



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

REVIEW BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO LICENSE AMENDMENT REQUEST DATED JUNE 14, 1995

NORTHEAST NUCLEAR ENERGY COMPANY, ET AL.

MILLSTONE NUCLEAR POWER STATION, UNIT NO. 3

DOCKET NO. 50-423

1.0 INTRODUCTION

On June 14, 1995, as supplemented July 23, 1996, Northeast Nuclear Energy Company (the licensee) requested an amendment to the Technical Specification (TS), "Electrical Power Systems," for Millstone Nuclear Power Station, Unit 3. The proposed amendment would revise the frequency of certain surveillance requirements (SR) for the electrical power systems. The change, from "at least once per 18 months" to "at least once per refueling interval," would permit a longer 24-month operating cycle for the unit. The proposed amendment would also delete the phrase "during shutdown" from some of these surveillance requirements to permit the surveillance during other operational modes when it is safe to perform the surveillance.

2.0 EVALUATION

The NRC staff has completed its review and finds that the licensee's proposed amendment is not acceptable because of the following weaknesses:

- The licensee did not provide adequate justification for deleting the phrase "during shutdown" from the TS SRs. NUREG-1431, Rev. 0, "Standard Technical Specifications, Westinghouse Plants," indicates that most of the surveillances will not be performed during Modes 1 and 2. In order for the staff to evaluate the removal of this requirement, the licensee needs to show that there is no increase in risk to the plant while performing these SRs during power operations. This is consistent with previous NRC staff positions regarding changes of surveillance or maintenance to be accomplished at power.
- The plant does not have a spare battery that can be substituted when one battery is taken out of service; therefore, the current specifications allow plant operation for only 2 hours with one battery out of service for surveillance testing. The battery surveillance tests, such as a service test require a much longer time than 2 hours. In order to perform a service test at power, the licensee needs to show that there is no increase in plant risk while these tests are conducted. The licensee has not submitted any risk insights to justify conducting these tests at power.

ENCLOSURE

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- The staff is concerned about the existing SR 4.8.2.1.e, which requires that each 125-volt battery bank and charger be demonstrated operable "At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. Once per 60-month interval this performance discharge test may be performed in lieu of the battery service test required by Specification 4.8.2.1.d.; and"

Based on the proposed amendment, the service test may not actually be performed for a long time (48 months per proposed amendment versus 36 months per existing requirement) since the performance discharge test is performed in lieu of a service test. The service test verifies the battery's ability to meet the design duty cycle loads. The staff previously accepted an extension of SRs for dc power system from 18 to 24 months on the basis of a revised fuel cycle with battery surveillances (service and performance discharge tests) modified to be consistent with the Institute of Electrical and Electronics Engineers (IEEE) 450-1995 and the standard technical specifications (STSS). These documents recommend that a service test is not required if a modified performance discharge test is performed. The modified performance discharge test, as defined in IEEE Std. 450-1995, is a test, in the as-found condition, of a battery's ability to provide a high-rate, short-duration load (usually the highest rate of the duty cycle) that will confirm the battery's ability to meet the critical period of the load duty cycle, in addition to determining its percentage of rated capacity. As such, the modified performance discharge test is a worst-case load profile of the traditional battery service test and a performance discharge test combined. Otherwise, a service test shall be performed during every refueling outage.

- The staff is also concerned about SR 4.8.2.1.f, which requires that each 125-volt battery bank and charger be demonstrated operable "At least once per 18 months, during shutdown, by giving performance discharge tests of battery capacity to any battery that shows signs of degradation or has reached 85% of the service life expected for the application. Degradation is indicated when the battery capacity drops more than 10% of rated capacity from its average on previous performance tests, or is below 90% of the manufacturer's rating." The battery that shows signs of degradation or has reached 85 percent of the service life expected for the application must be tested every year rather than every 24 months as requested by the licensee. The staff finds the amended requirement to be inconsistent with the licensee's commitment to IEEE 450-1975 as stated in the Final Safety Analysis Report. Additionally, the battery is considered to be degraded when the battery capacity drops more than 10 percent from its capacity on the previous performance discharge test or is below 90 percent of the manufacturer's rated capacity.
- The staff is also concerned about increasing the surveillance interval of the penetration conductor protective devices and thermal overload devices for motor-operated valves. The staff is concerned about the timely maintenance and refurbishment or replacement of these devices to ensure their reliability. Grease hardening and the age of the devices need to be given special attention which may

not be possible when the surveillance interval is increased. Additionally, no justification has been provided that demonstrates the very small sample of these devices tested during a refueling outage of 18-month duration is sufficient for an outage of 24 months. The licensee did not provide an adequate basis for increasing the interval from 18 to 24 months for surveillance of these devices.

3.0 CONCLUSIONS

Based on the above mentioned issues, the staff finds the licensee's proposed amendment request unacceptable. After the licensee has reviewed these issues, the staff would like to have a meeting to discuss the next step (e.g., withdrawal of or supplement to the request).

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Date: March 10, 1999