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15 OCT 1987

From: Commander, Atlantic Division, Naval Facilities Engineering Command
To: Commanding General, Marine Corps Base, Camp Lejeune

Subj: EMERGENCY GENERATOR, STEAM PLANT HP1700

Ref: (a) Meeting MCB Camp Lejeune (Utilities Personnel)/LANTHAVFACENGCOM
(Mr. David Knight/Mr. Joe Belica) of 20 May 1987
(b) Facility Project LR317M Replace Coal Feeders and Pulverizers, Steam
Plant, Building HP1700
(c) NAVFAC Design Manual DW-3.6

Encl: (1) Equipment to be Operated by Generator
(2) Cost Estimate for Emergency Generator Installation at Naval
Amphibious Base, Little Creek

1. During reference (a) the method of operation of the central steam plant, HP1700, during an electrical power outage was discussed. In the past the procedure was to bring on line the existing 20 KW emergency generator, switch to oil firing and operate the boilers with natural draft. A purge cycle is required to eliminate any combustible gasses that may remain in the furnace box after a loss of ignition. The new control system, which was installed as part of reference (b), is programmed for a five minute purge cycle before ignition. During a loss of power this will cause a loss of some steam pressure that is required for operation of auxiliaries such as the feed water pumps. Operational personnel requested that a by-pass be provided so that this five minute delay for purging could be eliminated during a power outage. It was agreed that a switch, even a keyed switch, that would eliminate the purge cycle during loss of power was not a good alternative because of the obvious safety problems. It was also agreed that a natural draft purge is not sufficient. A forced draft purge is required. Reference (b) is also providing an additional 100 KW generator that will serve the ignition oil pump, new controls, No. 6 oil pump and the electrostatic precipitator dampers.

2. To eliminate the safety problem of starting a boiler with a limited purge cycle and to provide essential steam to facilities it is recommended that the existing emergency generators be replaced with one emergency generator capable of operating the essential plant equipment.

3. Reference (c) also recommends that steam plants be equipped with an emergency generator with enough capacity to allow essential equipment operation. To supply essential steam during the coldest winter months at least two boilers must be on line. The estimated size of a generator to operate two boilers at HP1700, firing oil, is 750 KW, as shown on enclosure (1).

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4. It is suggested that a project be prepared to install a 750 KW generator in HP1700. Enclosure (2) is a detailed Government Cost Estimate for the installation of a 750 KW emergency generator at the central steam plant at the Naval Amphibious Base, Little Creek, as can be seen the estimated cost is \$272,000. This cost estimate contains some protective devices and equipment for operating the generator in parallel with the utility company, which you may not need. If the final scope of the project is over \$200,000, the project would require MILCON funding.

5. After the project has been submitted, and has the support of higher authority we recommend that a request for a Mobile Utility Support Equipment (MUSE) 750 KW diesel generator be forwarded to the Naval Energy and Environmental Support Activity (NEESA) via this Command and your major claimant. A MUSE diesel generator can provide the emergency support for the steam plant until the project is completed. To connect the MUSE generator to the plant some electrical work must be accomplished. If technical assistance is required, please contact this office.

6. Additionally, if you wish to operate the generator in parallel with the utility, contact LANTNAVFACENGGCOM Code 11 so that Carolina Power and Light's requirements for parallel operation can be determined.

A. J. HANSEN
By direction

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MCB Camp Lejeune, Utilities Division

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It is suggested that a contract be awarded to the contractor for the construction of a 150 KW generator set. The contract should include the cost of the generator set, the cost of the protective devices, and the cost of the control system. The project is estimated to cost \$200,000. The project will require 1200 hours of work.

2. After the project has been admitted, and has the support of the appropriate agencies, a request for a Mobile Diesel Support Equipment (MDSE) should be forwarded to the Naval Energy and Power Division. A MDSE generator set provides the emergency support for the generator until the project is completed. To connect the MDSE generator to the plant, electrical work must be accomplished. The electrical department should plan to complete this work.

If you wish to connect the generator in parallel with the existing generator, you should consult the Naval Energy and Power Division for the appropriate operating and safety instructions.

A. J. HANSEN
Director

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