

Non-Agreement State

Event # 51181

Rep Org: ELECTRIC POWER RESEARCH INSTITUTE		Notification Date / Time: 06/25/2015 15:40 (EDT)	
Licensee: ELECTRIC POWER RESEARCH INSTITUTE		Event Date / Time: 05/01/2015 (EDT)	
Last Modification: 06/25/2015			
Region: 1	Docket #:		
City: CHARLOTTE	Agreement State: Yes		
County:	License #:		
State: NC			
NRC Notified by: TRACY WILSON		Notifications: JOHN ROGGE	R1DO
HQ Ops Officer: DONG HWA PARK		KATHLEEN O'DONOHUE	R2DO
Emergency Class: NON EMERGENCY		VIVIAN CAMPBELL	R4DO
10 CFR Section:			
21.21(a)(2) INTERIM EVAL OF DEVIATION			

PART 21 - DEVIATION IN NOZZLE MODELING INTERNAL REPORTS

The following was received via facsimile:

"[This report pertains] to a deviation in a basic product (EPRI nozzle modeling internal reports) supplied by EPRI (Electric Power Research Institute) regarding Westinghouse Pressurizer Head Nozzle Inner Corner Region Ultrasonic Inspections. EPRI will complete all evaluation efforts and provide a determination of reportability in accordance with 10CFR Part 21 no later than July 24, 2015.

"EPRI has conducted an evaluation to the basic product's actual use and determined that the ASME examination volume coverage for at least one of the pressurizer nozzles has changed and is now 90 percent or less. A 90 percent threshold is required by ASME Boiler & Pressure Vessel Code, Section XI.

"Design inputs used in EPRI modeling for ultrasonic scanning coverage for nuclear safety related component nozzles may have been inaccurate. In some cases, the upper and lower heads of Westinghouse pressurizers can be offset from the center of each nozzle (spray, safety, relief, surge). This offset results in a change in the thickness of the pressurizer head as compared to an on-axis pressurizer head with the same radial dimensions. Some of the computer models EPRI used to describe these pressurizer heads did not account for an increase in the thickness due to these offsets. As a result, in some cases the ultrasonic inspection parameters produced by these computer models may have produced inaccuracies in the examination volume coverage calculations.

"In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

TEI9
NRR

Utility Name/Plant Name
Exelon Corporation / Ginna
First Energy Nuclear Operating / Beaver Valley 1
Entergy / Indian Point 2
Entergy / Indian Point 3
Pacific Gas & Electric Co. / Diablo Canyon Unit 2
Dominion Generation / North Anna

"EPRI has reviewed the pressurizer upper and lower head drawings for the nozzles that it has modeled and determined if these offsets are present. For those cases that are potentially affected EPRI has recalculate the new examination volume coverage for the nozzle inspection detection techniques and provided this information to the corresponding licensees.

"EPRI staff shall develop a matrix or table to better define the necessary design inputs for computer modeling of nozzles. This should also include a question to the utility regarding any obstructions or thickness changes which would impact the ultrasonic inspection parameters. EPRI staff shall improve its documentation for review and approval of design inputs for computer modeling. Consideration shall also be given to including a review of design inputs by the member along with an acknowledgement from the member that the design inputs are appropriate for use. EPRI staff shall consider methods of including additional conservatism to the modeling results to better accommodate changes which may be observed in the field. The project quality plan and quality project instruction shall be updated as necessary to accommodate or clarify these improvements. Completion commitment date - 10/27/2015

"The coverage calculations indicated in the notification letters would likely increase if the EPRI modeled scan plans are exceeded and or if additional inspection angles were implemented. Conversely, these coverage calculations would likely decrease if physical field limitations prevented the ultrasonic probe from executing the EPRI modeled scan pattern. It is on this basis that recipients of this letter must evaluate the condition pursuant to 10 CFR Part 21.21 to determine if it could represent a substantial safety hazard reportable under 10 CFR Part 21."

EPRIELECTRIC POWER
RESEARCH INSTITUTE

FAX Transmittal

To:	Daumert Control Desk	Date:	6.25.15
Company:	U.S. NRL	Fax:	301-816-6151
From:	Neil Wilmsburg	Page 1 of 7	
Phone:	704-545-2600	Fax:	704-545-2862

Message

Dear Sir

Please find attached a letter regarding
Part 21- 60 Day Interim Report Notification.

Thank you,
Tracy Wilcox



NEIL WILMSHURST
Vice President and
Chief Nuclear Officer

June 25, 2015

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

**Subject: Part 21 - 60 Day Interim Report Notification:
Westinghouse Pressurizer Head Nozzle Inner Corner Region Ultrasonic Inspections**

Dear Sir:

This letter provides an interim report in accordance with 10 CFR Part 21.21 pertaining to a deviation in a basic product (EPRI nozzle modeling internal reports) supplied by EPRI (Electric Power Research Institute) regarding Westinghouse Pressurizer Head Nozzle Inner Corner Region Ultrasonic Inspections.

EPRI will complete all evaluation efforts and provide a determination of reportability in accordance with 10CFR Part 21 no later than July 24, 2015.

The information required for this Interim Report per 21.21(a)(2) is provided in the following attachments.

If you have any questions, please contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Neil W.", is located below the "Sincerely," text.

Together . . . Shaping the Future of Electricity

CHARLOTTE OFFICE

1300 West W.T. Harris Boulevard, Charlotte, NC 28262-8550 USA • 704.595.2000 • Fax 704.595.2860
Customer Service 800.313.3774 • www.epri.com

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Attachment 1 U.S. Plants Potentially Affected	
Utility Name	Plant Name
Exelon Corporation	Ginna
First Energy Nuclear Operating	Beaver Valley 1
Entergy	Indian Point 2
Entergy	Indian Point 3
Pacific Gas & Electric Co.	Diablo Canyon Unit 2
Dominion Generation	North Anna

NOTE: Calculations for another six plants resulted in changes to certain examination coverage calculations, but not to levels below the 90% threshold. EPRI has sent Information Notices to these plants. A third group of plants had no changes.

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Attachment 2
Potential Part 21 Reporting Information

(i) Name and address of the individual or individuals informing the Commission.

Neil M. Wilmshurst
Vice President and CNO
Electric Power Research Institute
1300 West WT Harris Blvd | Charlotte NC 28262-2867

(ii) Identification of the facility, the activity, or the basic component supplied for such facility which fails to comply or contains a defect.

EPRI has conducted an evaluation to the basic product's actual use and determined that the ASME examination volume coverage for at least one of the pressurizer nozzles identified in this letter has changed and is now 90% or less. A 90% threshold is required by ASME Boiler & Pressure Vessel Code, Section XI.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

EPRI supplied the basic product (report) to the licensees listed in Table 1 from 2010 to the present.

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

Design inputs used in EPRI modeling for ultrasonic scanning coverage for nuclear safety related component nozzles may have been inaccurate. In some cases, the upper and lower heads of Westinghouse pressurizers can be offset from the center of each nozzle (spray, safety, relief, surge). This offset results in a change in the thickness of the pressurizer head as compared to an on-axis pressurizer head with the same radial dimensions (see examples in Attachment 3). Some of the computer models EPRI used to describe these pressurizer heads did not account for an increase in the thickness due to these offsets. As a result, in some cases the ultrasonic inspection parameters produced by these computer models may have produced inaccuracies in the examination volume coverage calculations.

(v) The date on which the information of such defect or failure to comply was obtained.

An EPRI Corrective Action Report (CAR 2015-0032) was initiated on 1 May 2015.

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of these components in use at, supplied for, being supplied for, or may be supplied

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for, manufactured, or being manufactured for one or more facilities or activities subject to the regulations in this part.

See Table 1.

(vii) The corrective action, which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

EPRI has reviewed the pressurizer upper and lower head drawings for the nozzles that it has modeled and determined if these offsets are present. For those cases that are potentially affected EPRI has recalculate the new examination volume coverage for the nozzle inspection detection techniques and provided this information to the corresponding licensees.

EPRI staff shall develop a matrix or table to better define the necessary design inputs for computer modeling of nozzles. This should also include a question to the utility regarding any obstructions or thickness changes which would impact the ultrasonic inspection parameters. EPRI staff shall improve its documentation for review and approval of design inputs for computer modeling. Consideration shall also be given to including a review of design inputs by the member along with an acknowledgement from the member that the design inputs are appropriate for use. EPRI staff shall consider methods of including additional conservatism to the modeling results to better accommodate changes which may be observed in the field. The project quality plan and quality project instruction shall be updated as necessary to accommodate or clarify these improvements. Completion commitment date – 10/27/2015

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

The coverage calculations indicated in the notification letters would likely increase if the EPRI modeled scan plans are exceeded and or if additional inspection angles were implemented. Conversely, these coverage calculations would likely decrease if physical field limitations prevented the ultrasonic probe from executing the EPRI modeled scan pattern. It is on this basis that recipients of this letter must evaluate the condition pursuant to 10 CFR Part 21.21 to determine if it could represent a substantial safety hazard reportable under 10 CFR Part 21.

(ix) In the case of an early site permit, the entities to whom an early site permit was transferred.

This is not an early site permit concern.

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Attachment 3

Westinghouse Pressurizer Head Nozzle Inner Corner Region Ultrasonic Inspections – Supporting Figures

Figure 1 below contains a sketch of a typical Westinghouse pressurizer upper head indicating that the outside surface is offset from the center of the inside surface and the center of each safety-relief and spray nozzle. The ASME Section XI Class 1 examination volume is also identified in this figure.

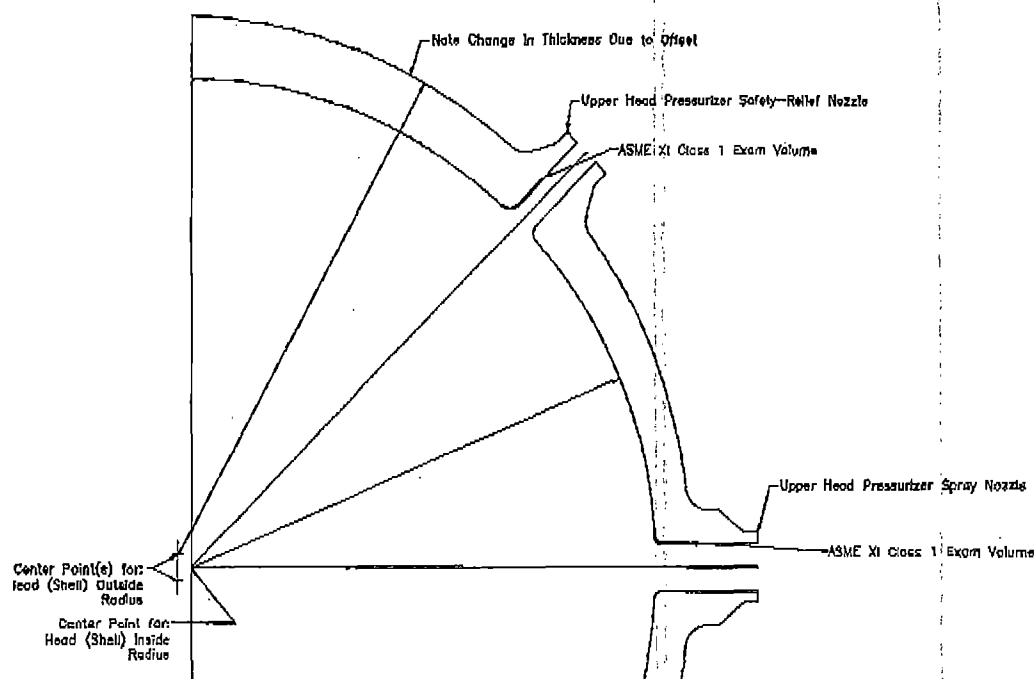


Figure 1. Westinghouse Pressurizer Upper Head Sketch with Offsets

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Attachment 3 (cont)

Figure 2 below contains a sketch of a typical Westinghouse pressurizer lower head indicating that the outside surface is offset from the center of the inside surface and the center of the surge nozzle. The ASME Section XI Class 1 examination volume is also identified in this figure.

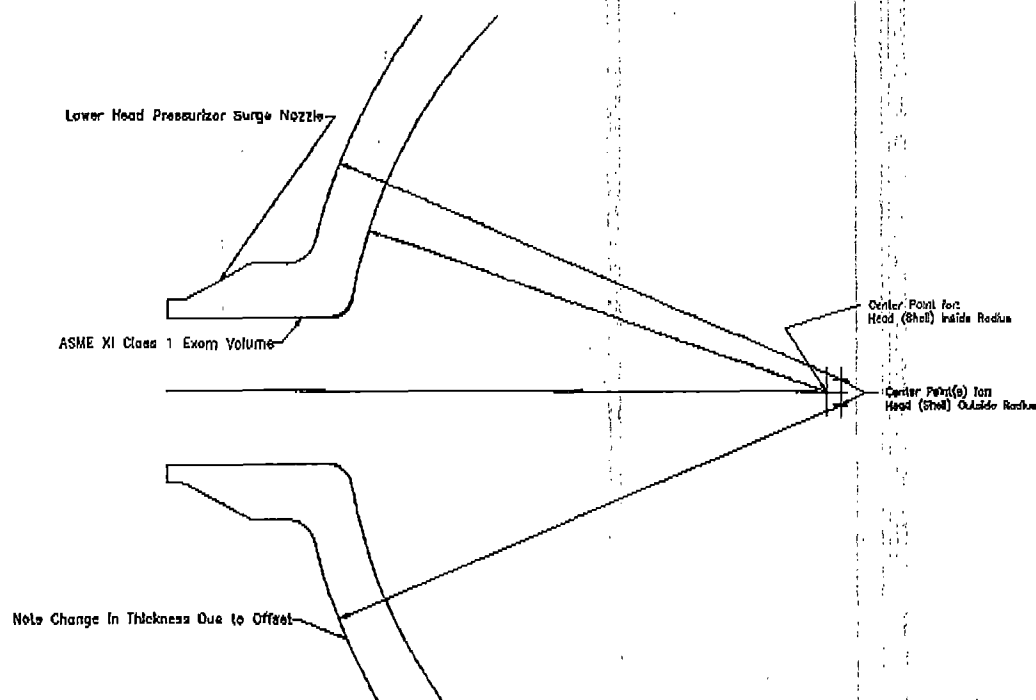


Figure 2. Westinghouse Pressurizer Lower Head Sketch with Offsets

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