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 VASSALLO, D.B. Operating Reactors Branch 2

SUBJECT: Provides justification for operation w/o Tech Spec. requirements of NUREG-0313, Rev 1, IV.B.1.6(2) re coolant leakage. Current capabilities afford operators opportunity to assess unidentified leakage situation.

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February 17, 1983

Director of Nuclear Reactor Regulation
Attn: Mr. Dominic B. Vassallo, Chief
Operating Reactors Branch No. 2
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Re: Nine Mile Point Unit 1
Docket No. 50-220
DPR-63

Dear Mr. Vassallo:

Your letter dated November 8, 1982 requested information regarding implementation of NUREG-0313, Revision 1. Our letter dated December 30, 1982 provided a response to your request. Question 4 of your November 8, 1982 letter requested that Niagara Mohawk provide revised Technical Specifications, regarding coolant leakage incorporating the requirements of NUREG-0313, Revision 1, IV.B.1.b(2) or provide justification for continued plant operation without such Technical Specifications. Any such justification was requested to include plant leakage data and/or operating experience information. In our December 30, 1982 letter we indicated that an analysis was being performed to provide justification for continued plant operation without the Technical Specification requirements of NUREG-0313, Revision 1, IV.B.1.b(2). Our justification for not including such Technical Specifications is provided herein.

Leakage Monitoring Capability

As indicated in our December 30, 1982 letter, unidentified leakage is collected in the drywell floor drain tank. Monitoring of unidentified leakage is provided by two separate systems, rate of rise instrumentation and a timer detection system. Each of these systems has redundant instrumentation. The rate of rise instrumentation signals are processed in two ways: level versus time and rate of change. Therefore, a total of three indications are available for control room operators to assess any changes in the drywell floor drain tank level. In addition, a containment atmospheric monitoring system which provides continuous indication of containment airborne radioactivity, can provide indication of unidentified leakage.

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Operating Experience

The first requirement of NUREG-0313, Revision 1 IV.B.1.b(2) required that plant shutdown be initiated for inspection and corrective action when the total unidentified leakage attains a rate of five gallons per minute or its equivalent. Existing Nine Mile Point Unit 1 Technical Specifications limit the total unidentified leakage to 5 gallons per minute. If this condition cannot be met, the existing Technical Specifications require that the reactor be placed in the cold shutdown condition within ten hours. This specification meets the first requirement of NUREG-0313, Revision 1 IV.B.1.b(2). The second requirement requests that plant shutdown should be initiated for inspection and corrective action when any leakage detection system indicates within a period of 24 hours or less, an increase in rate of unidentified leakage in excess of 2 gallons per minute or its equivalent. We believe this Technical Specification requirement is unnecessary for Nine Mile Point Unit 1 based on the following operating experience and plant leakage data.

Operating experience at Nine Mile Point Unit 1 indicates that we have the capability for determining the origin of unidentified leakage. As an example, on one occasion, the drywell floor drain tank chart recorder indicated a sudden increase of approximately 2 gallons per minute in unidentified leakage. The chart recorder provided a direct readout of leakage in gallons per minute as well as a level versus time readout. The operators were able to locate the origin of the unidentified leakage utilizing the station process computer. Prior to the leakage, the process computer had indicated that a possible reactor recirculation pump seal failure had occurred. This was determined by motor vibration alarms and monitoring the seal pressure and seal leakage flow. Although normal leakage from the reactor recirculation pump seals is directed to the equipment drain tanks, failure of the seal resulted in leakage to the floor drain tank. This resulted in an increase in drywell floor drain tank level. Based on information from the process computer, the operators identified the origin of the "unidentified" leakage as the reactor recirculation pump seal failure. The proposed technical specifications would have required initiation of plant shutdown upon observation of the increase in unidentified leakage. However, the latitude that our existing technical specifications provide enabled the operators to evaluate the situation and conclude that the safe operation and shutdown capability of the plant would not be compromised. The plant was safely shutdown approximately one week later to affect repairs on the pump seal.

In addition to utilizing the leakage detection systems, isotopic analyses could be performed on samples from the floor drain tank to identify the origin of the leakage. If the unidentified leakage increased at an unacceptable rate, a sample from the floor drain tank would be isotopically analyzed. If there were indications that the leakage originated from the reactor coolant pressure boundary (primary coolant), the isotopic analysis could be supplemented with a tritium analysis. The tritium analysis would determine specifically the source (i.e. primary or non-primary coolant) of the leakage.



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Conclusion

Based on historical leakage data, operating experience and analytical techniques, sufficient justification exists for not incorporating proposed NUREG-0313, Revision 1 Technical Specifications. Our current capabilities afford the operators the opportunity to assess any given situation regarding unidentified leakage. The latitude that our existing technical specifications provide enable the operators to evaluate a situation and determine the appropriate action. However, immediate station shutdown for leakage increases greater than or equal to 2 gallons per minute should not be dictated by the Technical Specifications prior to analysis. Based on the above, we feel Nine Mile Point can be operated safely without the proposed Technical Specifications and that incorporation of these technical specifications would not enhance plant or public safety.

Very truly yours,



C. V. Mangano
Vice President
Nuclear Engineering & Licensing

CVM/MTG:djm
Attachments



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