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Docket No. 50-245
B11793

Director of Nuclear Reactor Regulation
Attn: Mr. John A. Zwolinski, Chief
Operating Reactors Branch #5
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Gentlemen:

Millstone Nuclear Power Station, Unit No. 1
Continuous Containment Leak Rate Monitoring

In 1978, Northeast Nuclear Energy Company (NNECO) proposed to amend the operating license,(1) DPR-21, by modifying the Millstone Nuclear Power Station, Unit No. 1 Technical Specifications. The proposed change would have deleted the surveillance requirement 4.7.A.3.g for primary containment leak rate monitoring. The proposal was precipitated originally because the nitrogen inerting system had not proved practical, in actual practice, for performing the continuous monitoring function for gross leakage.

Following additional required efforts to evaluate changes required to make the existing monitoring system more accurate, NNECO reaffirmed(2) the need for the Technical Specification revision.

It was concluded that the nitrogen makeup method is non-viable for continuous leak rate monitoring using existing equipment or utilizing other instrumentation. The NRC Staff in its Safety Evaluation Report (SER)(3) recognized the difficulties associated with attempting to accurately measure nitrogen makeup using a system which adds the large volumes necessary to maintain drywell to torus differential pressure in addition to containment purging to control oxygen. The Staff concluded that the proposed changes were acceptable with the stipulation that NNECO submit an alternate Technical Specification dependent on trends of drywell purge frequency and duration.

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(1) D. C. Switzer letter to D. L. Ziemann "Millstone Nuclear Power Station, Unit No. 1, Proposed Technical Specification Change," dated March 20, 1978.

(2) W. G. Counsil letter to D. L. Ziemann "Millstone Nuclear Power Station, Unit No. 1 Primary Containment Continuous Leak Rate Monitoring," dated April 16, 1980.

(3) D. M. Crutchfield letter to W. G. Counsil, "Proposed Revisions to Technical Specifications for Continuous Containment Leak Rate Monitoring," dated June 7, 1984.

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In March of this year[4], NNECO indicated its intention to install instrumentation necessary to allow the continuous monitoring of containment leak rate as a part of a project planned to eliminate the need for purging or venting to control drywell-to-torus differential pressure. The drywell-to-torus nitrogen pumpback system portion of the modification required an outage for system tie-in. This was scheduled for the 1985 refueling outage (which began October 26, 1985). The continuous monitoring system was scheduled for installation during the subsequent 1987 refueling outage.

In the time since the March letter to the Staff, two factors have emerged which require a change in the previously proposed schedule. The first factor involves the proposed installation during the 1985 refueling outage of four (4) valves which would allow the nitrogen pumpback system to be tied into containment with the plant operating. Two (2) of these valves were to be tied into the drywell and two (2) were to be tied into the torus. The purpose of these four (4) valves is to allow the remainder of the system to be tied in during normal plant operation; they would serve no useful purpose once the completed system is operating. However, these valves, once installed, would represent four additional potential leak paths from containment. As potential leak paths these valves would be required to be added to the local leak rate testing program and would require inclusion into the integrated leak rate testing program. In addition, the welds attaching the containment isolation valves to the torus are required, by the ASME Code, to undergo pressure testing. Such a pressure test would require pressurization of the drywell/torus.

It should be noted that while originally scheduled to aid in the final tie-in of the nitrogen pumpback system, the installation of these four valves during the upcoming refuel outage would require an Integrated Leak Rate Test (ILRT) to be performed during this outage. Such a test is currently scheduled for the 1987 refuel outage as a normal part of the Millstone Unit No. 1 Ten-year Inservice Inspection (ISI) program ILRT requirements. Postponement of the installation of the four (4) tie-in valves, therefore, eliminates the need for an unscheduled ILRT during the 1985 refueling outage.

The second factor affecting the installation work on the nitrogen pumpback system concerns the need for maintaining the drywell to torus differential pressure. As the Staff identified in its SER on Continuous Containment Leak Rate Monitoring[5], one cause of the Millstone Unit No. 1 high nitrogen usage is in maintaining the drywell to torus differential pressure:

> "In Millstone Unit 1, this is accomplished in a different manner than in other BWR plants."

A differential pressure between the drywell and torus is maintained following the inerting of the primary containment. The torus is aligned to the Standby Gas Treatment System and a 0.5 inch Hg vacuum is achieved; then nitrogen is added to the drywell to achieve the required pressure differential. Such

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(4) W. G. Counsil letter to J. A. Zwolinski, "Millstone Nuclear Power Station, Unit No. 1 Continuous Containment Leak Rate Monitoring" dated March 19, 1985.

operation has resulted in consumption figures for nitrogen on the order of 260,000 cubic feet per month. We have tasked a consultant with studying the feasibility of eliminating the requirement for maintaining the one psi pressure differential between the torus and the drywell. If the results of this study are favorable, installation of the nitrogen pumpback system would not be required. However, this will not affect the installation of equipment required for continuous containment leak rate monitoring as required by Technical Specifications.

The originally proposed nitrogen pumpback system would have been operational by January, 1987. Installation of the continuous monitoring equipment was initially, and still is, scheduled for the 1987 refueling outage. All pre-outage work will start in early 1987 for the continuous containment monitoring system with system completion during the 1987 refueling outage. The exact date of operation of the continuous containment monitoring system is a function of the outage date and not related to any decision on the need for a nitrogen pumpback system.

By deferring the installation of the drywell and torus valves from the upcoming outage to the 1987 refuel outage (pending the outcome of the consultant's study):

- o an unnecessary ILRT is eliminated,
- o the addition of four potential containment leak paths is avoided, and
- o ALARA is maintained.

NNECO concludes that the appropriate course of action is to continue with the current hardware and Technical Specifications which have been utilized for the past fifteen (15) years, until the modifications are completed during the 1987 outage. The continuous leak rate monitoring instrumentation will be made available during the 1987 refueling outage as originally scheduled with the exact date of operation being a function of the outage and not related to any decision on the need for a nitrogen pumpback system.

An alternate Technical Specification will be proposed to accompany installation of the continuous containment leak rate monitoring system at a later date. Unless advised to the contrary, we will assume that the above information is acceptable to the Staff.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

J. F. Opeka

J. F. Opeka
Senior Vice President

C. F. Sears

By: C. F. Sears
Vice President

cc: C. I. Grimes