAVE		Societa Industriale S. Marco	Piave	First Priority
CENCENIGHE		Societa Adriatica di Elettricita	Cordevole o Biois	Second Priority
FELTRIANO	Feltre	Societa Adriatica di Elettricita	Cismon	Second Priority
		CARNIA		
DOBART		Societa Adriatica di Elettricita	Tagliamento	First Priority
RAVA		Societa Adriatica di Elettricita	Tagliamento	Second Priority
~~CESNIC~~	~~Tolmezzo~~	~~Amministr. Civica di Tolmezzo~~	~~Alto Adige~~	
~~Linea Cellina~~		~~[illegible] Alto Adige~~	~~Tagliamento~~	

Insert 1 Item

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Station	Location	Company	River	Remarks
~~VENEZIA~~		~~Soc. Elettr. Alto Adige~~	~~Fiume di Serviano~~	
~~RIO DI VENEZIA~~		~~V.E.V.A.~~	~~Rio di Valles~~	
~~SERVIGO~~	~~Belluno~~	~~Soc.Elettr. Conegliano Ditta Belluno e Veneto~~	~~Rio di Servico~~	
		MEDIA		
PADUSA ✓	Montefiorino	Soc.Adriatica Esercizi Elettrici	Pangone e Dolo	First Priority
RUBICONE ✓		do	Pragone ✓	First Priority
ETRUSCIA ✓	Monbaccaro	do	Scoltenna	First Priority
		RITICO		
BOTTICINO				Steam Plant First Priority
		ENTRO		
OGGIO	Pelo	Soc.Gen.Elettr. Sicaliana	Nese di Val Vecchia e Rio Vion	First Priority
ADO	Ivo	Soc.Ad.Industriale Trentina	Chiese	First Priority
TES (ADO)	Ivo	"	"	First Priority
NZOGNERA	Vezzocarina	Soc.Gen. Elettriche Siciliane	Nese	First Priority
GARDA		Soc.Industriale Trentina	Nese	Second Priority
LAGO MAGGIORE	Pelo	Soc.Gen.Elettr. Sicaliana	Riva Grande, Lagna, Maccagno e Lango	Second Priority
INZINO	Alpago	Soc.Gen.Elettr. Sicaliana	Rivi Lapano e Lavarone	Second Priority

Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Station	Location	Company	River	Remarks
RIVA		Soc.un.di Elett. Fornia	Lago di Ledro e Fornia	Second Priority
S.SILVESTRO		Soc.Idroel del Cismon	Vanoi e Affluenti	Second Priority
	TREVISO			
CASTELVIERO	Nervesa della Vittoria	Consorzi Irrigazione di Destra sinistra Cun.della Vittoria e Piavesella di Nervesa	Piave	First Priority
PADALTO	Vittorio Ven.	Soc.Adriatica di elettricità	Piave	First Priority
NOVE	" "	"	"	First Priority.
CASTELCUCCO	Cappella Maggiore	"	"	Second Priority
CASTUA	Conegliano	"	"	Second Priority
PONTE PIAVE	Vittorio Ven.	"	Meschio	Second Priority
S. FLORIANO	" "	"	Piave	Second Priority
CIAS	Aviano	Soc.Ital.per l'util.delle forze idraul.del Veneto	Cellina	First Priority
MANIAGO	Montereale Cellina	"	"	Second Priority.
	VENETIA			
SOLIO I	Verona	Soc.Adriatica di elettricità	Adige	Second Priority
SOLIO II	"	"	"	Second Priority.
	VENETIA			
Provincia del Canapo		Soc.Idroel del Canapo	Brenta	First Priority

82 to J.Chiefs-of-Staff, Sec. 8-2 (USA)
Secretariat Section.

W. M. LAPPER
Lieut.-Colonel
Vice Chairman
Electrical Reconstruction Committee

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Insert 1

Name of Station	Location	Company	River	Remarks.
ARCO		Società Generale Elettrica Cisalpina Az. elettr.	Vizze	Second Priority
BOLZANO	Bolzano	Città di Bolzano e Merano	~~Rio d'Ega~~ Rio d'Ega	Second Priority
PONTE GARDENA		Soc. elettr. Alto Adige	Isarco ~~Isarco~~ "	Second Priority
PREMESA		Soc. elettr. Alto Adige	Rivo di Gardena	Second Priority
RIO DI PUSTERA		Ferrovie ~~dello Stato~~ dello Stato	Rio di Valles	Second Priority.
SENALES Stor	Naturno	Az. elettr. consorziale Città Bolzano e Merano	Rio di Senales	Second Priority.

Declassified E.O. 12356 Section 3.3/NND No. 785019

O 16 Mis Recd 158 O 65

Roma, addì 12 agosto 1944 Anno

Ministero dei Lavori Pubblici

SERVIZI ELETTRICI

N. 044

Headquarters
Allied Control Commission
Public Works and Utilities
Sub-Commission
APO 394

Risposta a nota del 5-8-1944
A.C.C./158/P.W.U.

Oggetto: Impianti elettrici

In relazione alla nota sopradistinta pregiomi informare che sono interceduti accordi con l'ingegnere Masturzo della S.M.E. per il trasferimento dell'unità generatrice dell'energia elettrica n. 2 dall'impianto idroelettrico del Calore alla centrale elettrica di Papigno-Velino appartenente alla Società Terni.

Dal colloquio è risultato che il gruppo del Calore è in gran parte smontato, occorre però provvedere al trasporto dalla sede della centrale (S.Mango) alla Nazionale tenendo presente che il pezzo più pesante da trasportare avrà un peso di circa 20 tonnellate.

L'ISPETTORE GENERALE DEL GENIO CIVILE

79

Declassified E.O. 12356 Section 3.3/NND No. 785019

Translation

GR/cc

MINISTRY OF PUBLIC WORKS

Rome, August 12th 1944

Electrical Services.

To: Headquarters A.C.C.
Public Works & Utilities Sub-Commission.
AFO 394

No. 614

Subject: Electric plants.

Answer to note of Aug. 5th 1944

F. ACC/158/P.W.U.

In connection with the above mentioned note, I beg to inform you that agreements have been come to with Ing. Manturzo of the S.M.E. for the transfer of the elect ric power generating unit N.2 from the Calore hydro-electric plant to the Papigno-Veline power-station belonging to the TERNI Society.

From the interview it appears that the Calore unit is mostly dissembled, however the transport from the power-station (S.Mango) to the "Nazionale" will have to be provided for, bearing in mind that the heaviest piece to be transported will weigh about 20 tons.

THE INSPECTOR GENERAL OF THE
GENIO CIVILE

(signature)

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489081

LWL/oe

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU.

16 Aug 44

SUBJECT: Recce Reports on Electric Power Stations.

TO : Director of Works H.Q., A.A.I., C.M.F.
attention: Lt.Col. W.A.R. SMITH, R.E.

1. This acknowledges, with thanks, your letter 16 Aug 44 file 2110/DW with enclosures.

2. Feel free to call on us for any information which we have that will be of assistance to you or your staff.

77

W.M. LASTER.
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

W ML/ce

ACC/158/PWU.

27 Aug 44

SUBJECT: Societa' Larderello (Generating Stations)

TO : Director of Works, A.A.I. Hqtrs.

1. Permission has been granted by Fifth Army, AMG, for this Headquarters to supervise the re-habilitation of the above generating stations. Major I.A. Bell of this office has been placed in charge of this project, as well as the electrical rehabilitation of the Societa' Terni generating stations. This officer spends approximately three days at each installation and one day at headquarters each week.

2. The requisitioning of material and tools by the Allied Forces, at the Larderello installations has become a serious problem. Approximately twenty five truck loads of lumber, piping, and steel work has been removed recently. Much of this equipment is needed in the re-habilitation of the plants. Many of the receipts obtained by the Italian officials are signed with fictitious names and organizations. In view of this, the Commanding General, Fifth Army has frozen all material and equipment at the above plants, authorizing the G.A., Fifth Army and Fifth Army AMG only to release material. The Fifth Army AMG has vested their authority in our representative at the site (Maj. Bell).

3. In order to enforce the above, it is proposed by this office to post an Allied Soldier to Larderello. This meets with the approval of the Fifth Army.

W.M. LARTER,
Lieut-Colonel,
Chief, Utils Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

W MI/ce

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AOC/158/PWU. 17 Aug 44

SUBJECT: Societa' Larderello (Generating Stations)

TO : Director of Works, A.A.I. Hqtrs.

1. Permission has been granted by Fifth Army, AMG, for this Headquarters to supervise the re-habilitation of the above generating stations. Major L.A. Bell of this office has been placed in charge of this project, as well as the electrical rehabilitation of the Societa' Terni generating stations. This officer spends approximately three days at each installation and one day at headquarters each week.

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3. In order to enforce the above, it is proposed by this office to post an Allied Soldier to Larderello. This meets with the approval of the Fifth Army.

W.M. LAPPER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Major Meyers

HEADQUARTERS
ALLIED CONTROL COMMISSION
INDUSTRY SUB-COMMISSION
APO 394

WEM/TGE/ejc

Tel. 391

11 August 1944

Ref. ACC/5628/IND

SUBJECT: Estimated Electric Power Requirements for 6 months for Central Italy.

TO : Public Works & Utilities Subcommission.

1. Chemical Works:

(i) a. Terni-Papigno Carbide works. For operation of one furnace to produce about 300 tons of carbide/day urgently needed for the military and for reconstruction of Italy.

(~~Power requirements may fluctuate between~~ 10,000 ~~to 18,000 KW~~) 18,000 KW.

(ii) b. Terni-Nera Montoro Ammonia Works.
Ammonia is urgently needed for
a) Refrigeration
b) 30 tons per month for Solvay Soda Works at Rosignano
c) Fertilizers
continuous load to produce 90 m.tons ammonia per month 4,000 KW.

(iii) c. Aniene Caustic Soda and Chlorine Works
a) Rome - ~~continuous load~~ 1,500 KW.
b) Rosignano " " 5,000 KW.

~~Load can fluctuate about 30%.~~

(iv) d. Solvay Soda - Rosignano Area.
a) San Vincenzo 200 KW.
b) Ponte Cinori 300 KW. continuous load. 500 KW

(v) e. Cisa Viscosa - Rome & Rieti 1,200 KW.
~~Maximum load in day-time, but working hours might be adjusted to fit power availability.~~

(vi) f. Carbon Bisulfide Plant
Cisa Viscosa at Colle Statte 3,000 KW.

~~T O T A L: 33,200 KW.~~ 7½

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2. Heavy Industry

(i)	Terni Steel Works - continuous load	7,000 KW.
(ii)	Cast Iron Works - Follonica - continuous load	400 KW.
(iii)	Cement Mills	
	(a) Colle Ferro	2,500 KW.
	(b) Spoleto	2,000 "
	(c) Civitavecchia	2,000 "
(iv)	Bosco Terni	500 "
	~~T O T A L: 14,400 KW.~~	

3. Paper Mills

(i)	Isola de Siri	3,000 KW.
(ii)	Ceprano	800 "
(iii)	Tivili	500 "
(iv)	Rome	700 "
	~~T O T A L: 5,000 KW.~~	

4. Mining

Spoleto Lignite Mines	1,200 KW.
GRAND TOTAL:-	53,800 KW.

John S. Todd

J. S. E. TODD
Colonel,
Acting Director,
Industry Subcommission.

Copy to:
Econ. Sec.

73

Declassified E.O. 12356 Section 3.3/NND No. 785019

xel: 89081

LAJ/mc

HEADQUARTERS
ALLIED CONTROL COMMISSION
Economic Section
APO 394

ACC/158/PWU

14 Aug. 1944

Subject: Electric Power Situation in Central Italy.

To : Acting Chief Commissioner, A.C.C.

1. We have been directed to undertake a program of industrial and other rehabilitation so as to reduce import tonnages. As Italian industries are dependant upon electricity we are greatly handicapped in our effort unless we are given a fairly free hand in our program of electrical rehabilitation. Our studies show that it is impossible to rehabilitate a sufficient number of plants in the short period required to have any appreciable effect upon our military import tonnages. Therefore, other effective steps must be taken.

2. Although the overall electric power supply planning was made an A.C.C. responsibility only about 3 weeks ago, it has made a nearly superhuman effort to survey the general situation. Based upon this survey, and some previous knowledge of the requirements, it prepared a Requisition showing what the urgent needs were. It has now been asked to prepare further substantiating data and it is submitting this data in such form as it was possible to prepare it without too much loss of time.

3. The fact that only about 6% of 892,000 KW of electric power normally produced in Central Italy was available should be ample proof of the need for prompt action to improve this situation without any further substantiating evidence. Only a small percentage of the destroyed plants can be rehabilitated by cannibalization within the next six months. Everything possible is being done along these lines and progress has been made and will continue to be made.

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4. The further fact that the 15,000 KW of available hydro electric supply, now supplied to Rome from outlying points, in addition to the 20,000 KW local thermal station supply, may soon have to be cut considerably, presents a most serious situation insofar as Rome is concerned, wholly apart from the inability to rehabilitate essential industrial plants outside of Rome needed for military and essential civilian requirements. Rome normally requires 100 to 120,000 KW.

5. Upper floors of tall buildings in Rome, or buildings in high areas, must have the water pumped individually to these levels by electric pumps. At present they receive electricity only for 16 hours every 4th day. If this is further cut a serious menace to public health will result. With winter coming on the long dark nights will be conducive to outbreaks of crime. Everything possible must be done to give Rome more electricity, not less.

6. In view of conflicting and uncertain reports as to what plants or other supplies may be available in the US and UK, we earnestly request that authority be given for the 2 officers of A.C.C. most concerned with this problem to proceed to the U.S. by air without delay, and with a high priority, so as to obtain first hand and immediate knowledge of whatever type of electric power plants may be made available for this theater, or what parts or units of plants could be had to assist in our immediate rehabilitation effort, and that they be given power to accept such substitutes as may available and may fit into Italian current characteristics up to the total KW. requirements of the two Requisitions presented.

7. It is further requested that, failing in their effort to obtain all of the requirements in the U.S., one or both of these officers be authorised to proceed from the U.S. to the U.K. to make a survey of the availability of such plant there.

8. In view of the seriousness of the present electrical position in Central Italy, and the absolute necessity for speed, may we ask for immediate action. This is wholly apart from any

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plans which may have to be made later for Northern Italy and for which we should also have first hand knowledge of availability of plant that could be quickly imported from the U.S. or U.K., so that plans for this may also be made accordingly.

Signed by
William O'Dwyer 15/8/44

WILLIAM O'DWYER
Brig. General.
Vice President.

Countersigned thus:
"O.K. Ellery W Stone
Captain USNR."

Ink notations by E.A.S. 15/8/44

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel:489081 HEADQUARTERS VSH/tr
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU 14 August 44.

SUBJECT : Utilisation of Power Line for Military Communications Purposes.

TO : Regional Engineer, Region VIII.

1. Transmitted below for your information is a report, received through channels, from the Commanding Officer, Head - quarters Company A , 63d Signal Battalion, Fifth Army, Apo 464:

" In compliance with Signal Circular No.21 dated 13 April 44, the following report of utilization of Power Lines is hereby submitted :

A. A short section power line of about 16 spans in length, in the vicinity of Bagni di Casciano has been utilized to provide a connecting link between a line running to Saline and one to Capannoli. This is a 3 phase power line of apparently about 33 KV and is not in use. Many of the power conductors are broken and on the ground. The group was constructed below the power conductor position and an existing telephone circuit on the pole was rehabilitated as part of the group.

B. This line was put into service 31 July 1944.

C. The line was constructed by and is to be maintained by 63d Sig Bn."

Declassified E.O. 12356 Section 3.3/NND No. 785019

2. Bagni di Casciano is located approximately 25 kilometers east of Livorno .

W.M.LAPPER ,
Lieut-Colonel,
Vice Chairman
Electrical Reconstruction
Committee .

CC : PBS -Eng (Lt.Col.G.Cooley)

Declassified E.O. 12356 Section 3.3/NND No. 785019

COPY

Headquarters Company "A" 63d Signal Bn.
Fifth Army, APO 464
U.S. Army

3 August 1944.

Subject: Utilization of Power Line

To: Commanding Officer, 63d Sig Bn. APO 464 US Army.

1. " In compliance with Signal Circular No.21 dated 13 April 44, the following report of utilization of Power Lines is hereby submitted:

A. A short section of power line of about 16 spans in length, in the vicinity of Bagni di Casciano has been utilized to provide a connecting link between a line running to Saline and one to Capannoli. This is a 3 phase power line of apparently about 33 KV and is not in use. Many of the power conductors are broken and on the ground. The group was constructed below the power conductor position and an existing telephone circuit on the pole was rehabilited as part of the group.

B. This line was put into service 31 July 1944.
C. The line was constructed by and is to be maintained by 63d Sig Bn. "

Signed: John G. Seebrook
Capt. 63d Sig Bn.
Commanding

1st Ind.
HQ 63d Sig Bn Fifth Army, APO 464 US Army, 3 Aug 44.
To: Commanding General, HQ Fifth Army Sig Service, APO 464 US Army.

67

For the Commanding Officer J.B. Hubbard.
Capt. 63 Signal Bn.
Adjutant.

Declassified E.O. 12356 Section 3.3/NND No. 785019

12 AUG Recd
158

RESTRICTED

P.W.&U.

SUBJECT:- Utilisation of Power Lines.

Directorate of Works,
H.Q., A.A.I., C.M.F.

9627

2063/DW

To: H.Q., A.C.C.
P.W. & U. Sub-Comm.

11 Aug 44.

Herewith copy of letter ref 2720X18 dated 8 Aug 44, from C.S.C. Main H.Q., A.A.I., together with copy of enclosure referred to therein, for your information.

W.A.H. SMITH,
Lt.Col., R.E.
for Brigadier,
Director of Works.

ENCLS:

66

Declassified E.O. 12356 Section 3.3/NND No. 785019

COPY

Subject:- Utilization of Power Line. Restricted.

Main Headquarters,
Allied Armies in Italy.

27208X18

8 Aug 44.

CSO L of C Italy
DUW

The attached copy of a letter of 3 Aug 44 from 63rd Signal Bn regarding the utilization of a power line for telephone circuits is forwarded for your information.

W.B. WATKINS,
Maj. Sig.C
for Major General,
Chief Signal Officer.

WBW/AJM.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

EJH/ce

ACC/158/PWU

14 Aug 44

SUBJECT: Hydro electric Station Paper Mill
Turquinia.

TO : Societa' Romana di Elettricita' - Piazza Poli, 11, Rome.

Referring to the operation of this station, this will be your authority to enter the above premises for this purpose. You are hereby requested to make the necessary connections and transformer changes to carry out this order.

The output of this station will be used in your network.

E.M. LAPHER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Copy to: C.C.FES. Engr.Section -
(Advance Headquarters)
Attn. Lt.Col. C.Cooley.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

KTB/ce

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works & nd Utilities Sub-Commission
APO 394

ACC/158/PWU.

14 Aug 44

SUBJECT: Hydro electric Station Paper Mill
Tarquinia.

TO : Advance Headquarters PWB. Engineer Service PWB.
Att.: Lt.Col. G. Cobley.

It is assumed that the attached order will clear up this question and you concur in this arrangement.

W.M. LAPPER,
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

28 JUL Recd

158 Ccb.

A.A.I.
CENTRAL ELECTRICAL BOARD
HQ AAI CMF

REF: CEB/1/2

27 July 1944

SUBJECT:- Paper Mill - TARQUINIA

TO:- CG PBS, Engr Section.
(Att/ Lt-Col. G. COOLEY)

1. Enclosed herewith is copy of a memo dated 24 July 44 from the Societa Romana di Elettricita in connexion with the station at the Paper Mills at TARQUINIA which is self explanatory. Since this plant is in fact in PBS area I believe it should be handled by PBS.

2. Regardless of how the power is used the repairs to the dam should be completed and the generating station put into operation.

JAMES P. GRONDON,
COLONEL, CE.
Vice Chairman, AAI - C.E.B.

COPY TO:-
HQ ACC (Att.Lt-Col.WM LAPPER)
HQ RAAC
Lt. Wade Brown, RA.

62

Rome, July 24th 1944

50

MEMORANDUM

Station of Papermills at Tarquinia

These papermills, actually not in exercise, were once fed by a self-governing station on the river Marta with an alternater to 180 KVA and another one to 300 KVA at 500 V 50 cycles. The proprietor of the papermills Dr. Luigi Melina is presently at Varese, on the spot there have remained an overseer and three workmen.

The dam has been damaged but not very seriously and is being repaired by the Municipality of Tarquinia which however asks on return that the power be totally utilised for the inhabited centre, actually supplied at 30 000 with a non-continuous supply (shifts).

Civitavecchia area has installed a transformer at 175 KVA and is going to supply Tarquinia at 10 000 Volt with a provisional cabin.

Colonel Cooly of P.B.S. has however asked that the power be sent into our net and the Municipality has therefore discontinued the dam's repairs.

°°°

It is necessary to obtain from Allied Headquarters an order to be allowed the use of the Station, to finish the repairs of the dam, to install a more powerful transformer and connect it with the sub-station of Tarquinia-Scale, utilising at first the 60 000 Volt line for Montecatini Company (S.R.E.) presently not in exercise.

If their requests are not exagerrated, it may be possible to appoint local workmen.

61

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

Aug. 12

Tarquinia: hydro plant (paper mill)

The Romana Co. could not yet
access to the plant as the
proprietor is not present.
Romana needs an order to
put in operation the station
and after - in one week
the station can operate
with 200 to 300 K.W.
Connected if the excitation will
result sufficient at 45 cycles
non connected if not.
In any case the transmission
lines admit a convenient operation

Aug
X 60

Declassified E.O. 12356 Section 3.3/NND No. 785019

TEL : 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394.

LWL/ac

ACC/158/PWU

13 August 1944.

Subject : Request for Electric Service.
Private Residence of Ministry of Treasury.

To : Region IV T.C.U. Division.
45 Via Del Mare.

1. Attached request for service transmitted for action.

2. Please advise the Joint Director Finance Sub-Commission of the action taken with a copy of your letter to this Sub-Commission for information.

W.M. LAPPER,
Lieut-Colonel,
Chief Util. & Admin. Div.

1 Enclos: Letter 10 Aug. File 13059/F

Declassified E.O. 12356 Section 3.3/NND No. 785019

12 AUG recd

158 al

47

HEADQUARTERS
ALLIED CONTROL COMMISSION
FINANCE SUB-COMMISSION
APO 394
TEL: 553, 417.

13059/F

10 Aug 1944

SUBJECT: Electricity Supply for Private Residence of Minister of Treasury.

TO : Public Works and Utilities Sub-Commission.

1. The Minister of the Treasury of the Italian Government Mr. M. Soleri has requested that arrangements be made for the electricity supply to be resumed at his private residence at 7 Via Emilio dei Cavalieri.

2. His Excellency's duties necessitate his working until late in the evenings and a supply of electricity at the above address would considerably facilitate the carrying out of his official duties.

3. The concern involved is Aziende Goverbatoriale Elettricita Acque located at Via Milano 62, Rome, who state that the connection with the electric main can be made without difficulty.

E. N. Foley

Colonel,
Joint Director,
Finance Sub-Commission.

Lt Col Rapper

Ltr J. 12/8

58

11 AUG Recd 15 Sept.

HEADQUARTERS REGION VII

ALLIED CONTROL COMMISSION

File Ref:

Date: 6, August, 1944

SUBJECT: Electric Power Interruption.

TO: Director Public Works and Utilities Sub-Commission
(Att.Lt.Col.Lapper) HQ. ACC. A.P.O. N°394
c.c. Region III Att. Capt.Ryan.

I. In answer to your letter ACC/I58/P.W.U., 3I July I944 :
I have investigated this interruption of power supply and report as follows.

2. The 30 R and R unit (Recovery and Refueling) is not an oxygen plant but a small recovery unit of the R.A.F. situated near Capo Isolde. There, use of electricity is for the operation of signals. This unit has not been cut off two to four times a week as presented in telegram but were cut off twice in a month for a period of from four to eight hours in the day time. The instructions to cut them off did not come from Naples but from the S.E.C. Office in Catanzaro, who had my approval to make line cutoffs on any line that did not carry a military or an indispensable load. Upon receipt of your telegram I gave immediate instructions to the director of S.E.C. to give uninterrupted service to this unit. I have since conferred with the C.O. 30 R & R and he states that he has had no interruption of service since that date.

3. As per instructions from Capt.Ryan on 5 August I have instructed the director S.E.C. not to cut off any more lines for any period but to proceed only with the rationing under the limits of the decree.

Declassified E.O. 12356 Section 3.3/NND No. 785019

C.C. Region III Att. Capt.Ryan.

Dear Capt. Ryan
Aug 11/2

I. In answer to your letter ACC/I58/P.W.U., 3I July I944 ;
I have investigated this interruption of power supply and report as follows.

2. The 30 R and R unit (Recovery and Refueling) is not an oxygen plant but a small recovery unit of the R.A.F. situated near Capo Isolde. There, use of electricity is for the operation of signals. This unit has not been cut off two to four times a week as presented in telegram but were cut off twice in a month for a period of from four to eight hours in the day time. The instructions to cut them off did not come from Naples but from the S.E.C. Office in Catanzaro, who had my approval to make line cutoffs on any line that did not carry a military or an indispensable load. Upon receipt of your telegram I gave immediate instructions to the director of S.E.C. to give uninterrupted service to this unit. I have since conferred with the C.O. 30 R & R and he states that he has had no interruption of service since that date.

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William F. Chamberlin
WILLIAM F.CHAMBERLIN
Major F.A.
Regional Engineer

Declassified E.O. 12356 Section 3.3/NND No. 785019

9 AUG Recd
051
ab

P.W.& U
8932

HEADQUARTERS
REGION 3, ALLIED CONTROL COMMISSION
APO 394, U.S. Army.

7 August 1944.

SUBJECT: Interruption of Electric Service of 242 Group R.A.F. 36 R.U. Unit at Crotone.

TO : Chief Engineer District II
(Att. Major Bennet).

1. This letter confirms telephone message, of the August 1944, to Major Bennet.

2. This office has received a report of the interruption of the electric service of an R.A.F. Unit at Crotone.

3. The Calabria Co. reports that the Crotone feeder was interrupted three times during the month of July 1944, in order to help reduce their KWH. consumption to the allocated amount.

4. The Calabria Co. has been ordered to discontinue the interruption of the service on the Crotone feeder.

HEADQUARTERS
8 AUG 1944
A.C.C.

R. A. RYAN
CAPT. ENGR. REG.
SOUTH ITALY
ELECTRICAL OFFICER.

RAR/rb

Encl.

Copy to : Headquarters A.C.C.
Public Works & Utilities S.T.

Declassified E.O. 12356 Section 3.3/NND No. 785019

20 : Chief Engineer District II
(Att. Major Bennet).

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4. The Calabria Co. has been ordered to discontinue the interruption of the service on the Crotone feeder.

HEADQUARTERS
8 AUG 1944
A. C. C.

R. A. RYAN
Capt. Engrs. A.U.S.
South Italy
Electrical Engineer.

RAR/rb

Encl.

56

Copy to : Headquarters A.C.C.
Public Works & Utilities S.C.
Att. Lt. Col. W.H. Lapper.

Lt Col Lapper
Ans. T/P

Capt Langhlin
Type in copy with the
letter at the
Conference

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

RESTRICTED
ALLIED MILITARY GOVERNMENT
REGION VIII

5 AUG Recd

P. W. & U

2 Aug 44.

REGION/109/2

SUBJECT : Electric Power.

TO : Regional Engineer, Region IV.

1. Reference your letter R4/ENG/700 dated 27 Jul 44, received 31 Jul 44.

2. No orders have been given by me to disconnect power to VIENNO commune. I have enquired of my Electrical Officer who is at present in GROSSETO Province and he states that he has not given any such instructions.

3. I would be glad to have any further information you may have on the subject.

H.L.L.
Lt.-Col. R.E.,
Major RE.,
Public Wks & Utilities Division.

Copy to:- P.W. & U Sub-Commission.
Your ACC/259/INU dated 31 Jul 44 refers.

HEADQUARTERS
5 AUG 1944
A. C. C.

Act Col Rapp
Adj 5/8

Declassified E.O. 12356 Section 3.3/NND No. 785019

LWL/bb

Tel: 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APC 394

10 Aug. 44

ACC/158/PWU

SUBJECT : Information Report - Larderello and Terni power plants.

TO : Hqts. Region IV - Attention Reg. Eng.

1. Attached progress report by Major Bell for your information and file.

for W.M. LAPPEN
Lieut-Colonel,
Chief, Util.& Adm. Div.

1- enclosure
report Major Bell
period Aug 1 to Aug 8 incl.

56
52

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 489081 HEADQUARTERS AEP/bb

ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

5 Aug 44

ACC/159/PWU

SUBJECT : Electric Power Supply - Italy

TO : HQ. II C.E. Works
Eighth Army

1. Ref. your CE. 1506/61 dated 30 July 44.

2. We thank you for copy of Part XI of Report on the above subject.

W.M. LAPPER
Lieut-Colonel,
Chief, Util.& Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

2 AUG Recd
16 Encls

Subject: Electric Power Supply - XXXX

P Works 5C.
U/R 6/4/0

11 CE Works
EIGHTH AIRX
CE 1906/81
30 July 1944

C.E., Main HQ Eighth Army 1
D.W., A.A.F. 1
C.E.B., A.P.O.400 2
A.C.of.S., HQ, A.P.O. 720 1

Herewith Part XI of Report on Electric Power Supply - XXXX passed to you for information.

Lt Col Lapeer
? Maj 3/8

Col.
11 CE Works.

/rka

Declassified E.O. 12356 Section 3.3/NND No. 785019

18 AUG Recd

158 cas. PW + BC. 8894

HEADQUARTERS
AND FIFTH ARMY
APO 464 U.S. ARMY

4th August 1944.

205/9

SUBJECT: Power lines.

TO : Regional Engineer Officer, Region VIII.

1. Please confirm word from you through Major McBratney on August 2nd that the power lines from Lardarello to Piombino and from Lardarello to Castignano di Selvay, will be in working order by the time Lardarello is ready to start their first generator.

2. The transformer was moved from Castelnuovo to Lardarello on August 2nd and they estimate they will be able to furnish 2750 KW by August 15th or August 20th.

For the Commanding General:

D.M. GAITHER,
Captain, C.M.P.,
Chief, Engineer Division,
A.M.G. Fifth Army.

Copy to:

— Public Works Sub-Commission
F.C. Grosseto
F.C. Livorno
G-4 Fifth Army.

/hdp

Lt Col Rogers

Ed 1/8

152

Declassified E.O. 12356 Section 3.3/NND No. 785019

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394.

ACC/150/270 7 August 1944.

SUBJECT: Publicity on Electrical Situation.
TO : Major Fielden, Director, Public Relations Branch, A.C.C.

1. Reference your PRB/229 dated 7 August 1944.

2. As you probably know, the Central Electrical Board has been abolished and an over-all committee has been formed to work under the Chief Engineer, A.A.I. as Chairman, and the Chief of the Electrical Division of this Sub-Commission as Vice-Chairman. This committee will be known as the Electrical Reconstruction Committee.

3. The meeting to be held by this Committee on 8 August 194, is an organisational meeting and at which time certain important proposals of A.C.C. will be considered. However, I am strongly opposed to giving any publicity to the matters to be discussed or conclusions reached by that Committee on 8 August. The plan to be discussed will further have to be approved at A.F.H.Q. and ultimately in Washington. To indicate that the Economic Section and this Sub-Commission are doing everything in their power to improve the electrical situation I may state that it is intended that two officers of this Sub-Commission should go to Washington after obtaining A.F.H.Q. approval, to urge approval in Washington. Then Washington has approved our proposal, the Vice President of the Economic Section will be advised by cable and he may then wish to give you a statement. Any statement made prior to that might only raise false hopes and would add still further confusion and unfounded controversy which we must absolutely avoid.

L. A. JERVIS,
Lt. Col., C.E.
Director

CC to: Vice President, Economic Section
Lt. Col. W. H. Lapper.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

PUBLIC RELATIONS BRANCH
ALLIED CONTROL COMMISSION

7 AUG Recd
158 CCB.

PRB/RCS

7 August 1944.

Subject: Publicity on electrical situation.

To: Lt Col L.A. Jenny, Public Works and Utilities Sub-Commission.

I note that AAI's electrical reconstruction committee is meeting on August 8. As you know, the electrical situation here is causing more grouses and polemics, in the newspapers and elsewhere, than anything else. Any information which you can give to this Branch on which some encouraging publicity could be based would be much appreciated.

Lionel Fielden

LIONEL FIELDEN,
Major,
Public Relations Director.

50

Distribuzione S. R . E. del 28/7/44

ATAC	KWH	24
STEFER	"	7
Pref. mil/	"	115,3
Pref. civ.	"	129,2
Agro Rom.	"	19
Turni	"	64
KWH		358,5

Distribuzione A C E A del 28/7/44

ATAC	KWH	21,3
STEFER	"	6,5
Pref.mil.	"	85
Pref.civ.	"	97
Turni	"	49
KWH		258,8

Declassified E.O. 12356 Section 3.3/NND No. 785019

Agro Rom.	"	19
Turni	"	64

KWH 358,5

Distribuzione A C E A del 28/7/44

ATAC	KWH	21,3
STEFER	"	6,5
Pref.mil.	"	85
Pref.civ.	"	97
Turni	"	49

KWH 258,8

18

Fed Mark 100 cc in Rome per day

SIR E 350 : 1

ACEA 258.8

612.8

Loco Terni 43

Total Militari and essential Civilian load 504.3

Civilian "Terni" as percentage of Total = 13%

Civilian "Terni" as percentage of Essential Civilian load = 8%

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

WIL/co

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/156/PWU. 7 Aug 44

SUBJECT: Electric Power Supply. Transmission Lines.

TO : 11 C.E. Works 5th Army.

1. Receipt is acknowledged of your letter C.E.1506/83, dated 2nd Aug 44, together with data concerning damage to transmission lines.

2. The information will be most useful to us.

W.M. LAFFER,
Lieut-Colonel,
Chief, Util. & Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Or 7 file 083. 0 35

7 Aug

Subject- Destruction of Elect- Plants

To VP Econ Sec'-

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 4890051

LAJ/EK

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AC/159/PWU

7 August 1944.

SUBJECT: Electric Power Problem.
TO : Regional Commissioner - Region IV.
through Economic Section.

1. On 5 August 1944 I noticed the attached statement in the RISORGIMENTO LIBERALE of Rome and had it translated. Translation is also attached.

2. I had the above matter reviewed and am advised that there is no station with such a capacity as is indicated in the attached article in existence and operating that could be connected to Rome. We fully realise that newspapers thrive on controversies and we have no desire to become involved in any newspaper controversy. However, this is submitted to you in order that you may be posted and may answer any questions that may be put to you.

3. In this connection I wish to state that the Electrical Division of this Sub-Commission is deeply concerned with the rehabilitation of all electrical power plants in Central Italy which can be rehabilitated by cannibalization. Therefore, if any questions should ever arise, I shall appreciate it if you will please contact this Headquarters and we shall be glad to give you authoritative advice on all such matters.

L. A. JENNY,
Lt. Col., C.E.
Director.

Encl. Newspaper Cutting.
Translation

Declassified E.O. 12356 Section 3.3/NND No. 785019

TRANSLATION

"Risorgimento Liberale" 5 Aug. 44.

The Electric Power Problem.

Precise, well founded and pressing questions that should not remain unanswered.

Here we are not speaking of rotation of power supply and those readers who are sending us ingenious proposals of solutions should not be displeased in not seeing them published. We do not publish them because all of them have the defect of the presuming that the official organs have told the truth, the whole truth and nothing but the truth, when they set forth the reasons on which the regulations in force are based. Those reasons are not the real ones, nor will we be able therefore to discuss them as good ones, unless we want to quibble uselessly.

Here we speak rather of increasing the power available, as could be done. We know for instance that a short time ago certain works for the repair of two groups of a power station capable of supplying 73000KW had been started. They were not all intended for Rome, but our possibilities would have been large enough. But one fine day the workshop that was separating the necessary pieces was put in a position of being unable to continue the work. Why? We should be glad of an answer.

And we would also like to know if it is true that about 50-60000KW could be sent to Rome from another very distant power station, in perfect working order. If it is true that a work of linking up 30 Km long requiring the use of only 300 posts would be sufficient for this. If it is true that the material needed can be found almost on the spot because the material of other lines now unused could be employed. If it is true that the works could be carried out in about a fortnight.

That this is so, we know positively: however we would be glad of its confirmation by the authorities who surely do not need more precise indications to understand the allusions to places and workshops. We only ask that they should not tell us fairy stories of the kkind of the one about the low water of the Tiber near the San Paolo power station, in order to shut our mouth.

Declassified E.O. 12356 Section 3.3/NND No. 785019

7 AUG Recd

158 Cab.

32

HEADQUARTERS
AMG FIFTH ARMY
APO 464 U.S. ARMY

5th August 1944.

205/15

SUBJECT: Casting for Lardarello.

TO : -Public Works & Utilities Sub-Commission, A.C.C.

28

1. Reference is made to your cable 1268 of 2nd August.

2. On 2nd August, Major Bell was in this Headquarters and stated that he had been devoting most of his time to the Lardarello and Terni power stations and had the matter of the casting in hand, that the pattern would have to be developed from drawings and pieces of the broken casting and that delivery of the new casting could be expected in sixty days after receipt of the drawings and pieces in the Terni foundry.

3. A pass to circulate in the 5th Army Area was issued to Major Bell to facilitate his work, and the delivery of the plans and pieces will be handled by him.

For the Commanding General.

D.M. GAITHER,
Captain, C.M.P.,
Chief, Engineer Division,
A.M.G. Fifth Army.

/hdp

Lt Col Kappen
Dft 7/8

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Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081

WML/cc

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU

5 Aug 44

SUBJECT: Electrical Plant.

TO : Minister of Public Works,
attn.: Signor TIZZANO.

1. It has been decided that in order to make more generating capacity available in Central Italy, the N° 2. Hydro electric generating unit at the CALORE hydro electric plant of the Società Meridionale di Elettricità be transferred to the GALLETO Power Station, belonging to the "TERNI" Società per l'Industria e l'Elettricità.

2. It is requested that you make the necessary inter company arrangements for the transfer of this plant and notify me, as soon as this has been arranged, as we are most anxious that the transfer of the plant shall be carried out in the shortest possible time.

W.M. LAPPER,
Lieut-Colonel,
Chief, Util. & Adm.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Subject: Requisition of Hydro Electric Unit at CALORE Plant.

HEADQUARTERS
1 SEP 1944
A. C. C.

HQ AAI,
C.M.F.

2131/1/Q2.

13 June 44.

HQ, ACC.

1. At its meeting on 30 May, 44, the AAI Central Electrical Board allotted the following task to the ACC for execution:-

> The requisition of the NO. 2. Hydro Electric generating unit at the CALORE hydro electric plant of the Societa Meridionale di Elettricita.

2. It is intended to install this unit after repair at the site of a demolished plant in the ROME area, and to operate it at this new site to meet military and essential civilian power requirements. It would be available for return to the Societa Meridionale di Elettricita as soon as replaced by a permanent installation.

3. Please notify the AAI Central Electrical Board when this requisition has been carried out.

Major General,
Chief Administrative Officer.

Copy to:-

CC, ROLFE.
G.4
Wks
Local Resources Section
Electric Power Committee, AFLR (I) Board
Central Electrical Board

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Declassified E.O. 12356 Section 3.3/NND No. 785019

JEB/gb

14 JUL [illegible]

Ccb 051.

HEADQUARTERS REGION IV
Allied Control Commission
APO 394

FILE R"gN4/ENG/700

13 July 1944

MEMORANDUM TO:

Lt.Col.L.PPZR,
Electrical Section
Public Works Sub-Commission
HQ ACC.

Herewith some information on "TERNI" power plants, which may be useful.

As repair work on these plants is now at a"stand-still", I would like to pint out again the importance of getting the "TERNI" steel works back into operation as a repair shop. Recommend that higher authority be " prodded a little" to secure early action on this question. Colonel Edwards is trying to get some action on this, also.

For the Regional Engineer

James E. Breth
JAMES E.BRETH
Lt.Col.INFANTRY
Public Utilities Officer

Enclosures 4.

41

AMG 1 - FORM E 3. Return original copy to AMG 4 (Tr. Pu.) File No

Complete this questionaire and return in triplicate within three days.
(Questionario da riempire e restituire in triplice copia entro tre giorni).

PUBBLIC UTILITIES (Servizi Tecnici)

1. Utility (Servizi) i. e. (cioè): [redacted], Electricity (Elettricità), ecc.

2. Name and address of Utility (Nome e ubicazione del servizio) CENTRALE PAPIGNO
a 3 Km. da Terni

3. Name location of each plant and title of head official (Nome, indirizzo e titolo del capo di ciascun impianto?) Direzione Servizi Elettrici Società "TERNI" - PAPIGNO - Direttore Ing. NESTORE RICCIONI -

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) NO

5. Estimated time to get essential minimum working (Tempo che si presume necessario per iniziare il minimo di esercizio) 4 mesi se avremo disponibile il gruppo da 9.000 KW del Calore - [redacted] (days / giorni)

6. Output (Produzione): a. Normal (Normale?) 250 milioni di kWh per anno -
b. Now (Attuale?) niente
c. Estimated after [redacted] (Presumibile entro trenta giorni?) 4 mesi 160.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale e Meridionale

8. Use of output (uso della produzione?)

9. Type of plant and brief description stating age and condition?
(Tipo dell'impianto e breve descrizione dell'età e condizione?) 6 gruppi per complessivi 78.000 KVA a flusso regolato, un gruppo da 9.000 KVA a bassa caduta ad acqua fluente - macchine costruite in epoche diverse tra il 1905 e il 1937 -

N. B. - Attach report on damage and proposals for part or complete restoration giving approx. cost
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo)

10. Is staff available for operation (avete personale specializzato per l'esercizio?) SI

Il programma di ricostruzione è subordinato allo sviluppo del nostro programma idroelettrico -

11. Are tools available (Avete disponibili gli attrezzi?) SI

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le Acciaierie di Terni e l'Officina Riprazioni dei Servizi Elettrici di proprietà sociale -

13. Are funds available (Avete fondi disponibili?) SI Additional required (Quantità in più necessario)

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)					
Quantity on hand (Quantità in deposito)					

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4. Is each plant working NOW or NOT? (Ciascuno stabilimento si trova ora in o NON?)

5. Estimated time to get essential minimum working: 4 mesi se avremo disponibile il gruppo da 9.000 KW del Calore'-
(Tempo che si presume necessario per iniziare il minimo di esercizio)

6. Output (Produzione): a. Normal (Normale) 250 milioni di kWh per anno -
b. Now (Attuale?) niente
c. Estimated after ~~repair~~ 4 mesi (Presumibile entro trenta giorni?) 160.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale e Meridionale

8. Use of output (Uso della produzione?)

9. Type of plant and brief description stating age and condition?
(Tipo dell'impianto e breve descrizione dell'età e condizione?) 6 gruppi per complessivi 78.000 KVA a flusso regolato, un gruppo da 9.000 KVA a bassa caduta ad acqua fluente - macchine costruite in epoche diverse tra il 1905 e il 1937 -

N. B. - Attach report on damage and proposals for part or complete restoration giving approximate cost
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo)

10. Is staff available for operation (Avete personale specializzato per l'esercizio?) SI

Il programma di ricostruzione è subordinato a lo sviluppo del nostro programma idroelettrico -

11. Are tools available (Avete disponibili gli attrezzi?) SI

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le Acciaierie di Terni e l'Officina Riparazioni dei Servizi Elettrici di proprietà sociale -

13. Are funds available (Avete fondi disponibili?) SI Additional required (Quantità in più necessario)

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)					
Quantity on hand (Quantità in deposito)					
Quantity required for each month of operation (Quantità richiesta per ogni mese di esercizio)					

406

15. Number of maps attached (Numero delle carte topografiche e disegni allegati?) già consegnati

16. Give on back list of stores and materials required to start operation.
(Allegate a tergo le scorte ed i materiali necessari per iniziare).

17. Attach list of spare parts, machines, and materials available also other useful information.
(Allegate una lista dei pezzi e macchine e materiali disponibili ed ogni altra informazione utile).

Date (Data) Roma, 7 luglio 1944

SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

Signature (Firma)
Appointment (Titolo)

Declassified E.O. 12356 Section 3.3/NND No. 785019

AMG 4 - FORM E 3. Return original copy to AMG 4 (Tn. Pu.) File No

Complete this questionaire and return in triplicate within three days.
(Questionario da riempire e restituire in triplice copia entro tre giorni).

PUBBLIC UTILITIES (Servizi Tecnici)

1. Utility (Servizi) i. e. (cioè): ~~Water Supply~~ Electricity (Elettricità), ecc.

2. Name and address of Utility (Nome e ubicazione del servizio) CENTRALE DI CERVARA a 3 Km.da Terni

3. Name location of each plant and title of head official?
(Nome, indirizzo e titolo del capo di ciascun impianto?) Direzione Servizi Elettrici Soc."TERNI'
PAPIGNO - Direttore Ing. NESTORE RICCIONI

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) NO

5. Estimated time to get essential minimum working? 20 days (giorni)
(Tempo che si presume necessario per iniziare il minimo di esercizio)

6. Output (Produzione): a. Normal (Normale) 60 milioni kWh per anno
b. Now (Attuale?) niente
c. Estimated after 30 days (Presumibile entro trenta giorni?) 35.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale e Meridionale
8. Use of output (uso della produzione?) luce e forza motrice

9. Type of plant and brief description stating age and condition? turbine doppie orizzontali a
(Tipo dell'impianto e breve descrizione dell'età e condizione?) bassa caduta - 5 gruppi da 2,000 KVA e 2 gruppi da 1,000 KVA-anno di costruzione 1901

x. B. - Attach report on damage and proposals for part or complete restoration giving appron cost: E'in corso
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo) la riparazione con ns/ mezzi.

10. Is staff available for operation (avete personale specializzato per l'esercizio?) SI

11. Are tools available (Avete disponibili gli attrezzi?) SI

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le Acciaierie di Terni di proprietà Sociale e l'Officina Riparazioni dei Servizi Elettrici.

13. Are funds available (Avete fondi disponibili?) SI Additional required (Quantità in più necessario)

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)	lubrificanti per macchine elettriche.				39
Quantity on hand (Quantità in deposito)	Non ancora accertata dopo la distruzione dei magazzini.-				

Declassified E.O. 12356 Section 3.3/NND No. 785019

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) NO

5. Estimated time to get essential minimum working? 20 days (giorni)
(Tempo che si presume necessario per iniziare il minimo di esercizio)

6. Output (Produzione): a. Normal (Normale) 50 milioni kWh per anno
b. Now (Attuale?) niente
c. Estimated after 30 days (Presumibile entro trenta giorni) 35.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale e Meridionale

8. Use of output (uso della produzione?) luce e forza motrice

9. Type of plant and brief description stating age and condition? turbine doppie orizzontali a
(Tipo dell'impianto e breve descrizione dell'età e condizione?) bassa caduta - 5 gruppi da
2,000 KVA e 2 gruppi da 1,000 KVA-anno di costruzione 1901

N. B. - Attach report on damage and proposals for part or complete restoration giving approx cost E'in corso
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo) la riparazione
10. Is staff available for operation (avete personale specializzato per l'esercizio?) con ns/ mezzi.
SI

11. Are tools available (Avete disponibili gli attrezzi?) SI

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le Acciaierie di
Terni di proprietà Sociale e l'Officina Riparazioni dei Servizi Elettrici.

13. Are funds available (Avete fondi disponibili?) SI Additional required (Quantità in più necessario)

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)	lubrificanti per macchine elettriche.					39
Quantity on hand (Quantità in deposito)	Non ancora accertata dopo la distruzione dei magazzini.-					
Quantity required for each month of operation (Quantità richiesta per ogni mese di esercizio)	Per tutte le sette macchine circa quattrocento Kg. per mese.					

15. Number of maps attached (Numero delle carte topografiche e disegni allegati?) già consegnati

16. Give on back list of stores and materials required to start operation.
(Allegate a tergo le scorte ed i materiali necessari per iniziare).

17. Attach list of spare parts, machines, and materials available also other useful information.
(Allegate una lista dei pezzi e macchine e materiali disponibili ed ogni altra informazione utile).

Date (Data) Roma, 7 luglio 1944

SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

Signature (Firma)
Appointment (Titolo)

TIP. A. DE VITO - TEL. 27558

Declassified E.O. 12356 Section 3.3/NND No. 785019

AMG 4 - FORM E 3. Return original copy to AMG 4 (Tr. Pa.) File No

Complete this questionaire and return in triplicate within three days.
(Questionario da riempire e restituire in triplice copia entro tre giorni).

PUBBLIC UTILITIES (Servizi Tecnici)

1. Utility (Servizi) i. e. (cioè): ~~Water (Acqua)~~, Electricity (Elettricità) ecc.

2. Name and address of Utility (Nome e ubicazione del servizio) CENTRALE COTILIA a 3 Km. da Cittaducale (Rieti)

3. Name location of each plant and title of head official? (Nome indirizzo e titolo del capo di ciascun impianto?) Direzione Servizi Elettrici Società "TERNI" - PAPIGNO - Direttore Ing. Nestore Riccioni -

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) no

5. Estimated time to get essential minimum working? (Tempo che si presume necessario per iniziare il minimo di esercizio) 14 mesi dopo che le case costruttrici poste in Alta Italia potranno accettare le ns. ordinazioni

6. Output (Produzione): a. Normal (Normale) 140 milioni di Kwh. per anno
b. Now (Attuale?) niente
c. Estimated after 30 days (Presumibile entro trenta giorni?) niente

7. Area served (Zona servita?) Italia Centrale e Meridionale

8. Use of output (uso della produzione?) luce, forza motrice, impieghi elettrochimici ed elettrosiderurgici.-

9. Type of plant and brief description stating age and condition? (Tipo dell'impianto e breve descrizione dell'età e condizione?) 2 gruppi da 30.000 KVA alimentati con acqua di serbatoio.- 2 gruppi da 4.000 KVA alimentati con acqua fluente. Impianto costruito nel 1942.- Trovavasi in ottime condizioni.-

9. B. - Attach report on damage and proposals for part or complete restoration giving approx cost. (Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo) inizieremo la riparazione dell'impianto quando ci sarà possibile entrare in contatto con le case costruttrici situate nell'Italia Settentrionale.-

10. Is staff available for operation (avete personale specializzato per l'esercizio?) SI

11. Are tools available (Avete disponibili gli attrezzi?) si

12. What repair shops are available (Quale officine di riparazione avete disponibili?) nessuna adatta nell'Italia Centro-meridionale.-

13. Are funds available (Avete fondi disponibili?) si Additional required (Quantità in più necessario) //

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)			-		
Quantity on hand (Quantità in deposito)					

Declassified E.O. 12356 Section 3.3/NND No. 785019

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) no

5. Estimated time to get essential minimum working? 14 mesi dopo che le case costruttrici poste in Alta Italia potranno
(Tempo che si presume necessario per iniziare il minimo di esercizio) /accettare le ns. ordinazioni

6. Output (Produzione): a. Normal (Normale) 140 milioni di KWh. per anno
b. Now (Attuale?) niente
c. Estimated after 30 days (Presumibile entro trenta giorni?) niente

7. Area served (Zona servito?) Italia Centrale e Meridionale

8. Use of output (uso della produzione?) luce, forza motrice, impieghi elettrochimici ed elettrosiderurgici.-

9. Type of plant and brief description stating age and condition? 2 gruppi da 30.000 KVA alimentati con acqua di serbatoio.-
(Tipo dell'impianto e breve descrizione dell'età e condizione?) 2 gruppi da 4.000 KVA alimentati con acqua fluente. Impianto costruito nel 1942.- Trovavasi in ottime condizioni.-

9. B. - Attach report on damage and proposals for part or complete restoration giving approx cost. inizieremo la
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo) riparazione del-

10. Is staff available for operation (avete personale specializzato per l'esercizio?) /l'impianto quando ci sarà
SI / possibile entrare in contatto con le case costruttrici situate nell'Italia Settentrionale.-

11. Are tools available (Avete disponibili gli attrezzi?) si

12. What repair shops are available (Quale officine di riparazione avete disponibili?) nessuna adatta nell'Italia Centro-meridionale.-

13. Are funds available (Avete fondi disponibili?) si Additional required (Quantità in più necessario) //

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)					
Quantity on hand (Quantità in deposito)					
Quantity required for each month of operation (Quantità richiesta per ogni mese di esercizio)					

15. Number of maps attached (Numero delle carte topografiche e disegni allegati?) già consegnati

16. Give on back list of stores and materials required to start operation.
(Allegate a tergo le scorte ed i materiali necessari per iniziare).

17. Attach list of spare parts, machines, and materials available also other useful information.
(Allegate una lista dei pezzi e macchine e materiali disponibili ed ogni altra informazione utile).

Date (Data) Roma, 7 Luglio 1944

TERNI
SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

Signature (Firma) R. Lucchesi
Appointment (Titolo)

TIP. A. DE VITO - TEL. 27533

True Copy C. H. Col LAPPER

Declassified E.O. 12356 Section 3.3/NND No. 785019

AMG 4 - FORM E 2. (Return original copy to AMG 4 (Tn. Pu.)) File No

Complete this questionaire and return in triplicate within three days.
(Questionario da riempire e restituire in triplice copia entro tre giorni).

PUBBLIC UTILITIES (Servizi Tecnici)

1. Utility (Servizi) i. e. (cioè): ~~Water Acquis.~~ Electricity (Elettricità), ecc.

2. Name and address of Utility (Nome e ubicazione del servizio) CENTRALE GALLETO a 5 Km. da Terni.-

3. Name location of each plant and title of head official? (Nome, indirizzo e titolo del capo di ciascun impianto?) Direzione Servizi Elettrici Società "TERNI" - PAPIGNO - Direttore Ing. Nestore Riccioni -

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) no

5. Estimated time to get essential minimum working? sei mesi days (giorni)
(Tempo che si presume necessario per iniziare il minimo di esercizio)

6. Output (Produzione): a. Normal (Normale) 800 milioni kWh per anno
b. Now (Attuale?) niente
c. Estimated after ~~repairs~~ 6 mesi (Presumibile entro trenta giorni?) 800.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale - Meridionale
8. Use of output (uso della produzione?) luce, forza motrice, impieghi elettrochimici ed elettrosiderurgici

9. Type of plant and brief description stating age and condition? (Tipo dell'impianto e breve descrizione dell'età e condizione?) 4 gruppi verticali da 43.000 KVA. Salto 200 m.-Impianto a flusso totalmente regolato con serbatoio. Costruito nel 1927. Trovavasi in ottime condizioni.-

10. B. - Attach report on damage and proposals for part or complete restoration giving approx cost (Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo) E' in corso la riparazione con ns. mezzi.

Is staff available for operation (avete personale specializzato per l'esercizio?) si

11. Are tools available (Avete disponibili gli attrezzi?) si

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le nostre Acciaierie di Terni e l'Officina Riparazioni dei Servizi Elettrici.-

13. Are funds available (Avete fondi disponibili?) Si Additional required (Quantità in più necessario) //

14. Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)	Lubrificanti per macchine elettriche
Quantity on hand	Non ancora accertata dopo la distruzione dei

Declassified E.O. 12356 Section 3.3/NND No. 785019

Nestore Riccioni -

4. Is each plant working NOW or NOT? (L'impianto si trova ora o NON?) no

5. Estimated time to get essential minimum working? sei mesi days (giorni)
(Tempo che si presume necessario per iniziare il minimo di esercizio)

6. **Output (Produzione):** a. Normal (Normale) 800 milioni kWh per anno
b. Now (Attuale?) niente
c. Estimated after ~~six~~ 6 mesi (Presumibile entro trenta giorni?) 800.000 kWh giorno

7. Area served (Zona servita?) Italia Centrale - Meridionale
8. Use of output (Uso della produzione?) luce, forza motrice, impieghi elettrochimici ed elettrosiderurgici

9. Type of plant and brief description stating age and condition? 4 gruppi verticali da 43.000 KVA. Salto 200 m.-Impianto a flusso totalmente regolato con serbatoio. Costruito nel 1927. Trovavasi in ottime condizioni.-
(Tipo dell'impianto e breve descrizione dell'età e condizione?)

9. B. - Attach report on damage and proposals for part or complete restoration giving approx cost E' in corso la riparazione con ns. mezzi.
(Allegate proposte per la restaurazione parziale o completa, date il costo approssimativo)

10. Is staff available for operation (avete personale specializzato per l'esercizio?) si

11. Are tools available (Avete disponibili gli attrezzi?) si

12. What repair shops are available (Quale officine di riparazione avete disponibili?) Le nostre Acciaierie di Terni e l'Officina Riparazioni dei Servizi Elettrici.-

13. Are funds available (Avete fondi disponibili?) Si Additional required (Quantità in più necessario) //

14 Types of fuel and lubricants used (Tipo dei combustibili e lubrificanti usati)	Lubrificanti per macchine el[illegible]riche				
Quantity on hand (Quantità in deposito)	Non ancora accertata dopo la distruzione dei magazzini.-				
Quantity required for each month of operation (Quantità richiesta per ogni mese di esercizio)	Per il funzionamento dei 4 gruppi circa 1000 Kg. al mese.-				

15. Number of maps attached (Numero delle carte topografiche e disegni allegati?) già consegnati.

16. Give on back list of stores and materials required to start operation.
(Allegate a tergo le scorte ed i materiali necessari per iniziare).

17. Attach list of spare parts, machines, and materials available also other useful information.
(Allegate una lista dei pezzi e macchine e materiali disponibili ed ogni altra informazione utile).

Date (Data) Roma, 7 Luglio 1944

SOCIETÀ PER L'INDUSTRIA E L'ELETTRICITÀ

Signature (Firma)
Appointment (Titolo)

TIP. A. BE VITO - TEL. 27538

Ita. copy E.H. to Foggia

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

Corps
I. Co
Number

ALLIED CONTROL COMMISSION

OFFICIAL BUSINESS

Reference No.
Filing Time
For use by Adj Msg Ctr.

OUTGOING MESSAGE

Office of origin HQ ACC Public Works Sub Commission Date 2 Aug 45
Section - Directorate - Sub-comm. etc.

Classification Restricted Telephone No. 614
Restricted - Confidential - Secret

Originating Officer Jenny

Precedence Routine
Deferred - Routine - Priority - Operational Priority - Urgent

To: AMG FIVE ARMY Addressee of one August

REF your cable No 3289 PD Paren to AMG FIVE ARMY from HQ. ACC signed STONE PAREN Forward plans LARDERELLO generating unit to Public Works and Utilities Sub Commission ACC

Distribution:

Content and classification authenticated by

Declassified E.O. 12356 Section 3.3/NND No. 785019

2 Aug 44

Lt Col.

Packard & Capt Elliot who has returned copy of attached re arrangement which him to write. to have plans sent to us.

Hdtrs

Declassified E.O. 12356 Section 3.3/NND No. 785019

1 AUG Recd

RESTRICTED

07.W.10 207

Econ Sec

14/01

RQ ASG FOR INDUSTRY SUB COMMISSIONER

AIG FIFTH ARMY SIGNED ELISE

3289

AUGUST 1/0833

RESTRICTED

NONE

SITE: NONE

TO AMPLIFY POSSIBILITIES AT LARDARELLO ONE- TWELVE THOUSAND KILOWATT-TURBO GENERATOR CAN BE REPAIRED IF FOUNDRY CAPABLE OF MAKING CASTING THREE POINT FIVE BY TWO POINT FIVE BY ZERO POINT THREE METERS FOR SHELL AND BEARING OF MACHINE IS AVAILABLE. ADVISE WHERE PLANS MAY BE SENT. REFER TO OUR LETTER 205/ ORB 5 OF 25 JULY TO GIVE TOTAL OF EIGHTEEN THOUSAND KILOWATTS. SITE OUR 194

HEADQUARTERS 1 AUG 1944 A. C. C.

4478 90

Capt. Elliott.

6-24A

ASG DIST

ASTON INDUSTRY SS

INFO A/GS
XGCM SEC
FILE (2)
FLOAT

Sir Cable sent asking for plans to be sent to us.

RESTRICTED

AUGUST 1/1230

Declassified E.O. 12356 Section 3.3/NND No. 785019

0 Syone 76 /00

REPORT OF PLANT CONDITIONS

Name of Plant	Date of inspection	Previous Output KW.	Present Output KW.	Conditions of Plant
ACQUORIA NEW (Hydro)	23/7	38.250	0	Plant destroyed.(Indoor switching station intact)
ACQUORIA OLD (Hydro)	23/7	10.000	0	Plant destroyed. Switching station common to Acquaria New plant.
SELVENA (Hydro)	20/7	3.000	0	Extensive damage to turbines, generators, transformers & switchboard. Reparations can be completed by 30/9/44.Expected output of 700.000 KW. per month. Hydraulic works in good condition.
MANDELA (Hydro)	23/7	6.000	0	Generators destroyed. Transformers & switches are in good condition.
CASTEL MADAMA (Hydro)	23/7	15.000	0	Generators destroyed. One is believed repairable. Hydraulic works are repairable. 5 Transformers destroyed. One is believed intact.
ARCI (Hydro)	20/7	8.320	4.000	Plant in good condition. Output limited by lack of water.
CALLETO (Hydro)	21/7	105.000	0	Completely destroyed. One set is believed repairable in 6 months, another in one year.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Plant	Date of inspection	Previous Output KW.	Present Output KW	Conditions of Plant
FARFA I	21/7	16.000	0	Completely wrecked. 2 transformers believed in good condition.
FARFA II	21/7	8.400	0	One generator is damaged by fire. Can be back in service in two months. Other generator has the shaft bent. Transformers are damaged by fire.
SCALELLE (Hydro)	20/7	6.000	1.500	Plant is in operation. Output is limited by lack of water.
SUBIACO (Hydro)	20/7/	10.000	1.500	Only one set repaired with pieces taken from other destroyed machines is working. Modern outdoor & indoor station is in good conditions.
VULOI (Hydro)	20/7	1.600	1.000	- Plant intact -
TRAPONZO (Hydro)	20/7	600	600	- Plant intact -
FIORITELLA (Hydro)	20/7	450	450	- Plant intact -
S. SAVINO (Hydro)	20/7	800	800	- Plant intact - Its production can reach 1200 KW.
COMUNACQUA (Hydro)	20/7	6.000	4.000	Plant in good conditions. Output is limited by lack of water.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Plant	Date of inspection	Previous Output KW.	Present Output KW.	Conditions of Plant
VESTA (Hydro)	June	2.970	2.000	- Plant in operation -
CERVARA	July	9.040	0	Severely damaged. Reparations have been started. One 2000 KW. group is expected to be in operation by 1/8/44.
NERA MONTORO (Hydro)	June	20.000	15.000	- Plant intact -
AURELIA Aluminium Factory Steam Station	20/7	2.500	500	Generators are in good conditions. Output is limited by transformers capacity.
AVENTINO (Hydro)	June	8.400	0	Completely destroyed.
CALUSCIA (Hydro)	June	39.600	20.000	Plant in good conditions.
CEPRANO (Hydro)	June	14.720	7.360	Plant inundated by flood. Salvage work is in hand. One 7360 KW. set to remain.
DE CECCO (Hydro)	June	1.800	600	One set is repaired & working. Two remaining sets less alternators.
FONTANA LIRI	June	2.880	0	Completely destroyed.
PONTE CUPA (Hydro)	June	4.800	0	Completely destroyed.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Name of Plant	Date of inspection	Previous Output KW.	Present Output KW.	Conditions of Plant
PAPIGNO (Hydro)	June	58.400	0	Completely destroyed
FORCHE (Hydro)	24/7	150	80	The two existing sets are operating one machine at a time because of lack of water.
MOLLETTI (Hydro)	24/7	200	0	Plant is intact. Only the penstock was holed by bomb. Plant will be operating by 15/8/44 with an output of 150 KW.
CARDINALE (Hydro)	24/7	45	45	Plant in operation
LARDERELLO (Hydro)	24/7	79.000		Completely destroyed
CASTEL NUOVO	24/7	45.000		Completely destroyed
ASCHE (Hydro)	24/7	30	0	Completely destroyed
FERRIERA (Hydro)	24/7	30	30	Plant operating
FORCHE (Hydro)	24/7	150	75	Plant operating with one machine at a time because of lack of water.
SALISANO (Hydro)	26/7	8.300	0	Completely destroyed

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Name of Plant	Date of inspection	Previous Output KW.	Present Output KW.	Conditions of Plant
FRIGO CO. Central N° 1 (Hydro)	24/7	350	100	Sets in perfect order. Because of lack of water only 1 machine is running. Normally they produce 250 KW.
FRIGO CO. Central N° 2	24/7	750	375	One unit is operating. The other has been disassembled and hidden. It will be re-installed in a few days.
FRIGO CO. Central N° 3	24/7	60	0	The set is removed & stored. It will be re-installed in three months & give 40 KW.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel. 489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LWL/mo

ACC/158/PWU

31 July 1944

Subject: Electric Power interruption Crotone
Oxygen plant.

To : H.Q. Region VII : attention Major Chamberlain
c.c. Region III : attention Capt. Ryan.

1. Attached is copy of telegram from C.E. Distwo 2 regarding frequent power failures to the Crotone plant which you have already received.

2. This office is also interested in the matter and desires to know the results of your findings and any remedies taken or suggested to improve the situation.

W.K. LAPPER
Lieut-Colonel
Chief, Util.Div.Adm.

1 - enclosure
c.c. telegram 26 July 44.

051

20
29

Declassified E.O. 12356 Section 3.3/NND No. 785019

File

Pt 4
158 Cos. 6560 IX/1

HEADQUARTERS
ALLIED MILITARY GOVERNMENT
REGION VIII

RVIII/100/4/[illegible]13

22nd July 1944

SUBJECT : Reports by Electrical Utility Officer, Region VIII

TO : Director, Public Works and Utilities Sub-Commission

1. Forwarded herewith for information are three reports by Capt. P.D. KALV, Electrical Utility Officer with this Region.

2. It is appreciated that these reports are late, but they were deliberately held up with the intention of not forwarding them at all in view of the remarks of the Regional Engineer Officer and the Executive Officer. Copies of their letters are attached at Appendix A and B respectively. However it has since been decided to send the reports forward for your information and records.

For the Regional Commissioner :

J. HOWARD SALTER,
MAJOR RA,
ADJUTANT.

JHS/pp

Copy to : Executive Officer
Regional Engineer.

Lt Col Harper
For your information and file.
26/7

HEADQUARTERS
2 AUG 1944
A. C. C.

APPENDIX "A"

SUBJECT : Capt. W.T. Daly.

Grosseto.

3 July 1944

TO : Regional Commissioner,
EQ. Region VIII.

FROM : Regional Engineer Officer,
Region VIII.

In accordance with your instructions I confirm that, in my opinion, the above officer, attached to me for duty as Electrical Utility Officer, is totally unsuited for the work required of him in this Region.

He is undependable and irresponsible, and appears incapable of reporting on the results of his inspections.

He states that he must be independent of any control, and that he does not recognise that he is a member of my staff.

In view of the fact that there are many small electrical problems, as well as much larger works in the areas not yet handed over, that are extremely important in view of the dependance of utilities on electric power, may I have an efficient officer with power installation and transmission experience as soon as possible please.

F.C.S., RE
Regional Engineer Officer.

Copy to :

Director, Public Works & Utilities Sub-Commission.

Ref A copy of this letter 7 July 1944 From D Daly Capt AC.

A True Copy

28

ROBT. G. KIRKWOOD,

Declassified E.O. 12356 Section 3.3/NND No. 785019

In accordance with your instructions I confirm that, in my opinion, the above officer, attached to me for duty as Electrical Utility Officer, is totally unsuited for the work required of him in this Region.

He is undependable and irresponsible, and appears incapable of reporting on the results of his inspections.

He stated that he must be independent of any control, and that he does not recognise that he is a member of my staff.

In view of the fact that there are many small electrical problems, as well as much larger works in the areas not yet handed over, that are extremely important in view of the dependance of utilities on electric power, may I have an efficient officer with power installation and transmission experience as soon as possible please.

F.S.L. Lee
Regional Engineer Officer.

Copy to :

Director, Public Works & Utilities Sub-Commission.

Ref 2 copy of this letter 7 July 1944 Paul D Kelly Capt AC.

A TRUE COPY

Robt. D. Kirkwood
LIEUT., U. S. NAVY,
COMMDG., U.S.N. ADVT.,
NAVAL OPERATIONS UNIT.

28

Declassified E.O. 12356 Section 3.3/NND No. 785019

APPENDIX "B"

TO : Regional Commissioner.

1. With regard to the 3 reports below by Capt EALY

1A of 30th June
2A of 2nd July
3A of 3rd July

I have discussed these with Major LEE and do not recommend that they shall be forwarded to SOE. Major LEE does not agree with them and I feel that they contain inaccuracies.

2. Specific points are:-

a. In the report of 30th June, 1A - para 2 - 3(c) on page 2.
The SCARCITY notice of electric current supply comes into CROOKED via a number of towns, e.g., MUNCIANO and SCARPANO etc. CROOKED only gets what is left over and this cannot be relied on. I asked Captain EALY at once for the capacity of this line and the controller is - he could give me no answer. It now appears that Major LEE sent him to verify this important particular point and he failed to do so. See last sentence on page 2 of Major LEE's situation report No.2 of 3rd July. marked X

b. In the report of 3rd July 2A - all sorts of wild statements are made - in para 4(a) on page 2 he complains of the waste of oxygen - saying that 4 bottles were used to produce 25 rollcuts, whereas he (Ealy) has 150 cuts done with 2 bottles of oxygen.
The facts apparently are that 2 empty oxygen containers were on the premises and the Italian engineer used up the remnants of the gas in them to cut the first rolls. When I questioned Captain EALY as to the source of his information - he could only say that some unknown workman had made some statement which he could not well remember, but he had translated it into this definite charge. I think the whole report is entirely unreliable and Major LEE agrees.

c. As regard 3A - this fulsome report would hardly be welcomed by the Unit in question. These Engineer Units evidently do very fine work, but a report of this sort could not help the Unit or the men concerned in any.

3. I have given Captain EALY a copy of the report of 3rd July made on him personally by Major LEE and asked him to deal in his reply - which I presume should be awaited before further action is taken. These reports of Captain EALY will then have to be considered again.

27

J.A.C. HENRYMICK,
Colonel,
Executive Officer,
Region VIII

10th July 1944.

Declassified E.O. 12356 Section 3.3/NND No. 785019

2. Specific points are:-

a. In the report of 30th June, LA - para A - 3(c) on page 2.
The exact/a source of electric al supply comes into QUEBRADA via a number of towns, e.g., MANCIANO and SCANSANO etc. QUEBRADA only gets what is left over and this cannot be relied on. I asked Captain KELLY as once for the capacity of this line and who controlled it - he could give me no answer. It now appears that Major LEE sent him to verify this important particular point and he failed to do so. See last sentence on page 2 of Major LEE's situation report No.2 of 3rd July. marked X

b. In the report of 3rd July 2A - all sorts of wild statements are made - in para "B" on page 2 he complains of the waste of oxygen - saying that 4 bottles were used to produce 23 rollcuts, whereas he (Kelly) can 133 cuts done with 1 bottle of oxygen.
The facts apparently are that 4 empty oxygen containers were on the premises and the Italian engineer used up the remnants of the gas in them to cut the first rolls. When I questioned Captain KELLY as to the source of his information - he could only say that some unknown workmen had made some statement which he could not tell remember, but he had translated it into this definite charge. I think the whole report is entirely unreliable and Major LEE agrees.

c. As regard 2A - this fulsome report would hardly be welcomed by the Unit in question. These Engineer Units evidently do very fine work, but a report of this sort would not help the Unit or the men employed by same.

3. I have given Captain KELLY a copy of the report of 3rd July made on his personality by Major LEE and asked him to deal in his reply - which I presume should be received before further action is taken. These reports of Captain KELLY will then have to be considered again.

27

J.A.C. MERRYWEATHER,
Colonel,
Executive Officer,
Region VIII

10th July 1944.

A TRUE COPY :

[signature]
MAJOR. G. HARWOOD,
GRADING, R.A. (A.A.F.
REGIONAL COMMISSIONER.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

3A

3 July, 1944

To: Public Works and Utilities Subcommission, A.C.C., A.P.O. 394
From: Captain Paul D. Kalv, Air Corps, Electrical Engineer Officer, Region VIII
Through: Regional Commissioner, Region VIII
Subject: Request for commendation of certain personnel of U.S.Army.

References are made to my report dated 30 June, 1944, Subject: Electric Power and Telephone Communication in Grosseto, which is supplemented by report of 3 July, 1944, Subject: Electric Power in Grosseto.

From the above reports it could be seen that the work of blocking the locks of the destroyed dam, 3 miles east of Grosseto, to raise water for hydro-electric generating station was possible only through the excellent cooperation of the following personnel of the U.S.Army.

My first contact with the 41-st Service Group, Air Corps, was established on 25 June, 1944, through Major G.B. Simpson, A.C., Chief of the Ordnance Dept. of the Group Hqrs. Major Simpson upon carefully consideration of the problems presented to him referred me with a letter to 1-st Lieutenant I.E. Michell, C.O. of the 1058 Ordnance Supply and Maintenance Company, Aviation, who has since been helping me in many different ways. On 26 June, 1944 he ordered the welding truck and two enlisted men: T-4 Almon Tibbetts, ASN 31025074 and T-4 Rodney Gradinar, ASN 35382100 to go on the job of cutting the rails to a desired length and burning holes on the cut ends. Well over 130 cuts and as many holes were made in 1½ days using approx. ½ bottle of acetelyn and 1½ bottles of oxygen. The work was done in thorrow and excellent manner. It is deeply regretted that Sgt. Tibbetts was slightly injured on the job. On the same date he allowed a weapon carrier truck driven by Cpl. Edward J. Pearsick, ASN 33134050 to be used by the Genco Civile, Sr. Primavera late in the evening after normal working hours. The truck went out to a local Italian warehouse hidden in the mountains approx. 15 miles away. It brought back a great load of sand bags, which were necessary to block the leakages at the lock barriers, and to build a temporary dam to divert the main waterflow into the power canal thus making the job of blocking that much easier. For the reasons unexplained to me by Sr. Primavera this temporary dam was not built.

On 27 June, 1944, Lt. Michell ordered his prime mover operated by Pfc. John W. Crickenburger, ASN 33510653 to assist me on the job. The derrick sorted out and loaded all the rail cuts on the truck, which carried the rails to the dam, and unloaded them very close to the assembly place. The entire work was done in less than a day, which greatly speeded the progress of the job.

Another U.S.Army unit which greatly assisted the job was the 835 Engineer Aviation Battalion under the command of Capt. Sanderman, C.E. The latter personally inspected the work required at the dam. He ordered his air-compressor truck with two E.M. T-5 Floyd F. Hislip, ASN 39036078 and T-5 Howard I. Sneddon, ASN 33231856 to go to the dam to give necessary assistance in cleaning the hard packed sand and gravel deposits at the places of blocking. I personally observed Sgt. Hislip working below the bridge of the dam without regard to his personal comfort standing half wet in a tiny craft, and blowing the sand and dirt from under rail cuts. Capt. Sanderman allowed his air-compressor to remain on the job as long as it was necessary and as long as it could be spared. Sgt. Hislip reported to me that on 30 June he brought his truck to the other side of the river making considerable run around the damaged bridge in order to charge an air-compressed bulb of existing Diesel engine. With limited means of his truck he charged the bulb to approx. 8 lbs of pressure. Unfortunately this pressure was not sufficient to start the Diesel, which of course was not the soldier's fault.

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Public Works & Utilities Subcommission, A.C.C. 3 July, 1944

It is respectfully recommended that all the personnel mentioned in the letter be highly commended through proper channels for their excellent spirit of cooperation and in actually doing a very useful work for the military and civilian population of Grosseta, which, of course, was beyond their direct duties.

Paul D. Kalv

Paul D. Kalv, Captain Air Corps
Electrical Engineer Officer
Region VIII, A.C.C.

Copies to:
Provincial Commissioner, Grosseta
C. O. 41-st Service Group, Air Corps
C. O. 835 Engineer Aviation Battalion

25

1A

3 July, 1944.

To: Public Works and Utilities Subcommission, A.C.C. APO 394.
From: Captain Paul D. Kalv, Air Corps, Electrical Engineer Officer, Region VIII
Through: Regional Commissioner, Region VIII.
Subject: Electric Power in Grosseta.

Supplementing my report of 30 June, 1944, the following conditions in regard to the power were found upon my arrival at Grosseta on 1 July, 1944. The hydro-electric station, near Grosseta, was not functioning because no water had been turn on to operate it. Upon inquiry at the Genio Civile Sr. Primavera the latter informed me, that he had been expecting the permission of Major Lee to whom, in my absence, he had reported the completion of the work at the dam on 30 June, 1944, but whose attention he had also called to a possible interference with main traffic on the highway #1, if the existing culvert under the by-pass would not carry all discharged water. The above culvert is located on highway #1 approx. 3 miles south of Grosseta.

Major Lee was out of town to ascertain the truthfulness of the above statements. The following morning Major Lee was consulted and he informed me that the permission to open the water had been given, but Sr. Primavera still insisted that it was not the case.

The water was partially turned on at about 900 hrs on 2July, 1944, but the station can only be put to operation the following morning, 3 July, due to a decreased waterflow to fill in the reservoir, and also due to the necessity of running the machinery idle to ascertain the security and the correctness of all connections and auxiliary apparatus.

The discharge water problem was reported over the telephone to the Engineer Section of the 5-th Army (Capt. G. H. Kenyon) for appropriate decision and necessary action. This morning Major Lee informed me that he ordered the Grosseta hydro-electric station to be shut down. Upon my suggestion that this measure may not be necessary as far as present discharge of water is concerned, and that it is a pity to shut down the station after so much efforts of all concerned for starting it, Major Lee indicated that this was his decision.

On 2 July, 1944, upon examination of the completed work at the dam it was observed that a considerable amount of water was flowing through the four gates, which were supposed to be blocked, and the main loss of water occurs at the 5-th lock, which I instructed to be likewise blocked, but which appeared to be untouched. This lock was previously reported as being damaged, and its gate being only partly closed. The water markings on the shore and on the walls of the dam showed actually a decrease of water reservoir, which aparently was due to the increased leakages through the blockings and possibly a reduced amount of waterflow. No explanation of the reasons to fail the blocking of the waterflow at the gate #5 was given to me by Sr. Primavera. Upon consulting on the subject with Major Lee, the latter disclaimed any knowledge of this question. As far as I was able to ascertain Major Lee had not visited the dam either during the work of blocking the gates or immediately upon receiving report that the work has been finished.

My observations of the behavior and the manner of executing the repair work at the dam by the Genio Civile, Signor Lodovico Primavera makes me doubt his integrity and gerdial cooperation, which might be deducted from the following facts:

1. Inspite of Sr. Primavera's arrival at the city of Grosseta on or about 21 June, 1944, he made no attempt to repair the dam or even to clear the existing debries and to safeguard the tools and auxiliary equipment, some of which, as it was reported to me, have been missing since his arrival.

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1. Inspite of Sr. Primavera's arrival at the city of Grosseta on or about 21 June, 1944, he made no attempt to repair the dam or even to clear the existing debries and to safeguard the tools and auxiliary equipment, some of which, as it was reported to me, have been missing since his arrival.

2. Upon receiving orders or permission to effect the repair of the dam Sr. Primavera proceeded in such a slow pace, that the completion of the work was not at all certain. In fact the work was at a stand-still at the time of my arrival at Grosseta and of the inspection of the dam and hydro-station on 25 June, 1944.

(continued on sheet # 2)

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(continued from sheet # 1)

3. The work of cutting iron rails to a desired length by an acetilen torch showed either complete incompetence or criminal waste of very scarce oxygen gas used for this purpose. I was informed that total of 23 rail cuts have been made prior to my arrival by workmen under the direction of Sr. Primavera, who had used approx. four steel bottles of oxygen. Further cutting of rails has been stopped due to the lack of oxygen. On 26 June, 1944 a welding truck, which I was able to borrow from the 41-st Service Group, arrived on the job, and the remaining 130 cuts have been made in a day and a half using only one and a half bottles of oxygen. The work was accomplished by Sgt. Tibits of the above unit.

4. On 26 June, 1944 when the welding truck was cutting rails it was found, that either through neglect or possibly on purpose sabotage, the only available means of transportation - the horses drawn carriage- had been released just prior to the arrival of the truck. Upon my request to ascertain the whereabouts of the carriage and to commence transporting the rail cuts to the dam - the carriage could not be found anywhere. The following morning when the rails were being transported to the dam by the prime mover, borrowed by me from the same 41-st Service Group, - the horses-drawn carriage appeared working. I had to give order to suspend the carriage because of its definite interference with the operations of the prime mover.

5. The work of placing the rail cuts to the dam openings was not started until 27-th of June. Upon my arrival at the dam on the morning of 27 June, Sr. Primavera reported to me that before actual placing of the rails into the grooves of the walls - the bottom of the gate intakes and the lower portions of the grooves must be cleaned from the hard packed sand and rocks deposits. On my question as to why this work had not been done before no satisfactory explanation was given to me by Sr. Primavera. This again considerably slowed down the progress of the work, and its tempo was stepped up only, when on 28 June an air-compressor truck arrived at the dam. The compressor was borrowed by me from the 835 Engineer Aviation Battalion.

6. At the time of arrival of the air-compressor Sr. Primavera was engaged in blocking the 1-st gate of the dam. Rail cuts were placed one by one in the wall grooves and the sandy dirt underneath the rails is being shoved around with a wooden stick by a laborer. On my request of the reason as to why the work had not been started at the more important central gate, where the waterflow was considerably faster and the washing out process of the sand deposit would have been more effective - again no satisfactory explanation was given to me by Sr. Primavera. Upon my recommendation of the use of air-compressor and the shifting of the work to the central gate, Sr. Primavera replied, that he does not consider the air-compressor would help him under the circumstances, and that he prefered to continue the work as and where he had been doing. Upon my demand of the number of days required for him to finish the job, he rather boldly replied that he expected to finish the entire job in two and a half days. Observing Sr. Primavera to be somewhat obstinate and for some reason unwilling to avail himself of a better and faster means of expediting the work, I told Sr. Primavera that although I had no intension of forcing upon him a more technical and in my opinion more effective means of execution of work, - and although I would be willing to wait the two and a half days until the work has been completed, - yet in view of his evident shortsight, I had to make with him a definite bargain. Since he refused the help of a more modern machinery, and since he insisted on continuing the work his own way, - he should take the entire responsibility of completion the work in 2½ days. However, in case the work has not been completed in 2½ days, he should agree to stand a court martial trial. Immediately Sr. Primavera agreed to shift the work to a central gate, and to

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abouts of the carriage and to commence transporting the rail cuts to the dam - the carriage could not be found anywhere. The following morning when the rails were being transported to the dam by the prime mover, borrowed by me from the same 41-st Service Group, - the horses-drawn carriage appeared working. I had to give order to suspend the carriage because of its definite interference with the operations of the prime mover.

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7. Through a cordial cooperation of Captain Sanderman, C. O. of the 835 Engineer Battalion the air-compressor was placed at my disposal as long as it may be needed and as long as it could be spared. When I left Grosseto on 29 June, 1944, Sr. Primavera was told that he could take the full advantage of the presence of the air-compressor and as long as he may need it. I even suggested that the compressor might be tried to charge a compressor bulb for starting

(continued on sheet # 3)

Declassified E.O. 12356 Section 3.3/NND No. 785019

1A

(continued from sheet # 2)

... for starting the Diesel engine, which I likewise suggested to put in readiness to operate the gate machinery as soon as necessary belt has been procured. Upon my inspection of the dam on 2 July I found, as reported before, the air-compressor was discharged on 30 June without ~~it~~ completing the entire job. The gate #5 was not blocked by a rail barrier (as other four gates), and the sand deposits were not cleaned from underneath the half lowered gate # 5, which as previously reported to me was supposed to be damaged. As the result of failure to block the gate # 5 a considerable amount of water is now escaping from the dam. The building of sufficient reservoir has thus been retarded, and the hydro-electric station could not be operated at its full capacity.

3. As previously reported the hydro-station near Grosseta was not in operation on 1 July after the work of blocking the dam had been completed, and it is continue to be idle inspite of some water reservoir being at hand and the hydro-electric machinery being kept in complete readiness for the past four - five days. This is due to a definite uncertainty arised in the minds of all concerned in the capability of the culvert (mentioned above in this report) to pass all the water discharged from the hydro-turbine. Sr. Primavera being no doubt very well acquainted with all conditions of the existing waterways in and around Grosseta, he has never mentioned this problem to me before. It looks that he deliberately withheld this knowledge until such a time when everything else had been placed in readiness to commence operation of the Grosseta hydro-electric station. On my insisted questioning as to why he did never mentioned this possible problem to me, so that suitable steps could have been taken to remove this obstacle at the time when other work was in progress - Sr. Primavera did not give me any satisfactory explanation. He tried, however, to evade the issue by placing the responsibility for the present delay of the hydro-electric station operation on non-decision of Major Lee, whom he reported the condition July 1-st.

In view of the daring need of electric power in and near Grosseta, most of which is required for one or the other phase of prosecution of the War any delay in generating this power ought to be scrupulously investigated, and the offenders severely prosecuted. Therefore, in view of all above it is strongly recommended:

A. To investigate the Genio Civile, Sr. Lodovico Primavera
B. To remove him from his office until such investigation has been completed, and
C. To charge him with a suitable offence, possibly a sabotage due to
   a. his retarding the progress of the work in restoring the water power to operate the only available electric power generating plant near Grosseta by
      aa. Deliberate withholding the information of the discharge water problem
      bb. Definite attempt to refuse of using modern machinery to speed up the progress of the work
      cc. Misdirection of available means of transportation
      dd. Inefficient manner with which the work has been conducted, and the lack of foresight to cope timely with arising problems
   b. his neglecting the instruction to block all the damaged gates, which thus include the gate # 5
   c. his waste of scarce Government material, etc.

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   b. his neglecting the instruction to block all the damaged gates, which thus include the gate # 5
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Paul D. Kalv

Captain Paul D. Kalv, Air Corps.
Electric Engineer Officer, Region VIII

Copies:
Provincial Commissioner, Grosseta
Major P.S.L. Lee, R.E.

Declassified E.O. 12356 Section 3.3/NND No. 785019

14

30th June 1944.

To: Public Works and Utilities Sub-Commission.

From: Capt Paul D.Kaly, Air Corps, Electrical Engineer Officer
(Through Regional Commissioner, Region 8)

Subject: Electric Power and Telephone Communication in Grosseto.

Following conditions have been found upon arrival in Grosseto on 27th June 1944.

A. Electric Power.

1. Existing Conditions. No power was available in city. Bulk of power used for city needs was brought originally from the North, which is cut off at present. Approximately three miles East of Grosseto a small hydro-electric plant was found undamaged but standing idle due to the lack of water power to operate it. The capacity of this plant is 70/120 Kw depending on flow of water available. The nearby dam was found damaged. Out of seven gates four are practically beyond repairs, one gate may be repaired at the later date and two gates although are undamaged can only be operated by hand.

On 25th June when both dam and hydro plants were inspected, it was found i) neither the dam nor the plant were damaged. Later it was ascertained that considerable amount of laterial and equipment have been taken from both places by passerbys and by visiting troops. ii) no work to put either place in repair and operation was in progress. Neither the Electrical Engineer or the Manager were in city.

2. Estimate of the situation. After lengthy search a chief technician Sr Atanasi was found at his house late in the afternoon. Sr Atanasi was summoned to the office to give information on electric power situation which was found to be as follows:

Although some steps have been proposed to block out the damaged locks in order to divert necessary water power for operation of the hydro plant, no work was actually in progress since the local power company had no means of effecting the plans. The proposed plans of blocking the flow of water through the damaged gates were found further complicated by the necessity of cleaning the wall recesses and the bottoms of intakes from considerable deposits of hard packed sand and rocks.

It was estimated therefore that the proposed work would take at least a month time to effect the plans by using local resources.

21

3. Action taken. Steps were immediately taken to ascertain available technical means in the Army in order to execute the repair of the dam. Through co-operation of the 41 Service Group Air Corps, a welding truck was borrowed and it was placed to cut available for this purpose iron rails to the necessary lengths. The rails were needed for blocking the flow of water at the damaged gates. The following day (27th June) the prime mover (truck with platform with derrick) was borrowed from the same 41 Service Group to sort out and to

Declassified E.O. 12356 Section 3.3/NND No. 785019

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Condition at the time of departure (29th June) two damaged have been blocked. The work of blocking the remaining three gates is expected to be finished by to-day. Small Diesel engine to operate

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the two undamaged gates was reconditioned and is ready for operation as soon as necessary belts can be procured for driving electric machinery.

(b) Hydro Electric Station. The station was placed in readiness to produce power as soon as the water begins to flow in power canal. It is expected the hydro plant is in operation to-day.

(c) Illumination in the City of Grosseto. Sufficient electric power was brought into the City by the hydro electric plant Scarceta approx. 10 mile South East of Manciano. The available power of 15 kilovolts at Scarceto was transformed into the distribution power near Grosseto at 10 Kilovolts by installing two back to back transformers at Scansano. Through the personal initiative of the Chief technician Sr Atanasi the damaged portions of power line especially near Istia were repaired, thus making it possible to bring the available power from Scarceto to Grosseto. At approx. 1930hrs on 28th June 1944 the lights in Grosseto went on. The power was ordered to be cut off at 23hrs so that the necessary priority of allocation of power would be established the following day (29th June). Likewise the suitable electric rationing system must be placed in effect immediately.

B. Telephone Communications.

Upon arrival in Grosseto on 27th June it was found no telephone communication in the city. The telephone company officials were out of town and the first contact with them was established in the morning of 27th June 1944. On the 25th June, however, the local telephone station in the dugout was inspected and found in operating condition. On 27th June the remaining establishments of the telephone company were inspected. The following represents the essential information on the telephones in Grosseto.

The four manual switchboards of total approx. 240 lines as well as some long-distance and power equipment are located in a bomb-proof shelter. The storage battery, the power board; the two sets of converters and ~~Ringing~~ machines and the main Distributing Frame were found in another building few blocks away. The automatic telephone central equipment which was originally installed in this place had been removed and was stored in the company's warehouse some 20 - 30 Km away. The local warehouse also a few blocks away, was found to contain some cable and aerial wire material, as well as automatic telephone apparatus and first hand needs for repairing the city aerial lines.

The telephone company owns a 3-storey building in the centre of the city where the central automatic office was originally proposed to be removed. Since the existing manual switchboard was found ready to give service - the telephone company officials were summoned to the provincial office on the 29th June to receive necessary orders and the sequence for installing the essential telephones throughout the city.

Declassified E.O. 12356 Section 3.3/NND No. 785019

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The telephones are now being gradually placed in operation as soon as necessary telephone apparatus previously installed in various premises are located and repossessed by the telephone company.

The installation of the existing automatic equipment might be effected only at much later date when the war zone conditions near and around the city of Grosseto has been moved considerably forward.

Sgd Paul D.Haly
Captain Air Corps.
Electrical Engineer Officer of the Regio

Declassified E.O. 12356 Section 3.3/NND No. 785019

Declassified E.O. 12356 Section 3.3/NND No. 785019

T-1.489081

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

WML/ce

ACC/158/PWU

1 Aug 44

SUBJECT: Electric Power Requirements.

TO : V.P. Economic Section.

1. By carefully planned and deliberate action, the German Armies have so completely wrecked most of the important electrical generating plants in Central Italy as to seriously handicap our war effort, to say nothing of meeting the most essential civilian needs. Not only were the plants destroyed in general, but each important mechanical unit was mined or burnt beyond any hope of repair. The small amount of canibalization which is possible will only produce a fraction of the current actually needed.

2. It is very evident that the enemy was well aware of the importance of electrical generating plants in the prosecution of the war by the Allies and the thoroughness of the destruction is mute evidence of this understanding on the part of the enemy and the thoroughness of his efforts to thus handicap us. Attached hereto are some photographs taken on a recent inspection trip showing the extent of the work involved.

3. Plans are under way at the present time for the rehabilitation of highly essential industries so as to relieve the ship tonnage for purely military purposes. However, that ship tonnage cannot be saved unless something is done to immediately bring relief in the electrical field because of the fact that the rehabilitation of these industrial plants depends entirely upon the availability of electricity.

4. In Southern Italy serious damage was done to many of the important plants but - fortunately for us- one of the principal power stations in South Italy remained undamaged. This fact enabled us to rehabilitate some industries in the South which are now consuming about 80% of the energy and this together with the other military needs, billets etc. means that about 90% of the energy available is being used either directly or indirectly for the war effort.

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5. In Central Italy the situation is entirely different. The position in this area may be appreciated by a study of the following facts.

(a) Estimated requirements for essential industries directly and indirectly required for the war effort during the six months ending 31st March 1945
K W Hours . . . . . .450.0 Million

(b) Estimated generation under present rehabilitation plan K W Hours . . . . . .180.0 "

(c) Estimated Total Generation of 2 x 30,000 KW plants are made available and installed by 30th Sept. 1944 . . . . . .340.0 "

(d) Deficit (a) minus (b) KW Hours . . . . . .270.0 "
Deficit (a) minus (c) KW Hours . . . . . .110.0 "

6. The above allows for such rehabilitation as is possible within the very near future. The position at the present time is actually worse. When it is realized that according to the above presentation 60% of the normally available generation capacity in this general region of Central Italy is destroyed and will not be available to our Armed Forces, it must be very evident that immediate and energetic steps must be taken to bring about relief.

7. This Sub-Commission has recently placed a requisition for small portable electrical units, as follows :

Ten 100 to 200 K.W. sets
Ten 300 to 400 K.W. sets
Five 2000 K.W. Rail or Trailer mounted.

These sets will be used to supply current to isolated highly essential industries or flour mills etc. which must be operated but which are at a standstill because of lack of current. However, it is very evident now that we must have units of a far larger capacity to be connected to the transmission lines which can be rehabilitated in a short time and operated from shore points at the east and west coasts of Italy. For this purpose we request that 2 floating electrical generating stations, each of 30,000 KW capacity be shipped to Italy on a very high military priority, one of these to go to

Declassified E.O. 12356 Section 3.3/NND No. 785019

a point on the east coast of Italy and one to a point on the west coast.

8. While the above sets will only supply 60% of the actual deficiency in this area, they will assure with such other rehabilitation as is possible over here that some of the more important military needs will be met. When it is considered that the industries in this section normally consumed 75% of the electric current produced, it may be seen that only a relatively small percentage of highly essential industrial plants can be rehabilitated to assist in our war effort.

9. It is requested that immediate steps be taken to obtain A.F. H.Q. approval of this request and that Washington be notified by cable to provide this equipment. We deem this of such importance that we are willing if necessary to send an officer to the U.S. to assure that prompt action be taken.

L.A. JENNY,
Lt-Colonel, C.E.
Director.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.489081 HEADQUARTERS VSR/oe
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

ACC/158/PWU 31 Jul 44

Subject: Electricity Situation, Central Italy.
Preliminary Report.
To : V.P. Economic Section.

1. **The electric power systems in Allied occupied Italy have suffered serious war damage, as the result of deliberate action by German demolition parties. Examples are pictured in the attached binder.**

2. **The principal motive for the distruction was probably to make the country less useful to the Allies as a military base, which has been accomplished. Another result will be to hinder Italian manufacturing, and to make the country more dependent on other nations than she otherwise would be. Industries such as the electro metallurgical, electrochemical, transportation, textile and food are cited as example of large electricity consumers.**

3. **Damage to electric power facilities in South Italy was severe, but the largest power development there was unharmed. As the enemy retreated northward however, his deliberate distruction became more methodical and complete. As an example, within the areas Regions IV, V and VIII of the Allied Control Commission, only a small fraction of power facilities so far inspected have been found to be useable.**

Within this area, the situation presently appears as follows :

	Period 1 Sept. 31 Dec. 1944
Estimated electricity requirements for essential users, Kw-hr.	706.000.000
Estimated maximum possible electric generation, Kw-hr.	100.000.000
Deficit Kw.-hr.	606.000.000

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4. The realisation of the electrical output cited above is dependent upon plans now being made which include :

(a) The operation of useable equipment both modern and obsolete.

(b) The repairing of damaged equipment.

(c) The utilisation of good parts of unrepairable equipment.

(d) The transfer of equipment to points of better utilization.

(e) New temporary construction.

5. It will be seen that the electrical position in Central Italy will be very grave even after the utilization of available local equipment. To partially relieve this situation it will be necessary to import mobile plant of large capacity. It is recalled that some months ago, there were built in America, several floating electric generating stations, each of 30.000 Kilowatt capacity, and it is considered highly probable that at least two of these units might be obtained to supply the essential military and some of the civilian requirements of Italy.

RECOMMENDATIONS.

6. In consideration of the foregoing, the following recommendations are made :

(a) That a request be made to the War Department, Washington, that at lenst two floating generating stations, complete with crew and representing a combined capacity of 60.000 Kilowatts, be sent to Italy immediately.

(b) That the request carry the approval of both A.A.I. and A.F.Hq. and that it be personally followed, through to the War Department.

L.A. JENNY
Lt-Colonel, C.E.,
Director.

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30 JUL Recd

Pwac 7301

HEADQUARTERS
AMG FIFTH ARMY
APO 464 U.S.Army

25th July 1944.

205/15.

SUBJECT: Electric Power.

TO : Regional Engineering Officer, Region 8, A.C.C.

---

1. The gasoline motor driven generator for use in electric welding was delivered to the Lardarello plant on the afternoon of the 23rd, without fuel, lubricant or operator. Ing. Masi did not want to start the motor without proper instructions from someone familiar with it's use.

2. This morning a mechanic, with the necessary gasoline and oil to operate the machine, was sent from this headquarters to get them started.

3. Arrangements have been made to have an 8 ton trailer at Castelnuovo on the morning of August 2 to load the transformer and move it to Lardarello.

4. Work on all phases is proceeding as rapidly as possible at the plant. The director advised that it would be possible to get a 12,000 KW generator into service providing they can get a large casting made. He suggested that possibly the foundry at Chiusi or Terni could do the job. The casting is approximately 3.5 meters x 2.5 meters x .30 meters, is part of the turbine shell and bearing. Will you please have a check made to determine if either of the above foundaries can handle the job, and if not, take the matter up further with A.C.C. Plans of the casting are being prepared.

5. Since this plant will start delivering power some time during August, it will be necessary that the power line construction be completed at least to Pianbino and to the Solvay pumps at Q 3320 at the same time. It is understood from your July report that this work is under way but you are requested to follow up on it so there will be no lack of cooperation between the plant and S.E.M.

For the Commanding General:

D.M. GAITHER,
Capt., CAC,
Engineering Division,
A.M.G. Fifth Army.

Copy to:
Power Sub-Commission, A.C.C,
P.C., Grosseto Province.
P.C., Livorno Province.
File 205/9.

/swp

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.478200

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LAJ/ce

ACC/158/PWU.

31 Jul 44.

Subject: Pescara Power Station.

To : V. P. Economic Section.

Reference letter from Acting Chief Commissioner, 24 July 1944.

The situation insofar as the Pescara Plants are concerned is as follows:

1. There are 4 power stations there, not just one as is often assumed.

2. The rehabilitation of these plants, in accordance with the ability to repair them is :

Plant 1, beyond repair - 1 ½ to 2 years
Plant 2, beyond repair - 1 ½ to 2 years
Plant 3, 1 Unit with 1/4 capacity of the whole plant may be rebuilt in 10 to 12 months. This is the plant served by the reservoir where the dam has been damaged. The reconstruction of the dam is a simple problem and can be done in 1/4 of the time to rebuild the plant.
Plant 4, beyond repair - 1 ½ to 2 years.

This has been verified by the Chief Engineer of the Company who was here a few days ago, and by one of our electrical engineers who has just returned from an inspection tour of that general area.

Major Fieldon put a longhand note on a recent letter or a sheet published, saying that this plant could be put in operation in a few months if the dam were rebuilt.

We can not help but feel that there is too much irresponsible talk going on about these matters. We would appreciate it if anyone making such statements be referred to us so that we may be in a position to either give them proper facts; or if they have

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any data we may not have, to make full use of such data.

L.A. JENNY,
Lt-Colonel, C.E.,
Director.

Declassified E.O. 12356 Section 3.3/NND No. 785019

27 JUL R...
OSS 587
R.A.

15

HEADQUARTERS
ALLIED CONTROL COMMISSION
ECONOMIC SECTION
APO 394

GMS/sen

ES/16

27 July 44.

SUBJECT: Pescara Power Station

TO : Public Works and Utilities Sub-Commission

1. Reference attached note, 24 Jul 44 from Acting Chief Commissioner.

2. Please forward, no later than 28 Jul a brief statement of the extent of the damage to the power plant at Pescara. Is it possible to rebuild the dam and replace or repair the machinery within a period of four months and, if so, what materials would be required? Are these materials available locally or would requisition from abroad be necessary?

3. Though it may not be possible for you to make a detailed statement, please ensure that it is complete as possible within the time available.

G. M. SHARP, Lt. Colonel, R.A.
S.O. 1 (C.A.), Economic Section

1 Encl: Ltr SC 587 dtd 24 Jul 44.

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Declassified E.O. 12356 Section 3.3/NND No. 785019

ALLIED CONTROL COMMISSION
INTER OFFICE MEMO

From: Acting Chief Commissioner

SUBJECT: Power Generating Machinery at Pescara

FILE No. 24 JUL 1944

TO: Col. W. O'Dwyer, Vice President, Economic Section, Hq ACC

24 July 1944

Confirming what I had to say this morning at our VP meeting, I have been informed, but can not evaluate reliability, that enough of the power generating machinery at Pescara is serviceable or could be repaired so that if the dam itself were repaired within a period say four months, there could be a substantial increase in the power available to the Italian grid.

Will you ask the Public Utilities Sub-Commission to advise as to whether something can be done along this line.

EMERY W. STONE
Captain, USNR
Acting Chief Commissioner

Declassified E.O. 12356 Section 3.3/NND No. 785019

Signal Corps
Msg. Ctr.
Number

ALLIED CONTROL COMMISSION

OFFICIAL BUSINESS

Reference No.
Filing Time

For use by Adj Msg. Ctr.

OUTGOING MESSAGE

Office of origin: Public Works Water Supply Section — Section - Directorate - Sub-comm. etc.
Date: July 29 1620

Classification: Restricted — Restricted - Confidential - Secret
Telephone No. 614

Precedence: Routine — Deferred - Routine - Priority - Operational Priority - Urgent
Originating Officer: STONE

To: CO 41st Service Group for LEE. — Addressee

Ref your cable N 96/29 Pd To CO 41st Service Group for LEE from Hd ACC Public Works and Utilities Sub Commission signed STONE Pd Major Bell this Hd is following this work and will contact you, Pd Copper Pd

Distribution:

Content and classification authenticated by

Declassified E.O. 12356 Section 3.3/NND No. 785019

LROF V LXCZ-A NR1 ROUTINE
T

29 JUL Recd
158 CCS.

1577
3629 1V

FROM COMMANDINGOFFICER, 41ST SERVICE GROUP 281642B
TO PUBLIC WORKS AND UTILITIES SUB COMMISION
(FOR LT. COL. LAPPER) ACC MO ROME
GR--BT

P. W & U

TOP HALF CASING FOR TURBINE LARDERELLO URGENTLY
REQUIRED PD CAN TURNI OR CHUISI FOUNDRY MANUFACTURE CASTING
~~ATTACHED~~ APPROXIMATELY ONE TWO FEET BY FOUR ~~FEET~~ FEET BY THREE FEET PD
DRAWING BEING PREPARED PD WHITE REPLY SIGNED LEE
BT 281645B
GN AR AR
RD NR 1 2255 JWR BR

HEADQUARTERS
29 JUL 1944
A. C. C.

ACTION

Acc Dist
Action: P.W.+U. 121
INFO: A/CC
Pers Sec
File 10 121
Flora 29 120

Declassified E.O. 12356 Section 3.3/NND No. 785019

WII/gf

Tel: 48903

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

29 July 1944

ACC/158/PWU

SUBJECT: Electric Power.
TO : Regional Engineer, Region VIII

1. We have received a copy of a letter ref. R4/Eng/700 dated 27 July 1944 which the Regional Engineer Region IV has addressed to you in connection with the disconnection of electricity supplies to the Viterbo communes.

2. While this inter-regional assistance is all to the good, we are anxious to be kept informed of any arrangements which may affect the general electrical situation and as it is not quite clear to us what has taken place in the disconnection referred to in Col. Edwards' letter it is desired that you send full particulars as to what has taken place in this particular case.

W. M. LAPPIN,
Lt. Colonel
Chief, Util. & Admin Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel: 107051

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

AWC/051/PWU

RAB/ecb

26 Jul 44

Subject: Reconstruction of Large Power Installations.

To : Regional Engineer, Region IV,
Regional Engineer, Region VIII.

1. The importance of some of the larger generating stations to all of Italy is such that they are not confined to any one region. In view of this, technical guidance for the restoration of the following installations will be directed from this Headquarters:

a. The Società Larderello steam plants as follows:
(i) 60,000 KVA station at Castel Nuovo.
(ii) 105,000 KVA station at Larderello.

b. The Terni Company's hydro plants as follows:
(i) Centrale Cervara, 13,500 H.P.
(ii) Centrale Galleto, 200,000 H.P.
(iii) Centrale Velino and Pennarossa, 64,000 H.P.
(iv) Centrale Narnore, 35,000 H.P.
(v) Centrale di Collestalte, 10,000 H.P.

c. The steel works at Terni will also be directed from this office only to the extent that part of their facilities are needed for the restoration of the above.

2. Major Robert A. Bell, Engineer of this office, will be the representative, dividing his time between the Larderello and Terni installations. It will greatly assist therefore if your Regional Electrical Officer can keep Major Bell informed (through this office) of any information which may come to hand relating their plants. Major Bell will likewise keep you informed of the progress of restoration work on the above plants.

R.B. [illegible],
Lieut-Colonel,
Chief, Util. & Adm. Div.

Copy to file 1.8.

Declassified E.O. 12356 Section 3.3/NND No. 785019

VSL/gf

Tel: 42906

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

28 July 1944.

ACC/158/PWU

SUBJECT: Repairs to Electrical Plants.
TO : Regional Engineer - Rome Region.

1. Attached is a letter received from Societa Romana di Elettricita, Rome, requesting supply of materials for repairs to electric station and substation buildings.

2. As material supply is a Regional matter, this is passed to you for attention.

3. We are considering all matters in connection with electricity supply as most urgent and if there is any assistance which you require, please let us know.

W. M. LAPPER,
Lieut-Colonel,
Chief, Util. & Admin.Div.

Declassified E.O. 12356 Section 3.3/NND No. 785019

Tel.478200

HEADQUARTERS
ALLIED CONTROL COMMISSION
Public Works and Utilities Sub-Commission
APO 394

LWI/ce

ACC/158/PWU.

27 Jul 44

Subject: Electric Service Ministero Giustizia.

To : Ministry Public Works Italian Govt.
attention Comm. GRECO.

1. Attached letter 24 July 44 from The Ministry di Grazia e Giustizia for your disposition.

W.M. LAPPER,
Lieut-Colonel,
Chief, Utilities & Adm. Div.

1 enclosure

Declassified E.O. 12356 Section 3.3/NND No. 785019

Copia

Ministero di Grazia e Giustizia
Il Segretario Particolare
di S. il Ministro

Roma, 24 luglio 1944

APPUNTO PER IL SIGNOR COLONNELLO HANNAFORD

Per la luce a casa di S.E. il Ministro TUPINI, in Via S.Nicola Cesarini,3 bisognerebbe interessare la Società Romana di Elettricità in Via Poli.

Per la luce del Ministero, occorrerebbe rivolgersi all'Azienda Elettrica del Governatorato in Via Milano.

Distinti ossequi.

(firmato:) Lamacchia

Declassified E.O. 12356 Section 3.3/NND No. 785019

by

17 July

To: DGMRS

Elect Plant for drawoff.

of Portuni Marches

25 July 159

JEB/gb

HEADQUARTERS REGION IV
Allied Control Commission
APO 394

5 July 1944

051/Rep

TO : Headquarter Allied Control Commission
P.W. & U.S.C.
Attn. Lt.Col.Lapper

SUBJECT: Conversion of mill motors.

FILE N°: R4/ENG/11(P)

During inspection of the TERNI works at Terni on 2 July, it was reported to Lt.Col.J.E.Breth Eng.Div., Region IV, ACC, that the Terni engineers have under advisement the proposition of utilizing one of the main plate mill driving motors as a generator to develop some 3000 KVA of electric power.

Before anything is done however, the "TERNI"people would like to have a decision as to whether the plate mills will be used. If not, than the proposition could be developed to use one of the driving motors as an alternating current generator.

The mill drives are of the "Ilgner" system and several different combinations are possible but necessitate preliminary tests to determine which scheme is feasible. These tests would require using some considerable amount of power from the Valdarno generating station at Nero Montero.

It is requested that a command decision be requested as to whether the plate mills will be utilized and then if they are not desired, it is requested that the necessary approval and support be given to the "TERNI"firm to proceed with necessary tests and conversions to use the main mill motor as an alternating current generator.

It is believed that Col.Growdon of the Central Electrical Board has discussed this matter with the company engineers at Terni.

Colonel,
Regional Engineer

Declassified E.O. 12356 Section 3.3/NND No. 785019

TO : Headquarter Allied Control Commission
P.W. & U.S.C.
Attn. Lt.Col.Lapper

SUBJECT: Conversion of mill motors.

FILE N°: R4/ENG/11(P)

During inspection of the TERNI works at Terni on 2 July, it was reported to Lt.Col.J.E.Breth Eng.Div., Region IV, ACC, that the Terni engineers have under advisement the proposition of utilizing one of the main plate mill driving motors as a generator to develop some 3000 KVA of electric power.

Before anything is done however, the "TERNI"people would like to have a decision as to whether the plate mills will be used. If not, than the proposition could be developed to use one of the driving motors as an alternating current generator.

The mill drives are of the "Ilgner" system and several different combinations are possible but necessitate preliminary tests to determine which scheme is feasible. These tests would require using some considerable amount of power from the Valdarno generating station at Nero Montero.

It is requested that a command decision be requested as to whether the plate mills will be utilized and then if they are not desired, it is requested that the necessary approval and support be given to the "TERNI"firm to proceed with necessary tests and conversions to use the main mill motor as an alternating current generator.

It is believed that Col.Growdon of the Central Electrical Board has discussed this matter with the company engineers at Terni.

Colonel,
Regional Engineer

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J.Ella

HEADQUARTERS REGION IV
Allied Control Commission
APO 394

5 July 1944

TO : HQ ACC, Public Works and Utilities Sub-Commission
(Attention Lt;Col. Lapper)

SUBJECT: Report

FILE Nº: R4/ENG/90

1. A general inspection of the works of the "TERNI" group at Terni and vicinity was made by Lt.Col.J.E. Breth, Engineering Division, Region IV, on 1st and 2nd July. This inspection was made in company with the "TERNI" engineer in charge of the various activities and included the steel works, and the accessible power plants.

2. Steel Works

None of the steel works are operating, due mostly to lack of power and raw materials. In the steel works at Terni, there is in operation a small alternator of some 550 KW. At the moment this set is serving the town district of Terni and various military installations there with the bulk of its power (350 KW), leaving about 200 KW available for light repair work in the steel plant. This set was used for reserve only and is old and rather unreliable. To reach any effective state of operation the steel works would require initially some 1500 KW of electric power from other sources. Also at this time and to continue probably for two or three weeks, workers of the plant have been forbidden entry to the steel works by the Officer Commanding, 86 Area, which now operates a supply installation inside the factory area. All work in the Terni steel works is now at a stand-still on this account. A separate report is being submitted requesting that this situation be improved if possible.

3. Available working capacities, in terms of percentage of the capacities as of the date the Enemy troops left the area, and which are estimated to be restorable to working order in a reasonable time, are listed below:

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I STEEL PRODUCTION
a. Electric steel-none.
b. Open hearth steel - 65%

II ROLLING MILLS
a. Large and medium thickness plates - 90%
(see note 1 below)
b. Section rolling - 65%
c. Thin plates and tin plates - 80%

III FORGING
a. Large - 70%
b. Medium and small - 75%

IV DROP FORGING - none

V STEEL TIRE PRODUCTION - none

VI HEAT TREATING - 35%

VII STEEL CASTING - 60%

VIII IRON CASTING - none
(This may be rehabilitated to 20% of capacity in some 30 days)

IX Mechanical Repairs - 30%

X REFRACTORY PRODUCTION - 50%

XI STEEL FABRICATION - 50%

4. These above percentages concern the facilities only as there is on hand only a very limited amount of necessary raw materials. If manufacturing is to be done, it will be necessary to supply the plant with certain raw materials, formerly obtained from outside sources. It is belived that initially this plant will be of more use as a heavy repair works and will be almost indispensable in the program of rehabilitation of power plants.

(Note 1). The "TERNI" engineers have in mind the utilisation of the plate mill driving motors and auxiliaries as an emergency generator scheme which may provide some 3000 KW of electric power. However, nothing will be done on this scheme until a decision is given as to whether it is desirable to reduce the plate mill production capacity to either 50% or 0% of former capacity. The amount reduced will depend on the feasibility of what motors are used as there are several combinations possible.

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Summary.

The utilization of the "TERNI" group plants depends on several factors: first, the access of workers to the plant now occupied by the supply installation of 86 Area; second, the initial supply of electric power from outside sources; third, supply of raw materials; fourth, decision as to what, if any of the works will be utilized - including the priority of such use.

Electrical Power Generating Stations.

Heavy damage caused by enemy demolitions has been sustained by all of the "TERNI" group power stations in the Nera-Velino basin.

The following stations have been destroyed beyond hope of repair in any reasonable time:

MARMORE -	installed capacity	20000 KVA
COLLESTATE -	" "	10000 "
CENTURINI-CAMPOFREGOSO-	" "	8000 "
COTILIA -	installed capacity	60000 "
		98,000

In the Cervara station which had five groups of 2000 KVA each and two groups of 1000 KVA each, it is estimated one 2000 KVA group may be put in operation in 30 to 45 days, a second 2000 KVA group in another 30 days and the other three 2000 KVA groups in the next two or three months.

2000
2000
2000
6,000

In the Galleto station which has been badly damaged, it may be possible to have one 43000 KVA group in operation in about six months.

Plants of the Vomano development which lies between Rieti and the Adriatic are under construction and works are apparently not damaged but it is estimated it will require at least a year to have any of these in operation. Neither the machinery or the hydraulic works are in state which will permit production before that time.

Hydraulic works of all plants have not been damaged seriously - only the machinery has been destroyed.

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One large factor in the program of rehabilitation of the plants in the Nera-Velino basin and for the construction of the new plants in the Vomano development, is the steel works at Terni. Initially these works will require power from outside in order to function as a heavy repair center and it is believed that an early decision should be reached relative to putting these works into operation.

Colonel,
Regional Engineer

7 Inclosures
Incl 1 - Electrical
2 - Production
3 - Electro-Chem., N.M.
4 - " " , P.
5 - Mines
6 - Cement
7 - Steel

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