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SUBJECT: Forwards addl info re NRUEG-0737 Item II.B.1, "RCS Vents," in response to 820126 request.

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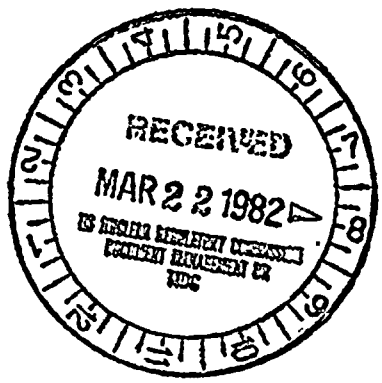
March 16, 1982



Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing
Office of Nuclear Regulatory Regulation
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 of January 26, 1982 requested additional information regarding NUREG 0737 Item II.B.1, "Reactor Coolant System Vents". The enclosed information is provided in response to your request.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

Donald P. Dise
Vice President - Engineering

RP:bd

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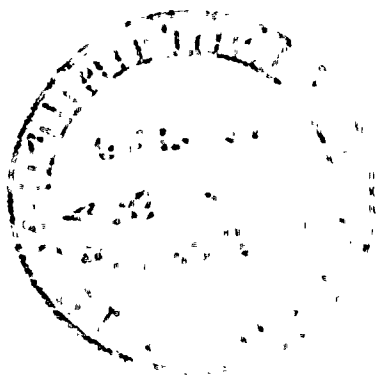

REQUEST FOR ADDITIONAL INFORMATION
NINE MILE POINT 1
NUREG 0737 Item II.B.1 Reactor Coolant System Vents

Question 1:

Identify any systems or equipment containing high points which may need venting (for example, the RHR heat exchanger) to maintain adequate core cooling. Describe the methods and indications used to identify the need to vent, the equipment used to vent, and the vent flow path, and discharge area of each of the above identified vents.

Response:

As indicated by our March 31, 1981 correspondence, the reactor coolant system and the reactor vessel head will be vented utilizing the existing relief valves and the reactor head vent system. Additionally, as outlined in our March 31, 1981 letter, the modification to the emergency condenser vent to provide the capability to vent non-condensible gases to the torus under accident conditions has been completed. No other system at Nine Mile Point has been identified as requiring venting to maintain adequate core cooling.

Question 2:

If it were necessary to use the reactor vessel head vents in order to maintain adequate core cooling post-LOCA, discuss the guidelines the operator would follow to use these vents including:

a) When to vent or not vent considering combustible gas concentration in containment,
b) Potential single failures in the vent path, including the failure of a valve to close,
c) The effect of vent discharge on surrounding equipment.

Response 2:

Emergency procedure guidelines for operators use of the vents have been submitted in accordance with NUREG 0737, Requirement I.C.1 as indicated by our March 31, 1981 letter. Detailed procedures will be developed after the guidelines are reviewed and approved by the Nuclear Regulatory Commission.

a) The primary containment at Nine Mile Point is normally inerted to maintained O_2 concentration below 4%. In addition, the containment atmosphere dilution (CAD) system would be available in a post-LOCA situation to maintain O_2 concentration below 4%. Monitoring of the containment H_2 and O_2 concentration is accomplished utilizing installed instrumentation. In the event the reactor head vent system or electromatics are utilized to vent the reactor vessel to the containment, the operator will be able to monitor containment atmosphere changes and maintain containment oxygen concentrations to below combustible limits.

Response 2: (cont'd)

b) Head vent valve motors are powered from powerboard #171B which receives power from the off-site 115 kV system or in the event of loss of 115 kV supply from Emergency Diesel Generator 103. Failure of one of the two reactor head vent isolation valves will not prevent isolation of the system if required. The electromatic relief valves are also supplied with emergency power. Operation of either the reactor head vent system or solenoid actuated relief valve will provide a vent path for the reactor vessel if required.

c) The reactor head vent system discharges to the drywell equipment drain sump, at a point below water, which will not result in any adverse effect on surrounding equipment. The sump is located below the reactor vessel in the drywell. The relief valves vent directly to the torus at a point below the water level of the torus.

Question 3:

The following items apply to the modified portions of the emergency condenser vent system that form a part of the reactor coolant pressure boundary, up to and including the second normally closed valve (reference NUREG-0737 Item II.B.1 Clarification A.(7)):

a. Provide the design temperature and pressure of the piping, valves, and components.

b. Verify that the piping, valves, components, and supports are classified Seismic Category 1 and Safety Class 2 (Safety Class 1 where the size corresponds to the 10 CFR Part 50 Appendix A definition of a loss-of-coolant accident).

c. Describe the instrumentation that has been provided to detect and measure emergency condenser vent system isolation valve seat leakage (reference Appendix A to 10 CFR Part 50, General Design Criteria 30).

d. Describe the materials of construction and verify that they are compatible with the reactor coolant chemistry and will be fabricated and tested in accordance with SRP Section 5.2.3, "Reactor Coolant Pressure Boundary Materials".

e. Provide the source of power to each emergency condenser vent valve in order to verify that the vent valves are powered from emergency buses and different vent paths are powered from different emergency buses (references NUREG-0737 Item II.B.1 Changes (4) and Clarifications A.(8) and B.(2)).

f. Verify that operability testing of the emergency condenser vent system valves will be performed in accordance with subsection IWV of Section XI of the ASME Code for Category B valves (reference NUREG-0737 Item II.B.1 Clarification A.(11)).

Response 3:

The modified portion of the emergency condenser vent system included the relocation of existing isolation valves and the installation of two emergency condenser vent to torus blocking valves, as well as associated piping.

a) The design conditions for the piping, valves and components:

Design Pressure - 1200 psig
Design Temperature - 575°F

b) The classification of the piping valves, components and supports is ASME Section III, Division I - Subsection NC, Class 2 components and Subsection NF, component supports with seismic analysis in accordance with the NMPC FSAR. The quality requirements are classified to USNRC 10 CFR50, Appendix B.

c) No specific instrumentation has been or planned to be provided to detect and measure emergency condenser vent to the torus blocking valve seat leakage. Any valve seat leakage would be directed to the torus. Periodic sampling of the torus water and monitoring of torus water temperature would provide indications of potential valve seat leakage.

d) The materials of construction for reactor coolant pressure boundary for this modification are as follows:

1. Existing valves which were relocated,
   Body Material - ASTM A-182, Gr. F11
   Stem & Disc. - ASTM A-182, Gr. F6

2. New valves installed,
   Body Material - ASME SA105
   Stem - ASME SA564, Gr. 630
   Plug - AMS5385 (Stellite 21)

3. New piping is ASTM A-106, Gr. B, Schedule #80 (carbon steel)

Design, fabrication, installation and testing associated with the subject work package was performed in accordance with ASME Section III, Division I - Subsection NC, Class 2 components.

The reactor coolant system at Nine Mile Point, is not designed to use additives and a neutral pH is maintained. Coolant chemistry limits are established by the plant technical specifications.

e) The emergency condenser vent to torus blocking valve motors are powered from powerboard #167 which receives power from the off-site 115 kV system or in the event of total loss of the 115 kV supply from either emergency diesel generator #102 or 103.

Response 3: (cont'd)

f) The newly installed Emergency Condenser to torus blocking valves are currently being evaluated with respect to the Nine Mile Point Pump and Valve In-service Inspection Program and if approximate will be included in the next revision to the program.

Question 4:

Guidelines for operator use of the vents, including information and instrumentation available to the operator for initiating or terminating vent usage (reference Position (2)).

Response:

The physical operation of the emergency condenser vent to torus blocking valves is currently described in N1-OP-13. However, in accordance with the implementation requirement for this action plan item the procedure will not be implemented and the valves have been placed in a condition so as to minimize the potential for inadvertent actuation pending NRC staff approval of the modification.

Guidance to the operator for post-LOCA emergency condenser venting will be developed from the emergency procedures discussed above. It will include information for initiation or termination of vent usage as well as the instrumentation available for operator use.