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THE CONNECTICUT LIGHT AND POWER COMPANY
WESTERN MASSACHUSETTS ELECTRIC COMPANY
HOLYOKE WATER POWER COMPANY
NORTHEAST UTILITIES SERVICE COMPANY
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March 27, 1984

Docket No. 50-336
B11073

Director of Nuclear Reactor Regulation
Attn: Mr. James R. Miller
Operating Reactors Branch #3
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

References: (1) R. A. Clark letter to W. G. Counsil, dated March 14, 1983.

(2) R. A. Clark letter to W. G. Counsil, dated June 27, 1983.

(3) E. L. Conner letter to W. G. Counsil, dated May 14, 1982.

(4) W. G. Counsil letter to D. G. Eisenhut, dated December 15, 1980.

(5) W. G. Counsil letter to R. A. Clark, dated June 25, 1982.

(6) W. G. Counsil letter to D. G. Eisenhut, dated August 18, 1983.

(7) W. G. Counsil letter to T. E. Murley, dated October 25, 1983.

Gentlemen:

Millstone Nuclear Power Station, Unit No. 2
TMI Action Item II.F.1.6
Containment Hydrogen Monitor

By Reference (1) the NRC Staff issued a confirmatory order to Operating License No. DPR-65 for Millstone Unit No. 2 which confirmed Northeast Nuclear Energy Company (NNECO) commitments to implement certain post-TMI Action Plan items. The order specifically indicates that Item II.F.1.6, Containment Hydrogen Monitor, is complete. The requirement, as documented in the order, to provide a continuous indication of hydrogen concentration in the containment has been satisfied at Millstone Unit No. 2.

In reviewing the Staff's Safety Evaluation Report for this item which was provided in Reference (2) after the Reference (1) order was issued, NNECO identified a deviation from the NUREG-0737 specifications for the containment hydrogen monitor regarding pressure qualification of the instruments. The review was undertaken voluntarily as part of our follow-up actions associated with the matter described in Reference (7). NNECO hereby clarifies the information concerning the Millstone Unit No. 2 hydrogen monitor measurement capabilities.

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Hydrogen monitoring capability has been available at Millstone Unit No. 2 as part of the original plant design. Its primary purpose, as reflected in the bases of Technical Specifications, is to provide post incident information for operation of the hydrogen recombiners in the containment. Sample ports for the monitors are located in the containment post incident hydrogen control system piping upstream of the recirculation fans. This system circulates the containment atmosphere to provide a uniform mixture of post incident hydrogen and minimizes the formation of localized high hydrogen concentrations. As discussed in References (3) - (5), the sample ports are located to obtain a representative sample of the containment atmosphere and to minimize sample transit time.

There are two deviations from NUREG-0737 criteria not reflected in References (1) and (2) which are described below. First, the hydrogen monitoring system is not designed to draw a representative sample at containment pressures less than atmospheric pressure. NNECO does not consider this design limitation to be of concern due to the fact that under all postulated accident scenarios for which hydrogen monitoring capability would be desirable, the containment will be at or above atmospheric pressure. The Millstone Unit No. 2 containment is not a sub-atmosphere designed structure. As such, the monitoring capability will be available if and when it is needed.

Second, the following additional clarification is provided. The redundant hydrogen monitor sample lines are shared with the containment atmosphere-particulate radiation monitors and the post accident sampling system containment atmosphere sampler. The penetration into the containment for each of these sample lines isolates on a containment isolation signal. The design of the containment atmosphere-particulate radiation monitors makes it undesirable and impractical to open this penetration until containment pressure decays to 10 psig or less. As such, the hydrogen monitors will be available when the containment pressure is between 0 and 10 psig. This operating constraint is acceptable since the design basis loss-of-coolant accident with the associated containment pressurization does not result in appreciable hydrogen generation requiring monitoring until well after the containment pressure has been reduced to less than 10 psig by the containment air recirculation and cooling fans and/or the containment spray system. As documented in profile 19 of Reference (6), the containment pressure for the design basis containment pressurization loss-of-coolant event will be less than 10 psig in approximately three hours after the initiation of the event. This period is well within the time period when hydrogen monitoring capability would be desired based on FSAR Figure 14.18-3 which illustrates post incident hydrogen accumulation in containment.

Reference (6) also summarizes the environmental qualification of the hydrogen analyzers. The radiation sensitive electronics are located in a mild environment and the sampling components are high quality commercial grade equipment.

NNECO maintains that the intent of the NUREG-0737 requirement is fulfilled and item II.F.1.6 is complete for Millstone Unit No. 2, but recognizes that

References (1) and (2) are not entirely accurate due to the above described factors. It is emphasized that these deviations are of no substantive safety significance, and that the existing equipment is capable of performing the function of post-accident hydrogen monitoring.

This information is provided in order that the Staff may revise or supplement the Reference (1) confirmatory order and the Reference (2) SER as necessary to reflect the status of the containment hydrogen monitors at Millstone Unit No. 2.

Very truly yours,

NORTHEAST NUCLEAR ENERGY COMPANY

W. G. Counsil
Senior Vice President