

NORTHEAST UTILITIES



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November 30, 1990

Docket No. 50-245

B13682

Re: 10CFR50.90

Attention: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
Proposed Revision to Technical Specifications
Emergency Power Source Surveillance Requirements

Pursuant to 10CFR50.90, Northeast Nuclear Energy Company (NNECO) hereby proposes to amend Operating License DPR-21 by incorporating the changes identified in Attachment 1 into the Technical Specifications of Millstone Unit No. 1.

Description of Proposed Changes

The current Millstone Unit No. 1 Technical Specifications governing emergency power source surveillance requirements (Section 4.9.A.1.a for the diesel generator and Section 4.9.A.2.a for the gas turbine generator) state that the monthly surveillance test shall continue until the diesel and gas turbine generators are at "equilibrium temperature at full load output." NNECO is proposing to test the diesel generator at its "continuous rated load output" and the gas turbine generator at "greater than or equal to post-accident load requirements." The diesel generator load requirement and the gas turbine generator post-accident load requirement will be defined in Bases Section 4.9.A. Current load requirements are 2,665 kW and 10,610 kW, respectively. NNECO also proposes to test the emergency power sources for "at least 60 minutes."

In addition, allowing the use of gas turbine generator peaking operation to demonstrate operability, in lieu of the monthly surveillance run, is being eliminated.

Discussion

In its response⁽¹⁾ to a Notice of Violation, NNECO committed to clarify the gas turbine generator test requirements/acceptance criteria contained in

(1) E. J. Mroczka letter to U.S. Nuclear Regulatory Commission, "Reply to a Notice of Violation (EA 90-084)," dated August 15, 1990.

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Section 4.9.A.2.a of the Millstone Unit No. 1 Technical Specifications. In a letter dated October 22, 1990,⁽²⁾ NNECO stated that the proposed Technical Specification change would be submitted to the NRC by November 30, 1990. During initial evaluation of the change, NNECO concluded that it would be prudent to also clarify the test requirements/acceptance criteria for the diesel generator in Section 4.9.A.1.a. Accordingly, changes to Sections 4.9.A.1.a, 4.9.A.2.a, and Bases Section 4.9.A are being proposed.

The diesel generator operability surveillance, Section 4.9.A.1.a, will be changed to remove the ambiguity that is inherent in the present requirement for testing at "equilibrium temperature at full load output." The proposed change eliminates this requirement as a means of determining the extent of the surveillance run and substitutes a requirement for a run at "continuous rated load output for at least 60 minutes." This provides a more definitive surveillance acceptance criteria. The 60-minute minimum duration will allow equilibrium conditions to be attained and is consistent with the minimum recommendations of the engine manufacturer. A test at the continuous rated load of 2,665 kW exceeds the current post-accident load requirement of 2,632 kW and, thus, is conservative in verifying the ability of the diesel generator to perform its intended function.

The gas turbine generator operability surveillance, Section 4.9.A.2.a, will be modified to both clarify existing acceptance criteria and remove the subjectivity associated with the phrase "equilibrium temperature." The current Technical Specification is vague in its requirement to test at "equilibrium temperature at full load output." This requirement will be deleted and replaced by a surveillance run at "greater than or equal to the post-accident load requirement for at least 60 minutes."

The elimination of the inherently subjective "equilibrium temperature" requirement will increase the clarity of the surveillance test acceptance criteria. In its place, the requirement for a run of "at least 60 minutes" is inserted. This provides a more definitive test requirement and a clear standard by which to judge equipment operability. The duration is in accordance with Millstone Unit No. 1 plant-specific experience regarding the attainment of steady state operating conditions.

The basis of the Technical Specification surveillance run is to demonstrate equipment operability and readiness to respond to post-accident load demand. Therefore, the proposed load run, performed at greater than or equal to the post-accident load requirements, will verify that the gas turbine generator is capable of fulfilling its intended safety function. The post-accident load requirement must be used as a basis for testing because the maximum output of the gas turbine generator varies with the ambient air temperature.

J. Mroczka letter to U.S. Nuclear Regulatory Commission, "Change of Commitment to Modify Technical Specifications," dated October 22, 1990.

Overall, the proposed changes will clarify the Technical Specifications by removing the ambiguity currently present and provide more definitive testing criteria. In addition, deleting the option which credits peaking operation will provide less flexibility in demonstrating operability of the gas turbine generator. The criteria established are in accordance with industry practice, BWR Standard Technical Specifications, manufacturer's recommendations, and plant-specific experience.

Significant Hazards Consideration

NNECO has reviewed the proposed changes in accordance with 10CFR50.92 and has concluded that they do not involve a significant hazards consideration in that the changes do not:

1. Involve a significant increase in the probability or consequences of any accident previously analyzed.

The proposed changes modify the testing requirements for the diesel and gas turbine generators at Millstone Unit No. 1. These modifications will clarify surveillance requirements and will ensure that the emergency power supplies can handle expected post-accident loads. Clarification of diesel and gas turbine surveillance requirements does not, in and of itself, increase the probability of any accident previously analyzed.

The proposed surveillance requirements do not increase the probability of failure of the diesel generator, since the continuous rated load is greater than the post-accident load requirement for the diesel generator. Therefore, performing the surveillance at the rated load assures that, post-accident, the diesel generator can supply necessary power. Similarly the gas turbine generator will be tested at the post-accident load requirement, assuring that it can provide the necessary post-accident power. This requirement is more specific than the current requirement, which specifies testing at "full load." "Full load" for the gas turbine generator varies with ambient air temperature. In addition, operation of the gas turbine and diesel generator for one hour assures that all critical components attain their equilibrium temperature. This gives the assurance that these machines are capable of functioning for an extended period of time post-accident. This proposed testing precludes the possibility of failures that could occur as components continue to heat up in a post-accident situation.

Lastly, removing the option to supply power to the grid from the gas turbine generator as an acceptable demonstration of operability has no negative impact on the probability of failure of the gas turbine generator.

2. Create the possibility of a new or different kind of accident from any previously analyzed.

The proposed changes will not create a new or different kind of accident since the expected post-accident functioning of the diesel and gas turbine generators is not negatively impacted. The proposed tests are consistent with existing test requirements as well as the intended post-accident use. Therefore, the reliability and expected performance of the diesel and gas turbine generators are equal to that currently assumed. Additionally, the proposed testing is consistent with the testing requirements (and implied performance) of the BWR Standard Technical Specifications. Use of an emergency power source as a peaking unit is not consistent with the current philosophy regarding the use of emergency power sources. Likewise, taking credit for such use in lieu of a formal surveillance is not preferred. Therefore, removing the option to allow demonstration of gas turbine generator operability solely by supplying power to the grid does not negatively impact gas turbine generator performance.

3. Involve a significant reduction in a margin of safety.

The proposed surveillance requirements maintain the basis of the Technical Specification for the gas turbine and diesel generators. The purpose of the diesel and gas turbine generators is to provide necessary power for the post-accident load. The revised surveillance requirements will assure that the testing is performed at a load greater than or equal to post-accident loads. Also, the test will be continued for at least one hour. This assures long-term operability of these machines. Therefore, it is concluded that the proposed surveillance requirements will adequately test the diesel and gas turbine generators to assure post-accident operability and maintain the margin of safety shown by the current safety analyses.

The Commission has provided guidance concerning the application of standards in 10CFR50.92 by providing certain examples (March 6, 1986, 51FR7751). While the proposed changes are not enveloped by any specific example, the changes are clearly within all acceptable criteria. NNECO is proposing to clarify and remove subjectivity and ambiguity from the existing Technical Specifications governing surveillance requirements for the emergency power sources at Millstone Unit No. 1. The words "equilibrium temperature at full load output" will be quantified and the option of crediting peaking operation to demonstrate operability of the gas turbine generator will be deleted. Testing at the specified loads for at least 60 minutes is adequate to assure that the diesel generator and the gas turbine generator are capable of fulfilling their intended function.

The Millstone Unit No. 1 Nuclear Review Board has reviewed and approved the attached proposed changes and has concurred with the above determinations.

The changes are not required to support continued plant operation and can be implemented within 45 days of issuance. No specific schedule for approval and issuance is requested.

