NOV 8 - 1982

Docket No. 50-259
50-260
50-296

Mr. Hugh G. Parris
Manager of Power
Tennessee Valley Authority
500 A Chestnut Street, Tower II
Chattanooga, Tennessee 37401

Dear Mr. Parris:

SUBJECT: RESPONSE TO GENERIC LETTER 81-04 ON IMPLEMENTATION OF NUREG-0313, REV. 1

Our Generic Letter 81-04 to all BWR licenses dated February 26, 1981 requested you to review all ASME Code Class 1 and 2 pressure boundary piping, safe ends and fitting material at your BWR facilities to determine if it meets the material selection, testing and processing guidelines set forth in NUREG-0313, Rev. 1, a copy of which was enclosed with the generic letter. The letter requested that you propose a schedule to: 1) identify to us any materials that do not meet the guidelines, 2) implement the augmented inservice inspection requirements specified in Section IV of NUREG-0313, Rev. 1, 3) discuss your plans to replace (to the extent practicable) nonconforming materials and 4) install more sensitive, diverse leak detection systems. Our generic letter offered the option of providing a description, schedule and justification for alternative actions that would reduce the susceptibility of pressure boundary piping and safe ends to intergranular stress corrosion cracking (IGSCC).

Based on our review of your response to our Generic Letter 81-04, we have determined that we need the additional information identified in the enclosure to this letter. In view of recent developments regarding pipe cracking in BWRs, we request that you respond within 30 days of receipt of this letter. We also request that you send a copy of your response directly to our contractor:

EG&G Idaho, Inc.
P. O. Box 1625
Idaho Falls, Idaho 83415
ATTN: Mr. Wayne Roberts

OFFICE ▶							
SURNAME ▶							
DATE ▶							

This request for information is specific to one licensee. Therefore, OMB clearance is not required for this request under P. L. 96-511.

If you have any questions, please contact your Project Manager, (D. Clark) at 301-492-7162.

Sincerely,

Original signed by
D. B. Vassallo

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Enclosure:
Request for Additional
Information

cc w/enclosure:
See next page

DISTRIBUTION:
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ACRS (10)

OFFICE	ORB #2	ORB #2	ORB #2				
SURNAME	Norris	D. Clark/tcm	Vassallo				
DATE	10/1 /82	10/28/82	10/ 8 /82				

Mr. Hugh G. Parris

cc:

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Request for Additional Information
Implementation of NUREG-0313, Rev. 1
Browns Ferry Nuclear Plant, Units 1, 2 and 3
Docket Nos. 50-259, 50-260 and 50-296

The following questions refer to the L. M. Mills to R. Denton letter and attachment of July 2, 1981.

1. Leakage Detection System. (IV.B.1.a of NUREG-0313 Rev. 1)

   Provide documentation "that the existing requirement of less than 5 GPM unidentified leakage is sufficent to detect any significant leak due to pipe cracking".

2. 20-inch Stainless RHR Valves (IV.B.1.b(1) of NUREG-0313 Rev. 1)

   NUREG-0313, Revision 1 indicates that 5% delta ferrite in cast stainless steel (SS) is acceptable corrosion-resistant material. However, unstabilized wrought stainless steel is not an acceptable corrosion-resistant material. If the cast RHR SS valves are welded to unstabilized wrought SS, then the heat affected zone (HAZ) of the unstabilized wrought SS will be susceptible to IGSCC, and that HAZ would have to be inspected per paragraph IV. B.1.b(10 of NUREG-0313 Revision 1. Please provide the following information:

   a. Identify the material to which the RHR castings are welded. This should include material chemical composition, and manner of fabrication (wrought or cast).

   b. Provide chemical composition data, information from the literature, or results from metallographic examination that confirm the ferrite content of the RHR cast SS valves.

3. 28-inch Diameter Recirculation Outlet Nozzle Safe End Welds. (IV.B.1.b(1) of NUREG-0313 Rev. 1).

   Provide documentation that a stress rule index (SRI) value of 1.2 is the threshold value below which the failure rate due to IGSCC is zero.

4. Sampling plans in the 28-inch recirculation piping, the 22-inch recirculation piping manifold, 24-inch RHR return lines and 20-inch RHR supply lines. (IV.B.1.b.2(d) of NUREG-0313 Rev. 1)

   You have indicated inspection criteria for the above piping systems. If the number of welds having SRI values 1.2 or greater exceeds 25% of the total welds, will all those welds be inspected?

5. ASME Code Class 2 SS Piping Systems. (IV.B.1.b(3) and IV.B.1.b(4) of NUREG-0313, Rev. 1).

   Please provide the following data on the ASME Code Class 2 SS Piping Systems.

   a. Provide specifications for the chemistry of the contained fluid.

b. Provide the intervals for the periodic sampling and testing of the contained fluid.

6. Dissimilar metal welds in the replaced lines at the core spray nozzles (IV.B.2.b(1) of NUREG-0313, Rev. 1).

   Identify the material to which weld butter has been applied. Provide the chemical composition and heat treatment.

7. CRD Nozzle Cap Dissimilar Metal Weld (IV.B.2.b.(2) of NUREG-0313 Rev. 1)

   Please identify the material to which the weld butter has been applied. Provide the chemical composition and heat treatment.

8. ASME Code Class 1 Service Sensitive Piping: 12-inch diameter recirculation riser lines, 6-inch diameter reactor water cleanup including sweepolets, and 6-inch diameter head spray lines. (IV.B.2.b(3) of NUREG-0313 Rev. 1)

   Please provide data to substantiate your treatment of the above service sensitive pipes as nonservice sensitive pipes. In particular, please provide technical justification for your selection process and inspection intervals.

9. Recirculation inlet nozzle safe end crevices (IV.B.2.b(4) of NUREG-0313 Rev. 1)

   Please provide data to substantiate your belief that inspecting 25% of the crevices meets the intent of NUREG-0313 Rev. 1.

10. 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.

    b. Please fill out the attached table of information regarding the systems identified in the above paragraph.

11. Augmented ISI of Nonconforming Service Sensitive Pipe

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

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

    c. 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).

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

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

f. Identify the Stress Rule Index Numbers for the welded joints in the nonconforming service sensitive pipe (IV.B.1.b (6) of NUREG-0313 Rev. 1).

12. Augmented ISI of Nonconforming Nonservice Sensitive Piping

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

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

c. 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).

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

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

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

13. 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.

Please provide technical justification for not including this in your Technical Specifications. This justification should be include data or operating experience.

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)