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VASSALLO,D.B. Operating Reactors Branch 2

SUBJECT: Forwards info re implementation of NUREG-0313,Rev 1,in response to 821108 request.

SEE REPTS. #8301040638

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NIAGARA MOHAWK

NIAGARA MOHAWK POWER CORPORATION/300 ERIE BOULEVARD WEST, SYRACUSE, N.Y. 13202/TELEPHONE (315) 474-1511

December 30, 1982

Director of Nuclear Reactor Regulation
Attn: Mr. Domenic 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 20, 1982 indicated that a response would be provided by January 1, 1983. Attached is our response to your request.

Very truly yours,

cvmangan

C. V. Mangan
Vice President, Nuclear Engineering
and Licensing

CVM/MG:bd

Attach.

A001

Response to Request for Information
Implementation of NUREG-0313, Revision 1

Question 1. Unidentified Leakage Monitoring (IV.B.1 of NUREG-0313, Rev. 1):

a. Identify the methods to detect and monitor unidentified leakage in the pressure boundary piping of your BWR. Some of these methods are enumerated in Regulatory Guide 1.45, Paragraph B.

Response: Unidentified pressure boundary piping leakage is detected and monitored by the drywell floor drain tank. Existing technical specifications limit the unidentified leakage to 5 gpm.

The primary means of determining the unidentified reactor coolant leakage rate is by monitoring the rate of rise in the level of the drywell floor drain tank. The signals produced by the rate of rise instrumentation are processed for level versus time and rate of change. Both processes are recorded in the control room. The rate of change process provides a direct readout of leakage in gpm on the chart recorder. Daily checks are made that no alarms have been actuated due to high leakage.

A second method is also used to determine the reactor coolant leakage rate. This method monitors the time required to fill the tank between two pre-determined levels. Redundant high and low-level sensors are provided on the floor drain tank. When an increasing level in the tank reaches the low-level sensor setting, a timer will start and operate for a preset time interval. If the timer times out before the high-level sensor setting is reached, indicating a leakage rate within allowable limits, no action will result, and the system resets for the next filling and time cycle. The system reset is accomplished by pumping the water out until the level is below the low level sensor setting.

If the high-level setting is reached before the timer resets, an alarm is actuated, indicating a leak rate above the predetermined limit. At this time, the operator can read the elapsed time on the timer, giving the time required to fill the tank between the two preset levels. Knowing the volume between these two levels and the time interval, the leakage rate can be determined.

Additional information is available to the operator which can be used for the daily leakage check if the various drywell sump level alarms are out of service. The integrated flow pumped from the sumps to the waste disposal system can be checked.

Qualitative information is also available to the operator in the form of indication of drywell atmospheric conditions. Continuous leakage from the primary coolant system would cause an increase in drywell temperature. Any leakage in excess of 15 gpm of steam would cause a continuing increase in drywell pressure with resulting scram.

Question: 1b. Complete the attached table of information regarding the systems identified in the above paragraph.

Response: The information requested is provided on the attached table.

Question: 1c. Discuss the sensitivity of these systems for detecting unidentified leakage.

Response: The rate of rise instrumentation is the primary means of detecting unidentified leakage because of its sensitivity. The signals from this instrumentation are processed in two ways. The rate of change process has a sensitivity of approximately 0.25 gpm in 2 minutes. The sensitivity for the level versus time process is such that for inflows of one gpm, changes on the order of 0.2 gpm can be detected within 40 minutes. At inflows between one and five gpm, changes on the order of 0.5 gpm can be detected in eight minutes.

The sensitivity of the timer leak detection system is based on the following volume and respective time interval required for normal filling of the tank.

	Approximate Volume in Gallons Between Level Probes	Time in Minutes to Fill With Flow Rate
Drywell Floor Drain Tank	90	18 min @ 5 gpm

Table 1b

INFORMATION REQUESTED ON LEAK DETECTION SYSTEM

Type of System	(1) Is System Operable (yes/no)	(2) Leak Rate Sensitivity (gpm)	(3) Time Required To Achieve Sensitivity (hours)	(4) Is System Functional After SSE (yes/no)	(5) Control Room Indications (alarms) (recorders)	(6) Calibration or Testing During Operation (yes/no)	(7) Documentation Reference for (1) Thru (6)
Rate of Rise (Level vs. Time)	Yes	For inflows of 1 gpm: 0.2 gpm For inflows of 1-5 gpm: 0.5 gpm	.66 hours .13 hours	No	A Alarm-High Level B Recorder	Yes (Daily checks)	First and Fifth Supplement to Final Safety Analysis Report and the Technical Specifications
Rate of Rise (rate of change)	Yes	0.25 gpm	0.03 hours	No	A Alarm-High Rate B Recorder	Yes	Niagara Mohawk Procedure - Drywell Floor Drain Rate of Rise Instrument Channel Calibration
Timer (with level sensor)	Yes	5.0 gpm	0.30 hours	No	A Alarm-High Level	Yes	First and Fifth Supplement to Final Safety Analysis Report and the Technical Specifications

Question 2. Augmented ISI of Nonconforming Service Sensitive Pipe:

a. Identify the methods for augmented ISI of the nonconforming service sensitive pipe (IV.B.3 of NUREG-0313 Rev. 1).

Response: The methods used to examine augmented piping are those specified in paragraph (g), "Inservice Inspection Requirements", of 10 CFR 50.55a, "Codes and Standards".

Question 2b. Provide a copy of the specifications for the augmented ISI method or methods (IV.B.3 of NUREG-0313 Rev. 1)

Response: A copy of each of the procedures used for augmented ISI examinations is provided in Attachment 1.

Question 2c. Identify each of the augmented ISI methods used and the training and certification levels the individuals using those methods received. Indicate if cracked specimens are used in your training (IV.B.3 of NUREG-0313 Rev. 1).

Response: Personnel performing nondestructive examinations are trained, examined and certified in accordance with the recommended practice and requirements of the American Society for Nondestructive Testing, Document SNT-TC-1A, 1975 Edition.

1) Ultrasonic Examinations: Ultrasonic (UT) examinations are performed by a certified team consisting of two examiners. The minimum requirement for a team is one UT Level II and one UT Level I. Reported indications are dispositioned by a UT Level III. In the case of Ultrasonic Examinations of Stainless Steel Piping for Intergranular Stress Corrosion Cracking, examiners receive forty hours of training prior to performing examinations. A portion of this training is conducted on cracked specimens.

2) Liquid Penetrant Examinations: Liquid penetrant (PT) examinations are performed by a PT Level II. Reported indications are dispositioned by a PT Level III. Training and certification is conducted on cracked specimens.

Question 2d. Identify the proportion of the nonconforming service sensitive pipe that is being inspected (IV.B.2.b of NUREG-0313 Rev. 1).

Response: The Augmented Inservice Inspection Program Plan is being revised to include modifications made to the plant during the current outage and to incorporate the requirements of Revision 1 to NUREG 0313. This revision will specifically identify the nonconforming service sensitive piping to be inspected. When the revision is completed we will submit the requested information to your staff.

Question 2e. Identify the inspection interval of each system of the nonconforming service sensitive pipe (IV.B.2.b of NUREG-0313 Rev. 1).

Response: The inspection interval is in accordance with NUREG 0313, Revision 1 (i.e. every refueling outage).

Question 2f. Identify the Stress Rule Index Numbers if available for the welded joints in the nonconforming service sensitive pipe (I.V.B.L.b(6) of NUREG-0313 Rev. 1).

Response: The Stress Rule Index Numbers are not available at this time. When the Stress Rule Index Numbers become available they will be submitted to your staff.

Question 3. Augmented ISI of Nonconforming Nonservice Sensitive Piping:

a. Identify the methods for augmented ISI of the nonconforming nonservice sensitive piping (IV.B.3 of NUREG-0313 Rev. 1).

Response: The response to this question is provided in the response to Question 2(a).

Question 3b. Provide a copy of the specifications for the augmented ISI method or methods (IV.B.3 of NUREG-0313 Rev. 1).

Response: The response to this question is provided in the response to Question 2 (b).

Question 3c. Identify each of the augmented ISI methods used and the training and certification levels the individuals using those methods received. Indicate if cracked specimens are used in your training (IV.B.3 of NUREG-0313 Rev. 1).

Response: The response to this question is provided in the response to Question 2 (c).

Question 3d. Identify the proportion of the nonconforming nonservice sensitive piping that is being inspected (IV.B.2.b of NUREG-0313 Rev. 1).

Response: The Augmented Inservice Inspection Program Plan is being revised to include modifications made to the plant during the current outage and to incorporate the requirements of Revision 1 to NUREG-0313. This revision will specifically identify the nonconforming nonservice sensitive piping to be inspected. When the revision is completed we will submit the requested information to your staff.

Question 3e. Identify the Stress Rule Index Numbers (if available) for the welded joints in the nonconforming nonservice sensitive piping (IV.B.1.b(6) of NUREG-0313 Rev. 1).

Response: The response to this question is provided in the response to Question 2 (f).

Question 3f. Identify the proposed inspection interval for each system of nonconforming nonservice sensitive piping (IV.B.1.b of NUREG-0313 Rev. 1).

Response: The current inspection interval is a 60 month period. This is more conservative than the interval specified in NUREG-0313, Revision 1 (i.e. over an 80 month period).

Question 4. Coolant Leakage (IV.B.1.b.(2) of NUREG-0313 Rev. 1):

NUREG-0313 Rev. 1 requires 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, or when the total unidentified leakage attains a rate of 5 gallons per minute or its equivalent, whichever occurs first. For sump level monitoring systems with fixed-measurement interval method, the level should be monitored at 4-hour intervals or less.

You are requested to forward Technical Specifications which incorporate the above in the Technical Specifications for your facility or provide justification for continued plant operation without such Technical Specifications. Should justification be provided, plant leakage data and/or operating experience should be included.

Response: An analysis is currently being performed to provide justification for continued plant operation without the above described Technical Specifications. Our current schedule is to have this analysis completed by February 15, 1983. Upon completion of this analysis, the results will be submitted to your staff.

Attachment 1

1. Liquid Penetrant Examination Procedure

2. Ultrasonic Examination General Requirements

3. Ultrasonic Examination of Stainless Steel Piping for Intergranular Stress Corrosion Cracking (IGSCC)

4. Ultrasonic Examination Procedure for Nozzle to Safe End Welds

5. Program Plan Book for Augmented Inservice Inspection of Austenitic Stainless Steel Piping Within the Reactor Coolant Pressure Boundary per NUREG 0313.