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SUBJECT: Submits response to request for addl info re proposed changes to Tech Specs for control room air treatment sys.

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May 23, 1998
NMP1L 1322

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

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

Gentlemen:

Subject: ***Response to Request for Additional Information Related to Proposed Changes to the Technical Specifications for the Control Room Air Treatment System***

By letter (NMP1L 1312), dated May 2, 1998, Niagara Mohawk Power Corporation (NMPC) transmitted an Application for Emergency Amendment to the Nine Mile Point Unit 1 (NMP1) Technical Specifications (TS) as set forth in Appendix A of Operating License DPR-63. The application contains proposed changes to Sections 3.6.2 and 4.6.2, "Reactor Protection," to incorporate modifications to the initiation circuitry for the Control Room Air Treatment System. The proposed changes remove the high radiation signal from TS Tables 3.6.21 and 4.6.21, "Control Room Air Treatment System Initiation," and add Reactor Protection System (RPS) main steam line high flow, main steam line tunnel high temperature, high drywell pressure, and low-low reactor vessel water level signals to the initiation circuitry for the Control Room Air Treatment System.

By letter (NMP1L 1320), dated May 21, 1998, NMPC responded to a Request for Additional Information (RAI) related to the proposed changes to the TS for the Control Room Air Treatment System.

The purpose of this letter is to provide information that could not be included in the previous RAI response due to time and resource constraints. Enclosed as Attachment A are restatements of each of the eight remaining items of information requested and, following each item, is the NMPC response.

Very truly yours,

John H. Mueller
Chief Nuclear Officer

JHM/CDM/awd
Attachments

xc: Mr. H. J. Miller, NRC Regional Administrator, Region I
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ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION
LICENSE NO. DPR-63
DOCKET NO. 50-220

NRC Request for Additional Information and Niagara Mohawk Power Corporation (NMPC) Responses

Request for Information #1

Are there accidents for which the radiation monitors are depended upon to initiate the control room ventilation emergency ventilation filtration system to ensure that the control room operator doses are within the limits of GDC 19?

Required Response #1

Based on current analyses, there are no accidents for which the radiation monitors are depended upon to maintain control room doses within the limits of GDC 19.

Request for Information #2

Provide a description of the MSIV and ECCS leakage pathways to the stack. Based on the historical data [provided in the May 21, 1998 RAI response], it would seem inappropriate to assume that the MSIV leakage totals 8 scfh.

Required Response #2

The NMP1 Main Steam and ECCS bypass leakage pathways are as follows:

- Main Steam Penetrations X-2A and X-2B
- Feedwater/HPCI Penetrations X-4A and X-4B
- Emergency Condenser Condensate Return Penetrations X-5A and X-5B
- Emergency Condenser Steam Supply Penetrations X-3A and X-3B

The total bypass leakage beyond secondary containment has a pre-defined acceptance criteria in accordance with the NMP-1 Appendix J Testing Program Plan.

The flow path for the above penetrations are considered tortuous because of the complex nature of the piping runs. Specific details for each penetration are as follows:

Main Steam: Flow is past the main steam isolation valves into the steam tunnel to the turbine and main condenser. These points are all located in the turbine building. Assuming no pipe failures, leakage would be primarily from the turbine/condenser seals and valve packing. Such leakage would be processed by the turbine building ventilation system and directed to the stack. Assuming a break in the main steam piping, any leakage would again be processed by the turbine building ventilation system.

Feedwater/HPCI: Flow is past the feedwater system isolation valves into the heater bays and feedwater pump trains, eventually terminating in the condenser hotwell. All this piping is in the turbine building. Assuming no pipe failures, the lines would be filled with water and all leakage would be through valve packing and pump seals. Such leakage would be processed by the turbine building ventilation system. Assuming a break in the feedwater piping, any leakage would again be processed by the turbine building ventilation system.

Emergency Condenser (Steam Supply and Condensate Return): All system piping is in the reactor building. However, the system vent and drains consist of small bore piping (1" NPS) connected to the main steam system, outboard of the isolation valves. Once past the isolation valves, the flow path is the same as that described for Main Steam above.

The value of 8 scfh was not assumed for MSIV leakage. All dose contributors, including a bypass leakage of 50 scfh, were used to calculate the control room dose. Based on the results of the calculation, the total dose was below the GDC 19 limits. The inservice inspection program and the 10CFR50, Appendix J program are designed to maintain total bypass leakage less than 42 scfh.

Request for Information #3

Is a revised Unit 1 MSLB analysis to be performed because the quantity of steam released during hot standby was greater than at full power and the analysis had been performed assuming full power?

Required Response #3

The steam release rate for a MSLB at hot standby conditions is less than for full power conditions.

Request for Information #4

In order to complete [the] review of the [Rod Drop] accident, the following information is needed:

- the number of fuel rods in the Unit 2 core, and
- the condenser free air volume for both Units 1 and 2.

Required Response #4

Although Nine Mile Point Unit 2 (NMP2) is going to all 9 x 9 fuel, the current fuel handling accident analysis assumes all 8 x 8 fuel because the doses are bounding. A larger fraction of core activity is released from an 8 x 8 fuel accident than from a 9 x 9 fuel accident. An 8 x 8 core contains 47,368 fuel rods.

The main condenser free air volume for NMP1 is 85,000 ft^3 and the main condenser free air volume for NMP2 is 97,000 ft^3.

Request for Information #5

Is the control room equipped with area radiation monitors?

Required Response #5

The main control room is equipped with one area radiation monitor.

Request for Information #6

What is the basis for assuming a reactor coolant activity level of 9.47 μCi/g total iodine in the Small Break LOCA analysis? The current technical specification value is 25 μCi/g. Do you intend to submit a technical specification change to revise the limit or to reinstate dependence on the radiation monitors?

Required Response #6

NMPC is submitting, under separate cover, a revision to Section 3.2.4 of the NMP1 Technical Specifications. The revision proposes to change the reactor coolant activity limit for total iodine from the current value of 25 μCi/g to the proposed value of 9.47 μCi/g. This more conservative limit for total iodine provides assurance that the control room doses for the limiting Small Break LOCA will remain within GDC 19 limits.

Request for Information #7

Explain the use of 95% filter efficiency for elemental iodine versus the Technical Specification test requirement of ≥90%.

Required Response #7

The reactor building emergency ventilation elemental iodine filter efficiency of 95% was used to be consistent with the NMP1 LOCA analysis. The filters are tested at 95% relative humidity and the majority of the test results show that the elemental iodine removal efficiency is greater than 99%. Regulatory Guide 1.52 allows credit for assigning 95% removal efficiency as long as the relative humidity is ≤70%. The reactor building emergency ventilation system contains a 10kw heater which maintains the relative humidity ≤70%. Therefore, an assumption of 95% efficiency for elemental iodine was assumed. NMPC will conduct an analysis supporting use of 90% efficiency for elemental iodine.

Request for Information #8

Discuss the use of 22 psig rather than 35 psig for the bypass leakage dose calculation.

Required Response #8

Figure XV-56E of the NMP1 UFSAR shows that in the first 10^5 seconds of a LOCA, the drywell is above 22 psig for less than 100 seconds. Furthermore, using 22 psig is more conservative than 35 psig given the method of input into the DRAGON computer code. That is, for saturated steam conditions, 1 scf of saturated steam at 22 psig has a volume of 0.548 cf. If 35 psig had been used, 1 scf would have equalled approximately 0.415 cf. For input to DRAGON, the leakage is input as a fraction of the primary containment volume. Therefore, the 22 psig leakage case results in a larger volume fraction being released per day than the 35 psig leakage case and results in greater dose per scfh.