MAINE YANKEE ATOMIC POWER COMPANY •

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August 11, 1982
MN-82-153 JHG-82-144

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Office of Nuclear Reactor Regulation
Division of Licensing
Operating Reactors Branch No. 3
Mr. Robert A. Clark, Chief

References: (a) License No. DPR-36 (Docket No. 50-309)
(b) YAEC letter to USNRC, dated May 1, 1982 (FYR-81-69)
(c) YAEC letter to USNRC, dated May 19, 1982 (FYR-82-51)

Subject: Degraded Grid Voltage

Dear Sir:

The purpose of this letter is to forward the attached additional information, as requested during a meeting held in Bethesda on June 17, 1982 and during a telecon held on June 25, 1982. This information will supplement information submitted to you in References (b) and (c).

We trust that this information is acceptable; however, should you have further questions, please contact us.

Very truly yours,

MAINE YANKEE ATOMIC POWER COMPANY

A. E. Lovejoy

John H. Garrity, Senior Director
Nuclear Engineering and Licensing

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Attachments (3 pages)

cc: Mr. Ronald C. Haynes
Mr. Paul Swetland

ATTACHMENT 3

MAINE YANKEE

AVAILABLE EQUIPMENT TO ACHIEVE AND MAINTAIN HOT SHUTDOWN
(i.e. Not in Normal Operation)

Auxiliary Feed Pumps - 2 motor driven
- 1 steam driven

Charging Pumps - 2 spare

Auxiliary Charging Pump

Primary Component Cooling Pump - 1 spare

Secondary Component Cooling Pump - 1 spare

Service Water Pumps - 2 spare

Motor Driven Fire Pump

Diesel Driven Fire Pump

Associated Valves - Not normally operating, in addition diverse flow paths are available.

Diesel Generator

Instrumentation - Connected to regulated power supplied - not affected by degraded grid conditions.

Attachment 1

Additional Information for Maine Yankee

Considering the evolution and history of the degraded grid voltage protection issue, and the time and effort exhausted by all, MYAPC is again providing additional information with the understanding that your approval will be forthcoming. Since the detailed design of the degraded grid voltage protection scheme cannot commence until after NRC approval of our concept is received, the following information is preliminary.

(1) Two degraded grid under voltage relays will be located on each 4160 volt safety bus. The relays will be instantaneous under voltage relays set at 93% ± 1% of 4000 volts. This setting assures that adequate voltage exists at the terminals of all safety related electric equipment fed from other buses. The results of YAEC - 1204 "Auxiliary Power System Voltage Study for Maine Yankee Atomic Power Station" were used to develop the voltage settings.

(2) A time delay of ten seconds is provided to prevent actuation during transients caused by motor starting or grid disturbances. The time delay will not exceed the time delay assumed in the FSAR accident analysis.

(3) Maine Yankee continues to object to the addition of certain setpoints in the Technical Specifications. Please refer to letter FMY-81-32, dated March 5, 1981. We would prefer to develop a detailed surveillance procedure for degraded grid under voltage protection pursuant to Maine Yankee Technical Specification 5.8.1.C, which would specify the setpoints, bases, and actions to be taken if acceptance cirteria were not met.

(4) The under voltage system design will satisfy the requirements of IEEE 279-1971.

(5) Surveillance intervals and actions to be taken if the setpoints were not within the limits specified would be included in the surveillance procedure described in item (3).

(6) Maine Yankee has committed to modify its design to reinstate load shedding if a diesel-generator breaker is tripped. Please refer to FMY-81-32, dated March 5, 1981.

(7) Technical specification language is provided in Attachment 2 for information. The technical specifications would provide a test to demonstrate that upon interruption of the on-site sources, the loads are shed and subsequent bus loading is through the sequencer. However, we cannot propose specifications until we know what the final design will be.

ATTACHMENT 2

4.5 EMERGENCY POWER SYSTEM PERIODIC TESTING

Applicability: Applies to the periodic testing requirements of the station emergency electrical power systems.

Objective: To verify the operability of the station emergency electrical power systems.

Specification: A. Diesel Generators:

The following tests shall be performed:

1. Manually initiated demonstration of the ability of each diesel generator to start and deliver power up to the maximum expected emergency loading when operating in parallel with other power sources. This test will be conducted monthly whenever Plant Conditions are as defined in Section 3.6.A of these Specifications, and shall be of at least two hours duration, and include operation of the fuel oil transfer pumps.

2. Demonstration of the readiness of the diesel generator to start automatically and restore power to vital equipment by initiating or simulating loss of all normal ac station service power supplies. This test will be conducted during each refueling interval.

B. Station Batteries:

Each week the specific gravity and voltage of the pilot cell of each of the two main station batteries that are associated with the dc buses feeding the safeguards equipment shall be measured and an overall visual inspection of each battery shall be performed. Every other month the liquid level, the specific gravity and the voltage of all cells of each of these batteries shall be checked; and during the initial refueling interval, and every third refueling interval thereafter, they shall be subjected to a rated load discharge test.

Basis: The test of the diesel generators is conducted to demonstrate that the diesel generators will provide adequate power for operation of vital equipment.

The test of the diesel generators during each refueling interval will functionally test automatic diesel starting, closure of diesel breaker, emergency bus loading, load shedding, and reinstatement of the load shed feature upon trip of the diesel generator breaker. The diesel generator will be started by initiating or simulating loss of normal ac station service power. 1