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CENTRAL
DEC. 1943

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CENTRAL ELECTRICITY BOARD
DEC. 1943 - FEB. 1944

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D R A F T

9 January 1944.

Allied Force Local Resources (Italian) BoardElectric Power CommitteeExecutive and Technical Sub-Committee

1. The first meeting of the Executive and Technical Subcommittee was held in Room 40, Provincia Building at 1000 hours, 9 January 1944.
Present:

Colonel J.P. Crowdon, AGC/AM, Chairman
 Lt Colonel W.A.R. Smith, representing AFCHQ Adv. Adm. Echelon.
 Lt Colonel A.H. Glendinning, representing AFCHQ Adv. Adm. Ech.
 Commander L.E. Hoggan representing R.N.
 Lt Colonel G Cooley, representing C.E., P.B.S.

2. The chairman outlined the functions of the committee as follows:

a. To allocate electric power and energy to areas in Southern Italy. Allocation of electric power and energy within area will be the responsibility of the Area Commander. All contacts with SMI on this subject to be made through Colonel Crowdon.

b. To control generation, transmission and major substation operation and rehabilitation.

3. The subcommittee agreed to prepare a directive on allocation of electric power and energy for issue by AFHQ. The allocation quantities will follow after study to determine appropriate distribution. Lt Colonel Smith to prepare the directive.

4. A discussion of power supply to ROME over FRATTAMAGGIORE - MINTURNO (East Coast) route indicated that 5,000 Kw could be transmitted to ROME without condensers and that with condensers more power could be transmitted. (The "Liri" line is 50 sq mm copper. The copper since from Liri or Minturno is not known. The total distance is 120 miles approximately. Assuming 50 sq mm copper 5,000 Kw can be transmitted at 60 kv under following conditions:

Pf	% drop	% loss
.85	15	11
.90	13.5	10
.95	12	9
1.00	9.5	8

The charging Kva is approximately 2,100 Kva which will tend to give a reasonably high power factor.

5. A discussion of essential power requirements for...

Italy. Allocation of electric power and energy within the will be the responsibility of the Area Commander. All contacts with SNE on this subject to be made through Colonel Grawdon.

b. To control generation, transmission and major substation operation and rehabilitation.

3. The subcommittee agreed to prepare a directive on allocation of electric power and energy for issue by AFHQ. The allocation quantities will follow after study to determine appropriate distribution. Lt Colonel Smith to prepare the directive.

4. A discussion of power supply to ROME over FRATTAGGIORE - MINTURNO (West Coast) route indicated that 5,000 Kw could be transmitted to ROME without condensers and that with condensers more power could be transmitted. (The "Liri" line is 50 sq m copper. The copper size from Liri or Minturno is not known. The total distance is 120 miles approximately. Assuming 50 sq m copper 5,000 Kw can be transmitted at 60 Kv under following conditions:

Pf	% drop	% loss
.85	15	11
.90	13.5	10
.95	12	9
1.00	9.5	8

The charging Kw is approximately 2,100 Kva which will tend to give a reasonably high power factor.

5. A discussion of essential power requirements for important locations north of NAPLES in order to determine generating equipment requirements resulted in the appointment of Commander Hoggan to investigate and report estimated requirements to the Subcommittee for approval and transmittal to the Main Committee.

6. The Subcommittee agreed that a study of the transportation and other requirements of SNE should be made in order to determine facilities required to make maximum use of the civilian (SNE) organization.

7. The subcommittee agreed to consider measures to effect better coordination between SNE and EAV. It was agreed that this could probably be made most effective by some arrangement where SNE could control EAV.

8. The meeting adjourned at 1200 hours.

-2-

Base Section. (e) 7 November further transmission line repairs added 1,000 KW. Work done by power company employees under direction Peninsular Base Section. (f) 17 November repair of 150 KV transmission line from large undamaged hydro - electric plant in southern Italy added 15,000 KW. Work done by power company under direction Peninsular Base Section. (g) 3 January repair of 1 unit in hydro-electric plant to north and transmission line to Naples added 5,000 KW. Work done by power company and U.S. Engineer troops. (h) 20 January repair of 2nd transmission from south made total 30,000 KW available which is about 40% of normal supply.

New Subject: Answering specific question. 1st, Portable diesel electric sets totalling about 3,000 KW would have been most useful if available immediately upon occupation of Naples. 2nd, Combat operations were not impeded by lack of power equipment, but Military effort as a whole would have been helped had generating sets totalling 3,000 KW been immediately available. 3rd, Civilians suffered hardships due to lack of power for hospitals, bakeries, flour Mills and similar installations which would have been alleviated had portable equipment described above been immediately available. 4th, U.S. Engineers of Peninsular Base Section planned and coordinated power rehabilitation program, performed a limited amount of the work and furnished transportation for labor and materials as required. Most of work done by power company employees. 5th Italian Engineers and other employees of power company have cooperated to the fullest extent but require Army direction and help.

(COPY)

TO : - SECRETARY TO ALLIED FORCE LOCAL
RESOURCES (ITALIAN) BOARD
MILITARY POWER COMMITTEE.

A.F.H.Q., ADV. ADM. BRANCH
LOCAL RESOURCES SECTION
C.M.F.

From : - SUPERINTENDENT'S ELECTRICAL ENGINEER ROYAL NAVY

Date : - 8th January 1944

Subject : NAPLES GENERATING STATIONS
FUEL REQUIREMENTS

In accordance with the instructions of the Committee, investigation has been made of the position as regards provision of fuel to the Naples Generating Stations, if operated for the purposes of supplying ROBE.

Probable consumptions of Diesel fuel oil and Boiler furnace oil respectively have been estimated on the basis of 65% daily load factor, as it is considered unlikely that this figure will be exceeded in actual practice and, probably, will not be attained.

Line losses have been assumed at an arbitrary figure of 10%. Fuel consumptions, allowing for existing relatively unfavourable conditions of operation, (for example, complete combustion control equipment is not available at CAPUANO, and fuel of the specified density is not obtainable for VOLTURNO), have been assumed as follows :-

VOLTURNO - 375 g/kwh (based on experience already gained)
CAPUANO - 650 g/kwh

On the above basis, the probable consumptions for three different methods of operating the two plants have been calculated as below :

WEEKLY CONSUMPTIONS	
Method of Operation	Diesel Oil Boiler Furnace (Metric tons) Oil (Metric tons)
(1) VOLTURNO plant supplying Rome load and line losses (5.5 MW)	225
CAPUANO Synchronous condensers operating in parallel	-
(2) CAPUANO Supplying Rome load (5.5 MW) and line losses, also the reactive load.	390
CAPUANO operating as in (2) above, but supplying also 6,000 kW to Naples area.	815 (Total 11.5 MW)

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Line losses have been assumed at an arbitrary figure of 10%. Fuel consumptions, allowing for existing relatively unfavourable conditions of operation, (for example, complete combustion control equipment is not available at CAFUNO, and fuel of the specified density is not obtainable for VOLTURNO), have been assumed as follows :-

VOLTURNO - 375 g/kwh (based on experience already gained)
CAFUNO - 650 g/kwh

On the above basis, the probable consumptions for three different methods of operating the two plants have been calculated as below :

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CAFUNO operating as in (2) above, but supplying also 6,000 kw to Naples area.	-	815	
	(Total 11.5 MW)		

The Admiralty Fuelling Officer has examined the above figures, and has confirmed that bias have already been placed for Generating Station fuel, in quantities exceeding the present rough estimates.

He has further confirmed that the quantities are not ²¹³ by comparison with the total commitments of the Port fuel handling facilities, and that the latter will not be seriously affected by incidence of the Generating Station demand when this materialises.

Signed C.B. Hogan

Electrical Commander R.M.,
Superintending Electrical Engineer.

(COPY)

MEETING ON 12 JANUARY 1944.

PRESENT : Cmdr. Hoggan.
 Lt Col Conley.
 Lt Col Smith.
 Major Harris.

1. After the capture of ROMA there will be a lapse of at least one month before outside power can be laid on from NAPLES Area.
2. The power available even then will NOT exceed 5000 - 6000 KW.
3. The ROMA demand after one month of occupation will rise from 5,000 to 15,000 KW for essential military purposes, military interest in civilian concerns and essential civilian requirements. This cannot be met by power supplied from Southern Italy and at least 10,000 KW, rising to 15,000 will be urgently required in addition to the 5,000 KW from the grid.

4. Ports and Towns further North will have no local or grid power supply whatever for at least three months after the fall of ROMA. The only possible source is therefore by small generating sets and by floating power units supplied from military sources which can be connected to the grid network.

In initial stages at Ports and small Towns the purely military demands can be met by Generating Sets which have been allowed for in both U.S. and British demands.

It is considered that the normal maximum demand in any given area is 50% essential to the economic life of the country. Larger power units, therefore, will be required at the Ports and at the principal towns inland, to meet semi-military and essential civilian requirements.

These power units supplied from military sources will not become entirely static. The large units and the floating power units will replace and release the generating sets initially installed, so that they can be moved nearer the scene of operations. Similarly, as and when civilian generating plant can be rehabilitated, these larger plants can be moved forward to fresh areas as the fighting progresses.

ASSUMPTIONS :

- (1) It is assumed that North of the present fighting line 100% demolitions will have been carried out by the enemy on all generating plant, leaving no possibility of re-use for at least three months.

(41) Transmission lines are assumed to have been 50% demolished.

5,000 to 15,000 KW for essential military purposes, military interest in civilian concerns and essential civilian requirements. This cannot be met by power supplied from Southern Italy and at least 10,000 KW, rising to 15,000 will be urgently required in addition to the 5,000 KW from the grid.

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Ports and Towns further North will have no local or grid power supply whatever for at least three months after the fall of Rome. The only possible source is therefore by small generating sets and by floating power units supplied from military sources which can be connected to the grid network.

In initial stages at Ports and small Towns the purely military demands can be met by generating sets which have been allowed for in both U.S. and British demands.

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ASSUMPTIONS :

(i) It is assumed that North of the present fighting line 100% demolitions will have been carried out by the enemy on all generating plant, leaving no possibility of re-use for at least three months.

(ii) Transmission lines are assumed to have been 50% demolished.

(iii) Other assumptions and estimates are based on ²¹²experience elsewhere, particularly in MAPUS and Southern Italy. In respect of power demands the relevant facts are given in the attached draft.

Memorandum for Col. Crowdon

In the annex we give data about:

(1) Areas presently energized totally or partly -

Transmission system in Apulia, Lucania and Calabria districts has been only slightly damaged. Only the 60 KV substation of Reggio has not been supplied on account of faults on the State Railway lines Feroleto-Reggio. But now S.R. are on the point of operating once more their lines and Calabria Co. will put in service also the Reggio Sub. Distribution systems of these 3 SME subsidiaries Co. have been damaged badly only in some places (Reggio-Foggia-Cosenza). There are also, specially in Calabria, some small Co. not interconnected with SME system. For what we know their nets have not been badly damaged.

Transmission system of Campania district has been badly damaged. The Campania Co. was supplied by SME in 9 points (Tuscano-Calore-Benevento-Campobasso-Latese-S.Maria-Prattagnone-Torre Annunziata-Formia). Presently Campania Co. is fed only in 3 points (Tuscano-S.Maria-Pondigliano). Distribution system of Campania has been badly damaged in many points. On account of what above said the Campania district has many areas not supplied or supplied very scarcely.

Napoli (Distribution + Volturro) was supplied in 5 points (Capuano-Poggio-Arenella-Agnano-Volturro). Presently is supplied in 3 points (Poggio-Arenella-Agnano I) by transmission lines and in 1 point (Volturro) by Diesel Generators. Distribution system of Naples has been badly damaged specially in some points. There are still now some areas not yet supplied.

(2) Present demand in KW and kWh

Data have been prepared on demands of the last week.

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(2) Present demand in KW and kWh

Data have been prepared on demands of the last week.

(3) Future demands in KW and kWh

Demands of future months will greatly exceed the possibilities of output from plants. Data of the annex have been prepared on the base of the present possibilities of output from plants and substations and of known new requirements for necessities supplies. The above data will be evidently subject to change as new sources of energy will be available and, on the other side, as other substations will be repaired and new requirements presented.

Contd. /Sheet 2.....

- 2 -

We shall also point out that demands in kWh are referred to winter months, in order to estimate the yearly demand will be used a coefficient of about 11.25 .

Naples, the 20th January 1944.

(COPY)

SUBJECT:- Electricity SupplyAFHQ ADV ADM ECHelon
C M FTo :- Allied Control Commission.
No 2 District.
No 3 District.
CG Peninsular Base Section

59/8/02

21 Feb 44

1. The ACME Central Electrical Board was set up in this HQ Administrative Instruction No 27 dated 6 Feb 44, and it has now been agreed that it is desirable to restrict the number of people and organizations having direct dealings with the Societa Meridionale di Electricita.

2. In future therefore, direct contact with SME will only be made with the prior approval of the board, except in those cases covered by para 6(b) of Adm Inst. No 27.

3. In these cases, an officer will be appointed to deal directly with the SME, wherever such direct contact is necessary.

(sgd) W.H. RITCHIE, Brig.

for/ Major-General,
Deputy Chief Administrative Officer.Copy to:- G-4
ACME CEB
DDM

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AMHQ Adv Adm Echelon
C. M. F.

19/2

8 Feb 44

A.F.H.Q. Adv Adm Echelon

Adm. Instruction No 27

A.C.M.F. CENTRAL ELECTRICAL BOARD.

1. A Board to be known as the A.C.M.F. Central Electrical Board will be established forthwith, to co-ordinate the work of civil and military agencies in the rehabilitation of the electrical power system in all territories which are or will be controlled by HQ ACME.
2. The constitution of the Board shall be as follows :-

Chairman :	Chief Engineer, A.C.M.F.
Vice Chairman :	Colonel James P. Crowdon, A.U.S.
Members :	Representative of C.G., P.B.S.
	" " D.D.W., A.C.M.F.
	" " Chief Commissioner, Allied Control Commission.

The names of the representatives mentioned above, together with the name of one alternate in each case, will be forwarded to this HQ.

3. The Vice Chairman shall be the Chief Executive of the Board. He will be responsible for ensuring that action is taken in accordance with the decision of the Board. All documents issued by the Board, including notices of meetings, will be signed by him.
4. A Secretariat of two officers (one British, one U.S.) and necessary clerical staff will be provided to transact the business of the Board and to carry out detailed planning on its instructions; an additional officer will be appointed to act as Personal Assistant to the Vice Chairman.
5. The Board is empowered to co-opt or to request the attendance of such other technical representatives as they may require from time to time.

2. The constitution of the Board shall be as follows :-

Chairman : Chief Engineer, A.C.M.F.
 Vice Chairman : Colonel James P. Crowdon, A.U.S.
 Members : Representative of C.G., P.R.S.
 " " D.D.W., A.C.M.F.
 " " Chief Commissioner,
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5. The Board is empowered to co-opt or to request the attendance of such other technical representatives as they may consider necessary from time to time.

6. The functions of the Board shall be as follows :-
- (a) To establish plans for the repair of the electric power system in the territory occupied or which may be occupied by A.C.M.F., with a view to meeting essential military and civil needs as effectively and expeditiously as possible.
 - (b) To allot the work to be done as between the military and civil engineer agencies.
 - (c) To allocate resources of material and equipment available in the country for the repair and operation of the electrical system.

Cont/...Sheet 2...

Sheet 2

- (d) To advise the military and civil supply services as to the stores and equipment which will be required and which cannot be obtained from local civil resources.
- (e) To exercise general control over the operation of the power system and to ensure that essential military and civil needs are met with the maximum of economy.
- (f) To keep the Electric Power Committee of the Local Resources (Italian) Board informed as to the quantity of electricity available for distribution.
7. The Board will submit their recommendations on matters of policy to the C.A.O., A.C.M.F., and will receive from that officer directions based upon its recommendations. These directions will cover, in particular, policy regarding priority work to be carried out. All policy instructions will be issued through normal staff channels, but executive action on matters which are covered by established policy will be taken by the engineer agencies concerned, on the basis of decisions reached at meetings of the Board.
8. Although FIFTH and EIGHTH Armies are not represented on the Board, the Board is responsible for establishing the general plan of rehabilitation of the electric system within Army areas and for ensuring that the work done by the engineers of the Armies conforms to the general plan. To this end, the Board will work in close co-operation with the Chief Engineers of Armies, and will, through their Chairman, request the presence of representatives of Armies at their meetings whenever this may appear advisable.
9. Responsibility for the allocation of electric power to the various consumers remains with the Electric Power Committee of the Local Resources (Italian) Board.

BUE/cmb

(sgd) B. H. ROBERTSON,
Major-General,
Deputy Chief Administrative Officer.

DISTRIBUTION:

FIFTH ARMY (5)
EIGHTH ARMY (5)
A.F.H.Q. (30)
1 District (2)

Flag Officer, TARANTO
Flag Officer, Western ITALY
C.E., A.C.M.F.

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(sgd) B. H. ROBERTSON,
Major-General,
Deputy Chief Administrative Officer.

HR/erb

DISTRIBUTION:

FIFTH ARMY (5)
EIGHTH ARMY (5)
A.F.H.Q. (30)
1 District (2)
2 District (15)
3 District (5)
P.B.S. (3)
12 A.F.S.G. (3)
15 A.F.B.G. (3)
Chief Commissioner, A.C.C. (2)

Flag Officer, TARIRO
Flag Officer, Western ITALY
O.E., A.C.M.F.
Col. James P. Groudon,
c/o C.E., A.C.M.F.
D.D.C.A.O., A.F.H.Q., Adv Adm Echelon
D.D.W. " " "
D.D.C.S. " " "
D.D.S.T. " " "
D.D.M.E. " " "
D.C.M.R.S. " " "
A.F..R.S. " " "

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SECRET PRIORITY TELEGRAM

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FBS SIGNAL MESSAGE CENTER

6 FEB 1944

SECRET

PRIORITY

CG FBS PARGO FOR GRADY

NONE

SIGNED CINC

061435A

061932A

48160

PINGS

THIS IS PARAPHRASE OF MS 98923 OF 4 FEBRUARY FROM WRIGHT SIGNED SOMMERVELL. WHAT PLANS HAVE BEEN MADE TO CARE FOR ELECTRIC POWER NEEDS IN ROME. REPLY TO THIS QUESTION AT ONCE, EVEN THOUGH INFORMATION NOW AVAILABLE MAY BE TENTATIVE, INCLUDING PRESENT ESTIMATE OF SITUATION AND SUMMARY OF PROPOSED ACTION. ALSO CABLE EARLIEST FULL INFORMATION CONCERNING EXPERIENCE AND METHODS USED TO RESTORE ELECTRIC POWER SYSTEMS FOR EXAMPLE IN NAPLES AND FOGGIA. SPECIFICALLY: 1. WHAT MATERIAL AND EQUIPMENT WERE LACKING WHICH YOU SHOULD HAVE HAD. 2. WAS MILITARY EFFORT IMPEDED BY LACK OF EQUIPMENT. IF SO WHAT EQUIPMENT. 3. WAS UNDUE HARDSHIP CAUSED TO CIVILIANS BY LACK OF EQUIPMENT WHAT EQUIPMENT. 4. WHAT AID AND EQUIPMENT WAS RECEIVED FROM CORPS OF ENGINEERS. 5. WHAT AID WAS RECEIVED FROM ITALIAN CIVILIAN ENGINEERS. END OF PARAPHRASE. 2 REPLIES REQUIRED. NECESSARY TO EXPEDITE. WE WILL RELAY IMMEDIATELY UPON RECEIPT.

FBS DISTR.

ACTION AMG HQ
INFO ENGR
Q 4
SECY
CG

ACC DISTR

ACTION ECON SEC (3)

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HEADQUARTERS
PENINSULAR BASE SECTION
APO 782

3 February 1944

Subject: ACP Central Electrical Board

To : CG, ACP, APO 777, U. S. Army

1. The draft directive of 2 February 1944 provides for the establishment of an ACP Central Electrical Board in accordance with the requirements laid down in Signal's No. 4632 from AFHQ.

2. Comments on the rehabilitation of the Italian electrical power systems and the supply of power for military and essential civilian requirements under the ACP Central Electrical Board are based on the promise that

a. At least 20% of the normal power supply must be provided in each area under Allied control, and must be made available within three months of Allied occupation.

b. Manufacturing capacity of Britain and the U. S. is fully occupied producing essential war equipment, and electrical equipment shipped to the Italian theater reduces the war equipment available in other theaters.

c. The Italian resources of labor, equipment and supplies, supplemented by the importation of limited amounts of essential supplies, are adequate to meet the requirements in the area south of Florence.

3. The writer visualizes the operation of the plan as follows:

a. The Board will make "perfect" plans for the rehabilitation of the Italian power systems, although this will be difficult due to incomplete and erroneous information for which the Board must rely on other agencies.

b. The Board will allot the various tasks to ACP and military engineering organizations, with a time limit on each operation. These organizations will be responsible for parts of the same project, with the result that a delay in any part will delay the entire project.

1. The draft directive of 2 February 1944 provides for the establishment of an ACMF Central Electrical Board in accordance with the requirements laid down in Signal's No. 4632 from AFM.

2. Comments on the rehabilitation of the Italian electrical power systems and the supply of power for military and essential civilian requirements under the ACMF Central Electrical Board are based on the promise that

a. At least 20% of the normal power supply must be provided in each area under Allied control, and must be made available within three months of Allied occupation.

b. Manufacturing capacity of Britain and the U. S. is fully occupied producing essential war equipment, and electrical equipment shipped to the Italian theater reduces the war equipment available in other theaters.

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3. The writer visualizes the operation of the plan as follows:

a. The Board will make "perfect" plans for the rehabilitation of the Italian power systems, although this will be difficult due to incomplete and erroneous information for which the Board must rely on other agencies.

b. The Board will allot the various tasks to ACU and military engineering organizations, with a time limit on each operation. These organizations will be responsible for parts of the same project, with the result that a delay in any part will delay the entire project.

c. The Board cannot supervise the way in which the various organizations plan and execute their work; it can only protest after delays have occurred. Such a project will be totally ineffective in getting the project completed on time.

4. The writer believes the operation of the plan set forth in the draft directive will produce the following results:

a. Limited use of Italian equipment and labor.

b. An unnecessarily large use of Allied troops **205**
c. Large orders for power generating equipment to be imported from Britain or the United States.

d. Power supply to area to be occupied by Allied forces will be deficient in quantity and delivered too late to meet military and essential civilian requirements.

(sgd) JAMES P. GRONDON
Colonel, CE

(COPY)

CIPHER MESSAGE IN

TO:- FLAIBO PERSONAL FOR GENERAL ROBERTSON

FROM:- FREEDOM CITE FICAO SIGNED FICIC

44768

29

Regret unable to accept your Directive as worded. Ref L111/DCAO 22 Jan 44 addressed Chief Engineer AFHQ. Full discussions have taken place here with result shown below. This signal authorises you to set up an organisation to co-ordinate policies and executive action to implement them for the rehabilitation of the electrical power system in the territories - to come under command of HQ ACME. This body shall be called the ACME Central Electrical Board. The Chairman shall be appointed by the C in C ACME and also an executive Vice-Chairman to relieve Chairman of all decisions other than those on highest level. Channel for reports of board for policy matters will be to D/CAO or comparable appointment on organisation. Complete HQ ACME. There shall be represented on the board the ACC and the military engineering agencies having decided the policies to be pursued the Board will allot the engineering agency as decided by the Board. Under the constitution of the Board, the several agencies are represented on it thus ensuring that the board decisions are in line with means to execute them. It will then be for the agencies to proceed with the work allotted to them. Electricity produced in pursuit of the policies established by this Board will be allotted by the Sub-Committee of the Local Resources Board (ITALY). You may proceed immediately to get this body to work and submit a draft directive on the above lines for publication by this H.Q. Considered here that the draft must come from you in order that details may not go astray.

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(COPY)

SUBJECT:- Electric Power Directorate

Headquarters
A.C.M.F.

59/83

Chief Engineer

28 Jan 44

I have reviewed the proposals put forward by Colonel Growdon regarding his staff and left with me by you.

I am rather alarmed by the size of staff contemplated and should be glad if you would talk the matter over with Colonel Growdon further. Naturally, I want to see Colonel Growdon fixed up with adequate staff to do his job. At the same time, it will only delay matters if we put forward proposals which are not approved because of the number of officers involved or of their ranks.

Having in mind the responsibilities of this new Directorate relative to those of our other Directors, I think that we should be content to start on the level of full Colonel as Director and adjust other ranks accordingly.

It is difficult for me to criticise the proposals in detail, but I should like you to study them with Colonel Growdon carefully, particularly in order to ensure that there is no overlapping between the proposed organisation and the work done by existing branches. I have in mind particularly the questions of stores and labour. While appreciating that Colonel Growdon will require a small staff to act as his means of contact with the Services responsible for the supply of stores and labour. I do not think that it should be necessary for him to set up any form of duplication of those Services.

I am sure that you and Colonel Growdon will understand that this new organisation, involving, as it must, the absorption of a considerable number of highly technical personnel will be scrutinised very carefully by higher authority, and we must, therefore, be quite sure of our ground before we put it forward. Later on, as the Service expands and our advance progresses, bringing wider areas under our control, it may well be that an augmentation of our original ideas will prove to be justified.

BHE/cnb.

(Sgd) B.H. ROBERTSON

Major-General,
Deputy Chief Administrative Officer.

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(COPY)

Annexure to HQ 2 District 154, dated 22 Jan 44.

Proposals for reducing the Electric Power Consumption in S.E. Italy for the purpose of providing the necessary Power Supply to operate the Foggia - Naples Railway

1. At the meeting of the Electric Power Committee of the Allied Force Local Resources (Italian) Board at NAPLES on Jan 5th a demand was presented from the Director General of Military Railways for the supply of 6,000 kw of electric power at FOGGIA to the railway system, for operating the FOGGIA - BENEVENTO - NAPLES line electrically.

The service is to commence on Feb 10th and the schedule has been arranged to keep the maximum demand down to the above figure of 6,000 kw.

This demand is required to have the highest priority.

2. In order to make this amount of power available at FOGGIA, it is necessary to curtail the consumption of Eastern Italy as a whole by at least the same amount, since the maximum demand is already up to, and at times over, the highest figure which the transmission lines from the Sila Power Stations in CALABRIA will carry with efficiency.

3. This group of hydro-electric power stations is practically the whole source of supply at present for Eastern Italy; the territory concerned being all that served the Società Generale Pugliese di Eletticità, which now also feeds power to the East Coast Region to the north, formerly served by the UNES Company from PESCARA.

4. There are several small stand-by thermal generating plants in the area which might be brought into service, and we will endeavour to arrange a supply of fuel to such as can be efficiently and usefully employed; but it is considered that they had better be treated as a reserve in hand, and that the immediate requirements should be met by reducing the existing consumption, which is on a liberal scale and tending to increase.

5. The attached chart shows approximately an average daily load curve for the total consumption of the S G P E system taken in mid December, and analysed into four categories -

- (i) Lighting, including some small domestic appliances
- (ii) Domestic Appliances, Cooking and Heating; and similar apparatus in Hotels, Restaurants, Public Buildings etc.
- (iii) Medium and small power users; chiefly small industries.
- (iv) Large industries.

The amount of power exported to UNES is also shown, and this will

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The amount of power exported to UNES is also shown, and this will include some of the first three categories.

6. Of these components, the last two, category iv large industries, and the power exported to UNES, must be considered as ~~practically~~ ^{20%} irreducible.

In fact the demand for large industries is likely to increase as more are started up and expanded for essential war production, under the direction of the Allied Forces.

The reductions necessary will, therefore, have to be effected in the first three.

7. The problem of reduction to meet this present requirement is primarily that of reducing the maximum power load in Kilo Watts, not one of reducing the total energy consumption or meter reading in Kilo-Watt-Hours, through any incidental reduction in the latter will be beneficial also

Sheet 2.

The load curve shows that there are two peaks of maximum load, one broad one of long duration in the morning, falling somewhat in the afternoon. The other is of shorter duration, but reaching a slightly higher maximum, in the early evening.

The actual present consumption is somewhat higher than that shown, and these two peaks are now both well over the 40,000 k.w., which is the maximum permissible for efficient operation of the transmission line from Sila, and at times for short periods approach 45,000 k.w. with consequent low voltage.

The problem is thus that of reducing these two peaks each to a total load of not more than 34,000 k.w.

8. It will be seen that the reduction required is approximately the same in each peak period and amounts to about 7 to 9,000 kilowatts out of a total of 41 to 43,000 kilowatts.

Out of this total some 9 - 10,000 kilowatts belong to the practically irreducible minimum of the larger industries and the power fed to the UMS Company to the North, leaving a margin to work on of about 32,000 kilowatts.

The average proportionate reduction of the loads in this margin is thus about a fourth, but there will inevitably be a number of essential loads which cannot be reduced to this extent, and which cannot be transferred to the more favourable period.

The target reduction must therefore be set at a higher figure to cover these, and that suggested is one third.

9. Owing to the different nature of their principal constituents these two peaks may be considered separately.

The morning one can be seen to be composed principally of Category iii loads, with a proportion of Category ii loads.

The maximum peak can in this case be reduced by two methods each of which can contribute towards the result required :-

(a) by cutting out all redundant and non-essential loads, and by reducing the consumption of the remainder by careful & economical use.

and (b) by transferring selected loads to operate in the valley period of low consumption between 2230 hours and 0600 hours.

The Evening peak consists principally of the Lighting load, with a proportion of Domestic Appliances etc.

In this case the load is not susceptible to transference to a more favourable hour, and all the reduction necessary must be achieved by economy in consumption and the cutting out of all non-essential items.

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The morning one can be seen to be composed principally of Category III loads, with a proportion of Category II loads.

The maximum peak can in this case be reduced by two methods each of which can contribute towards the result required :-

- (a) by cutting out all redundant and non-essential loads, and by reducing the consumption of the remainder by careful & economical use.
- and (b) by transferring selected loads to operate in the valley period of low consumption between 2230 hours and 0600 hours.

The Evening peak consists principally of the lighting load, with a proportion of Domestic Appliances etc.

In this case the load is not susceptible to transference to a more favourable hour, and all the reduction necessary must be achieved by economy in consumption and the cutting out of all non-essential items.

10. Results will have to be achieved quickly, in order to reduce the total consumption to the required figures by Feb. 10th, ready for the operation of the Railway.

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It is therefore considered that simple and urgent methods will have to be employed, and it is suggested that immediate instructions be given to the Italian Government to issue orders that each and every private, public and official consumer, is to reduce his maximum consumption or demand for electricity by one third; under suitably severe penalties, unless exempted by a special permit which must be obtained by application to the authorities.

All consumers should be required to state whether they have any standby power plant, and if so to submit proposals and requirements for bringing it into service to supply all or part of their load, and if possible feed into the general supply network.

Sheet 3.

Such permits must be given strictly and only where it is demonstrated that the reduction cannot be made without prejudicing services really essential to the war effort or to the economic life of the country.

In such cases the applicants may be directed to operate in the night period mentioned above; and other users also must be so directed, sufficient to achieve the necessary total reduction in peak load.

11. In item in the evening peak load which should immediately be cut out completely is all external and street lighting of which a sensible quantity still exists; and which is ineffective and practically useless anyway through heavy shading or blue bulbs.

The Appulian Acqueduct Company has a pumping load totaling some 2,000 kw and we have already requested them to arrange that this shall be taken as far as possible between the hours of 2230 and 0600.

12. Another measure which will help the achievement of these reductions is the increase in price of electric power, and it is suggested that the order should include permission to the S G P E to raise its tariff charges by some 100% or more above the present low figures.

In this connection it is understood that the generating company, the Societa Meridionale di Eletticit , is shortly to raise its charges for electric power supplied to the distributing companies by 82.5%.

13. In an emergency a necessary reduction of total load could be effected by cutting off altogether supplies to one or more feeders serving unimportant areas; but that course is not favoured since it will cut off all types of loads without discrimination and may have a detrimental effect upon the economic life of the community.

Such a course should not be adopted without reference to and approval by this Headquarters.

14. It is essential that all measures adopted shall be universally and equally enforced throughout the area concerned; and it is suggested that the orders should be issued promptly by proclamation, and be prominently and widely posted up in all districts; stating that this reduction is necessary to supply the needs of the army fighting to the north where all power plant has been destroyed by the Germans.

It is also important that adequate machinery should be arranged to carry out these measures and effectively to enforce compliance.

Steps will be taken to ensure all reasonable reductions and economies in the consumption by the Allied Forces, but it must be understood that the large proportion of these are necessarily essential to the war effort and that such reduction, and may inevitably increase.

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Steps will be taken to ensure all reasonable reductions and economies in the consumption by the Allied Forces, but it must be understood that the large proportion of these are necessarily essential loads which will not admit of much reduction, and may inevitably increase.

15. It must be added that a scheme exists to feed electric power to Rome by the East Coast Route via Bari, Foggia and Pescara, and that if and when that is put into operation, further reductions in the existing consumption will have to be made to the extent of some 15 or 20,000 Kilowatts perhaps.

(COPY)
DRAFT

Subject: Electricity Control.

To : Commander No 2 District.
C.G., P. B. 3.

1. The supply of electricity in occupied Italy is limited and strict control is essential in order that its use may be diverted to the war effort and not be wasted. A schedule will be issued shortly showing the limits of supply which will be made available in each area. The maximum or peak demand will be shown as well as the total consumption permissible. It will be necessary to ensure that these figures are not exceeded.

2. The responsibility for control must at the moment rest with the Military Commander in each area (working in conjunction with the local A.M.C./A.C.C. representative).

The connected loads must be limited by restricting the number and size of new connections and by checking existing connections to see that they are not loaded beyond that is strictly necessary. Unnecessary loads will be cut off altogether.

Steps will therefore be taken to ensure that supplies available are allocated to the essential civil and military needs and that a priority list, in which new connections are to be made, is laid down. Further, a priority list of disconnections will be prepared so that low priority consumers may be cut off, should this course become necessary.

5. The Societa Meridionale Electricita controls the electricity supply grid in Southern Italy but the distribution is in the hands of local supply companies. The supply by the S.M.E. to these local companies will be controlled in accordance with orders issued by these

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4. The addressees will make such arrangements as may be necessary to carry out a local system of control and it is suggested that a committee be instituted in each area which would be competent to recommend to the Commander how the restricted supply available to each area might be allotted. At the same time, it is considered essential that one Officer be appointed to deal with the local supply companies in each area and that orders be issued that no person other than he shall have access to the company.

Copy to: 15 Army Gd; A.C.C., A.M.G.,
R.N., MGS., DCFR., HAAF.,
Major-General
Deputy Chief Administrative Officer

(COPY)

SUBJECT:- Electric Power ServiceAFHQ Adv Adm Echelon
C M F

AFHQ

Allied Control Commission
(for Maj-Gen. Joyce)

59/8 Q

26 Dec 43

Copy to:- OG PBS

DDH

1. There has been some doubt as to the relative responsibilities of Allied Control Commission and of the Local Resources Board in regard to the rehabilitation and distribution of electric power.

2. The electric power system of ITALY resembles to some extent the railway system in that any organisation for its repair and development must cover the country as a whole, and be subject to centralised control. Any doubt as to the relative responsibilities of separate organisations is most undesirable.

3. A proposal has now been put forward by Colonel James P. Grownon of the Electrical Sub-Commission of the ACC advocating the establishment of an Electric Power Service operating under this HQ. Colonel Grownon proposes that he, himself, should be the head of this Service and that an establishment be drawn up, integrated US and British, with clerical staff and transport. This staff can only partly be found from the existing staff of the Electrical Sub-Commission ACC. The establishment of this service will place Colonel Grownon in a similar position to that occupied by Brig-Gen. Carl Gray as head of the Military Railway Service.

4. The responsibilities of this Electric Power Service would comprise the repair and development of Italian state and privately owned electric power systems up to and including local sub-stations. From this point responsibilities would remain with the Area or Base Section Commander concerned. All questions regarding the allocation of electric power as between civil and military users or between the various military services, Naval etc., would be decided by the Electric Power Committee of the Local Resources Board.

5. I consider this proposal has much to commend it. I should be glad to know whether it is approved in principle by AFHQ and also whether Maj-Gen. Joyce would be prepared to accept it. It would be understood that at a later stage, as the advance into ITALY progresses, the matter could be revised in case it should then seem desirable for the Electric Power Service so created to revert to control by ACC.

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6. If approval in principle is given I will have the details worked out and keep you informed on progress.

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(sgd) B. H. ROBERTSON,
Major-General.
Deputy Chief Administrative Officer.

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