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AUTH.NAME AUTHOR AFFILIATION
MANAGAN,C.V. Niagara Mohawk Power Corp.
RECIP.NAME RECIPIENT AFFILIATION
SCHWENCER,A. Licensing Branch 2

SUBJECT: Forwards revised responses to FSAR Questions 430.61,430.74 & 430.86 re fuel oil availability & storage.Info will be incorporated in Amend 17 to FSAR.

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

November 30, 1984
(NMP2L 0262)

Mr. A. Schwencer, Chief
Licensing Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: Nine Mile Point Unit 2
Docket No. 50-410

Dear Mr. Schwencer:

Enclosed for your use and information are the Nine Mile Point Unit 2 revised responses to several Nuclear Regulatory Commission's Final Safety Analysis Report questions. This information has been previously discussed with your staff and is submitted to aid your review of the Unit 2 license application for the resolution of these questions. This information includes responses to questions 430.61, 430.74 and 430.86.

The enclosed information will be included in Final Safety Analysis Report Amendment 17.

Very truly yours,

C. V. Mangan
Vice President
Nuclear Engineering & Licensing

NLR:ja
Enclosure
xc: R. Gramm, NRC Resident Inspector
Project File (2)

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
Niagara Mohawk Power Corporation	)	Docket No. 50-410
	)	
(Nine Mile Point Unit 2)	)	

AFFIDAVIT

C. V. Mangan, being duly sworn, states that he is Vice President of Niagara Mohawk Power Corporation; that he is authorized on the part of said Corporation to sign and file with the Nuclear Regulatory Commission the documents attached hereto; and that all such documents are true and correct to the best of his knowledge, information and belief.

C V Mangan

Subscribed and sworn to before me, a Notary Public in and for the State of New York and County of Onondaga, this 30 day of November, 1984.

Janis M. Macro
Notary Public in and for
Onondaga County, New York

My Commission expires:
JANIS M. MACRO
Notary Public in the State of New York
Qualified in Onondaga County No. 4784555
My Commission Expires March 30, 1985.

QUESTION F430.61 (9.5.4)

In Section 9.5.4.3 you state that diesel fuel oil is available from local distribution sources. Identify the sources where diesel quality fuel oil will be available and the distances required to be travelled from the source(s) to the plant. Also discuss how fuel oil will be delivered onsite under extremely unfavorable environmental conditions. (SRP 9.5.4, Part I)

Discuss the precautionary measures that will be taken to assure the quality and reliability of the fuel oil supply for emergency diesel generator operation. Include the type of fuel oil, impurity and quality limitations as well as diesel index number or its equivalent, cloud point, entrained moisture, sulfur, particulates and other deleterious insoluble substances; procedure for testing newly delivered fuel, periodic sampling and testing of onsite fuel oil (including interval between tests), interval of time between periodic removal of condensate from fuel tanks and periodic system inspection. In your discussion include reference to industry (or other) standard which will be followed to assure a reliable fuel oil supply to the emergency generators. (SRP 9.5.4, Parts II and III)

RESPONSE

See revised Sections 9.5.4.2 and 9.5.4.3 and Table 1.8-1, Regulatory Guide 1.137.

SUPPLEMENTAL RESPONSE

The following proposed technical specification addresses protection of the fuel oil storage tank from internal corrosion. These requirements will be incorporated in the Unit 2 Technical Specifications.

insertion into the sounding tube furnished in each storage and day tank. The possible accumulation of water at the bottom of each diesel fuel oil storage and day tank is also checked by applying a water-indicating paste to the sounding rod. The paste changes color when it comes in contact with water. water is removed from the storage tanks by the use of a portable pump and from the day tanks by opening a drain valve located near the bottom of each tank.

Adequate sources of diesel quality fuel oil are available in the cities of Oswego (8 mi), Belgium (25 mi), and Syracuse (35 mi). Under extremely unfavorable environmental conditions, fuel oil will be delivered onsite via tanker truck escorted by highway snow removal equipment.

This will permit each standby diesel generator system to supply uninterrupted emergency power. Fuel oil meets or exceeds the quality requirements of the technical specifications and the diesel engine manufacturer's recommendations.

The growth of algae in the fuel oil storage tank is determined by measuring the oxidative stability in accordance with technical specifications If it is more than 2 mg/100 ml, the fuel oil in the affected storage tank will be appropriately treated (filtration or biocides) to reduce the level to acceptable concentrations.

9.5.4.4 Inspection and Testing Requirements

The standby diesel generator fuel oil storage and transfer system is designed to permit periodic inspection and maintenance of active components. Local display and indicating devices are provided for periodic inspection of tank oil level and operating parameters such as pump discharge pressure and pressure drop across each fuel oil strainer.

Fuel oil storage and day tanks and piping are hydrostatically tested prior to filling with fuel oil. System operability is tested in conjunction with the diesel generator. Continued system integrity is verified with periodic testing with the diesel generator.

c. At least once per 31 days and after each operation of the diesel where the period of operation was greater than or equal to 1 hour by checking for and removing accumulated water from the day tanks.

d. Once per 31 days by checking for and/or removing accumulated water from the fuel oil storage tanks.

e. By sampling new fuel oil in accordance with ASTM D4057-81 prior to addition to the storage tanks and:

1) By verifying it meets the requirements specified in ASTM D975-81 prior to addition to the storage tanks by the following:

a) An API Gravity of within 0.3 degrees at 60°F or a specific gravity of within 0.0016 at 60/60°F, when compared to the supplier's certificate or an absolute specific gravity at 60/60°F of greater than or equal to 0.83 but less than or equal to 0.89 or an API gravity at 60°F of greater than or equal to 27 degrees but less than or equal to 39 degrees.

b) A kinematic viscosity at 40 °C of greater than or equal to 1.9 centistokes, but less than or equal to 4.1 centistokes, if gravity was not determined by comparison with the supplier's certification,

c) A flash point equal to or greater than 125°F, and

d) A clear and bright appearance with proper color when tested in accordance with ASTM D4176-82.

2) By verifying within 31 days of obtaining the sample that the other properties specified in Table 1 of ASTM D975-81 are met when tested in accordance with ASTM D975-81 except that the analysis for sulfur may be performed in accordance with ASTM D1552-79 or ASTM D2622-82.

f. At least once every 31 days by obtaining a sample of fuel oil from the storage tanks in accordance with ASTM D2276-78, and verifying that total particulate contamination is less than (10 mg/liter)** when checked in accordance with ASTM D2276-78, Method A.

**To be determined during pre-operational testing.

QUESTION F430.74 (9.5.5)

In FSAR Section 9.5.5.2, you state that antifreeze compounds are not used in the diesel generator cooling water systems because they are located in a heated building. Consider a loss of heating to one or more diesel generator rooms, and describe the provisions in your system(s) design to prevent freezing of the diesel engine cooling water.

PSB COMMENTS

The response will be acceptable if:

a. The applicant will establish procedures to start and adequately load the DG's to maintain proper engine temperature in the event DG room heating is lost, and

b. The Unit 2 design is such that DG's in test mode will isolate from the grid and revert to automatic mode, ready to accept safety loads, on a LOOP and/or SI signal.

RESPONSE

Each diesel generator room is provided with multiple nonsafety-related electric unit heaters, designed to maintain a space temperature of not less than 65°F in the winter. The unit heaters are controlled with thermostats. Each room also has a separate QA Category I thermostat, with dual high (120°F) and low (65°F) temperature settings, for the purpose of annunciating an alarm in the main control room if space temperature falls below 65°F or rises above 120°F.

In the unlikely event that all unit heaters in a given room are inoperable due to mechanical/electrical failure, and this happens concurrent with a subfreezing outdoor condition, either additional portable heating will be used or the associated diesel engine would be started and run to maintain the temperature. Should loss of offsite power occur, concurrent with a subfreezing outdoor condition, the diesel engines will start automatically, thereby maintaining temperature.

RESPONSE TO PSB COMMENTS

a. Using the Class 1E temperature indication and the alarm from the control room annunciator, the operator can determine the HPCS diesel generator room temperature has dropped below 65°F. When an alarm occurs, annunciator response procedures will direct the appropriate operator response. If the room temperature drops below 65°F, the operator will immediately verify the temperature in the diesel generator room and take the following action(s):

1. Restore the room temperature to be greater than or equal to 65°F within one hour; or

2. Provide temporary heating to restore the room temperature to be equal to or greater than 65°F in four hours; or

3. Start and run the diesel generator until the room temperature is restored and maintained at greater than 65°F; or

4. Declare the HPCS diesel generator inoperable.

In addition, the HPCS diesel generator room temperature will be checked once per shift to verify that room temperature is greater than or equal to 65°F.

The above actions and surveillance requirements will be incorporated into the Unit 2 Technical Specifications.

Also see response to questions F430.77 and F430.86.

b. Unit 2 emergency diesel generators controls are so designed that an emergency start signal will isolate the diesel generator from test mode and put it on automatic mode. See Section 8.3.1.1.2.

QUESTION F430.86 (9.5.7)

Your discussion of the prelubrication systems for the Division I/II and Division III diesel generators indicates that prelubrication is provided to the upper parts of the diesel engines (valves, rocker arms, rocker shafts, etc). For some diesel engine designs, excessive or continuous prelubrication to the upper engine areas could result in lube oil entering and collecting in the cylinders with the potential for causing extensive engine damage when called on to start. Revise your FSAR to specifically address the design of all diesel generators with regard to this potential problem, and the applicable design considerations to preclude this from occurring.

PSB COMMENTS

Not acceptable. The revised FSAR Section referenced in the response does not address the question (for Division I and II). No response is provided for the Division III DG.

RESPONSE

See revised Section 9.5.7.5 for Divisions I and II. For Division III, see revised Section 9.5.7.3.

RESPONSE TO PSB COMMENTS

For Divisions I and II see Section 9.5.7.5. For the Division III diesel generator, EMD recommended maintenance instruction 9644 will be implemented in accordance with NUREG/CR-0660. Additionally, Niagara Mohawk will perform a weekly manual prelubrication program for the Division III Diesel Generator. The manual prelubrication program will be incorporated in appropriate plant procedures.