Entergy

**Entergy Nuclear Northeast**
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
295 Broadway, Suite 1
P.O. Box 249
Buchanan, NY 10511-0249

July 23, 2002

Re: Indian Point Unit No. 2
Docket No. 50-247
NL-02-101

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Mail Stop O-P1-17
Washington, D.C. 20555-0001

Subject: NRC Bulletin 2001-01 - Reactor Pressure Vessel Head Penetration Nozzle Inspection Plan for 2002 Refueling Outage (2R15)

References: 1) ENO letter, M. Kansler to USNRC dated November 13, 2001 (NL-01-133/ IPN-01-079) regarding revised vessel head penetration inspection plans to NRC Bulletin 2001-01

2) ENO letter, J. Herron to USNRC dated April 2, 2002 (NL-02-050 / IPN-02-023) regarding 15-day response to NRC Bulletin 2002-01

Dear Sir:

The purpose of this letter is to provide additional details regarding the reactor vessel head inspections to be performed at Indian Point Unit No. 2 during the next refueling outage (2R15). The refueling outage is scheduled to begin October 26, 2002. The information provided herein supplements Entergy Nuclear Operations, Inc.'s (ENO) responses to Request 4a (Reference 1) of NRC Bulletin 2001-01, and Item D (Reference 2) of NRC Bulletin 2002-01. This letter fulfills ENO's commitment to provide to the NRC staff 90-days prior to the start of the next refueling outage additional details regarding the type of inspection(s), applicable qualification requirements, and acceptance criteria.

In response to NRC Bulletin 2001-01, ENO has evaluated several options to effectively and efficiently manage the reactor vessel head penetration (VHP) degradation detected at other domestic PWRs. The options considered included:

1. Effective bare metal visual inspection of the vessel head outside surface
2. Ultrasonic inspection conducted from the inside surface of the VHPs
3. Eddy current examination from the inside surface of the VHPs
4. Surface examination of accessible portions of the J-groove weld from the inside surface of the vessel head.

This evaluation considered such issues as vessel head susceptibility to stress corrosion cracking, personnel radiation exposure associated with each option, current state of the art of each of the options, and the efficient use of plant resources available during the refueling outage.

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Based on the results of our evaluation, ENO has concluded that the following inspection program will provide the most effective approach to characterize the current condition of the VHPs. This inspection program minimizes personnel exposure associated with the inspection and optimizes the use of available plant resources during the outage:

1. ENO will remove the IP-2 vessel head insulation (Kaylo block with asbestos tape and cement) inside the CRDM cooling shroud and perform an effective, bare metal visual examination of the outside surface of the vessel head. The visual examination will be performed utilizing remote video camera technology capable of detecting boron deposits on the surface of the vessel head. The surface of the vessel head is painted with a heat resistant silicone aluminum coating. ENO does not intend to remove this paint in order to conduct the bare metal visual examination. However, depending upon the results of the examination, it may be necessary to remove paint in select areas in order to evaluate questionable conditions.

2. VHPs found to contain evidence of boric acid deposits consistent with a primary coolant leak resulting from a through wall defect in the Inconel 600 base material or in the J-Groove weld, will be additionally inspected with a volumetric inspection technique (i.e. ultrasonic inspection technique) from the inside surface of the penetration.

3. The detection of unacceptable flaws (i.e. as defined in ASME Section XI, IWB-3600) will result in the expansion of the volumetric inspection program scope to additional VHPs.

4. ENO will perform a surface examination of the J-groove welds in those VHPs found to contain unacceptable indications during the volumetric examinations. This surface examination will consist of either liquid penetrant, or eddy current inspection technique.

5. The volumetric inspection region will include a length of the nozzle sufficient to span the J-groove weld as well as the upper and lower heat effected zones of the weld.

6. Flaws detected during the above inspections will be evaluated in accordance with the rules provided in Subsection IWB-3600 of the ASME Section XI Code. All flaws, which exceed the requirements of IWB-3600, will be repaired with an approved repair technique prior to returning the plant to service.

7. ENO has contracted with Westinghouse to develop the inspection techniques and the associated tooling to complete the volumetric inspections. Personnel, equipment and inspection techniques used during the volumetric inspections will be demonstrated prior to the refueling outage in EPRI samples specifically built for this purpose.

In addition to the above inspection program to ensure the structural integrity of the VHPs during future plant operations, ENO will consider any additional inspections, which are determined to be prudent given personnel exposure considerations and available outage resources. Other inspections currently under consideration for implementation include ultrasonic inspection of additional VHP nozzles, up to 100 percent of those VHPs found to be clean during the bare metal visual examination.

Attachment 1 summarizes the commitments being made by ENO in this letter. If you have any questions, please contact Mr. John McCann (914) 734-5074, Licensing Manager.

I declare under penalty of perjury that the foregoing is true and correct.

Very truly yours,

for Fred Dacimo

Executed on 7/19/02
(Date)

Mr. Fred Dacimo
Vice President - Operations
Indian Point 2

Attachments:

1. Summary of Commitments

cc:

Mr. Hubert J. Miller
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406-1415

Mr. Patrick Milano, Project Manager
Project Directorate I-1
Division of Licensing Project Management
Office of Nuclear Reactor Regulation
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U.S. Nuclear Regulatory Commission
Resident Inspectors' Office
Indian Point 3 Nuclear Power Plant
P.O. Box 337
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Summary of Commitments

| Commitment ID | Description | Due Date |
|---|---|---|
| NL-02-101-01 | ENO will remove the IP-2 vessel head insulation (Kaylo block with asbestos tape and cement) inside the CRDM cooling shroud and perform an effective, bare metal visual examination of the outside surface of the vessel head. The visual examination will be performed utilizing remote video camera technology capable of detecting boron deposits on the surface of the vessel head. The surface of the vessel head is painted with a heat resistant silicone aluminum coating. ENO does not intend to remove this paint in order to conduct the bare metal visual examination. However, depending upon the results of the examination, it may be necessary to remove paint in select areas in order to evaluate questionable conditions. | To be conducted during 2R15 refueling outage. |
| NL-02-101-02 | VHPs found to contain evidence of boric acid deposits consistent with a primary coolant leak resulting from a through wall defect in the Inconel 600 base material or in the J-Groove weld, will be additionally inspected with a volumetric inspection technique (i.e. ultrasonic inspection technique) from the inside surface of the penetration. | To be conducted during 2R15 refueling outage. |
| NL-02-101-03 | The detection of unacceptable flaws (i.e. as defined in ASME Section XI, IWB-3600) will result in the expansion of the volumetric inspection program scope to additional VHPs. | To be conducted during 2R15 refueling outage. |
| NL-02-101-04 | ENO will perform a surface examination of the J-groove | To be conducted during 2R15 refueling outage. |

Summary of Commitments

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| | welds in those VHPs found to contain unacceptable indications during the volumetric examinations. This surface examination will consist of either liquid penetrant, or eddy current inspection technique. | |
| NL-02-101-05 | The volumetric inspection region will include a length of the nozzle sufficient to span the J-groove weld as well as the upper and lower heat effected zones of the weld. | To be conducted during 2R15 refueling outage. |
| NL-02-101-06 | Flaws detected during the above inspections will be evaluated in accordance with the rules provided in Subsection IWB-3600 of the ASME Section XI Code. All flaws, which exceed the requirements of IWB-3600, will be repaired with an approved repair technique prior to returning the plant to service. | To be conducted during 2R15 refueling outage. |
| NL-02-101-07 | ENO has contracted with Westinghouse to develop the inspection techniques and the associated tooling to complete the volumetric inspections. Personnel, equipment and inspection techniques used during the volumetric inspections will be demonstrated prior to the refueling outage in EPRI samples specifically built for this purpose. | To be conducted during 2R15 refueling outage. |
| NL-02-101-08 | ENO will consider any additional inspections, which are determined to be prudent given personnel exposure considerations and available outage resources. Other inspections currently under consideration for implementation include | To be conducted during 2R15 refueling outage. |

Summary of Commitments

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| | ultrasonic inspection of additional VHP nozzles, up to 100 percent of those VHPs found to be clean during the bare metal visual examination. | |