

CREATORS OF ELECTRICAL
POWER SUPPLY SYSTEMS



POWER SYSTEMS
A MORRISON-KNUDSEN DIVISION

101 GELO ROAD / POST OFFICE BOX 1928
ROCKY MOUNT, NORTH CAROLINA 27801
PHONE: (919) 977-2720 / TWX: (510) 925-0725
TELEX 802507 PSD-RYMO

September 1, 1982

Nuclear Regulatory Commission
Region II Office
101 Marietta St., N.W.
Suite 3100
Atlanta, GA 30333

Attention: J.D. O'Reilly, Regional Director

Reference: 10CFR-21 Reporting Defects and Non-Compliance
Emergency Diesel Power Supplies
Generators EMD Diesel Engine Model
645E4 Series Diesel Engine

Dear Sir:

A diesel engine, when operating within an engine room, contributes a heat load to the surrounding air, thereby causing a rise in the room temperature.

The original estimated contribution of heat into the engine room is shown in Table A. This estimated contribution was revised to higher values as shown in Table B. The Tables contain the heat loads for the diesel engines only and do not include the heat load from the generator.

Installations that use the GMC model 645E4 series diesel engine should check their engine room air flow rates to verify that their maximum design ambient is not exceeded with the combined heat load from the generator and diesel engine.

The estimated values stated in the Tables are maximum with a large margin of safety. The actual values are at lower values which we are in the process of evaluating both by factory and field tests.

A. Heat Radiation Data - Original

The table below may be used as a guide to estimate engine room ventilation requirements.

Heat radiation from the engine and accessories is estimated at 2 BTU/Min per KW. Heat radiation from the generator is estimated at 1.5 BTU/Min per KW.

OFFICIAL COPY

T 6 20

.....Cont'd

8209090056 820901
PDR PT21 EMVMORKP
82 PDR

USNRC REGION II
ATLANTA, GEORGIA

820901
PT 21
7

POWER SYSTEMS
A MORRISON-KNUDSEN DIVISION

Nuclear Regulatory Commission
Page 2
September 1, 1982

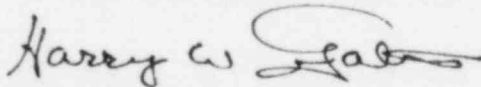
<u>Model</u>	<u>Rating</u>	<u>Engine BTU/Min</u>	<u>BTU/BHP-Min</u>
20E4	2500KW	5000	1.39
16E4	2100 KW	4200	1.37
12E4	1575 KW	3150	1.37
8E4	1000 KW	2000	1.31
16E1	1400 KW	2800	1.43
12E1	1050 KW	2100	1.4
8E1	700 KW	1400	1.43

B. Heat Radiation Data - Revised

<u>Model</u>	<u>Rating-BHP</u>	<u>Engine BTU/Min</u>	<u>BTU/Min-HP</u> <u>Engine Only - Total</u>	
20E4	3600	17,300	4.8	5.97
16E4	3070	14,750	4.8	5.94
12E4	2305	11,050	4.8	6.03
8E4	1525	7,300	4.8	6.26
16E1	1950	9,950	5.1	6.38
12E1	1500	7,650	5.1	6.5
8E1	975	4,950	5.1	6.97

Very truly yours,

POWER SYSTEMS
A MORRISON-KNUDSEN DIVISION



Harry W. Falter, P.E.
Division Engineer

HWF/voa