Entergy

Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, N.Y. 10511-0249
Tel (914) 734-6700

J.E. Pollock
Site Vice President
Administration

January 31, 2008

Re: Indian Point Nuclear
Generating Unit No. 2
Docket No. 50-247
NL-08-019

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

Subject: Indian Point Nuclear Generating Unit No. 2 - Reactor Vessel Lower Head Inspection Plans

References:

1) NRC Bulletin 2003-02, "Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity", dated August 21, 2003
2) Entergy letter to NRC (NL-03-178), "90-Day Response to NRC Bulletin 2003-02 Regarding Leakage From Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity", dated November 13, 2003
3) NRC letter to Entergy, "Indian Point Nuclear Generating Unit No. 2 – Response to NRC Bulletin 2003-02, Leakage from Reactor Pressure Vessel Lower Head Penetrations and Reactor Coolant Pressure Boundary Integrity", dated August 2, 2005.
4) Entergy letter to NRC (NL-05-002), "Reactor Vessel Lower Head Inspection Results; Indian Point 2, Fall 2004 Refueling Outage (2R16)", dated January 17, 2005
5) Entergy letter to NRC (NL-06-065), "Reactor Vessel Lower Head Inspection Results; Indian Point Unit 2, Spring 2006 Refueling Outage (2R17)", dated July 12, 2006
6) Westinghouse Report (LTR-PAFM-08-4, Rev. 0), "Technical Basis to Support Extension of Surveillance Interval for Planned Visual Inspection of the Indian Point 2 BMI Nozzles", dated January, 2008

Dear Sir or Madam:

On August 21, 2003 the Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2003-02 (Reference 1). By letter dated November 13, 2003 (Reference 2), Entergy Nuclear Operations, Inc. (Entergy) provided its response to the Bulletin. In that response Entergy described its plans to perform a 360-degree bare-metal visual (BMV) examination of all 58 Reactor Pressure Vessel (RPV) lower head penetrations during the fall 2004 refueling outage (RFO) and to perform this BMV inspection during subsequent RFOs unless industry experience or site-specific observations indicate the

A109

NRR

need for an alternative inspection approach. By letter dated August 2, 2005 (Reference 3), the NRC requested to be notified, in writing, of any changes in this plan prior to implementation. This letter provides such notification.

Inspections of the RPV lower head penetrations were conducted during the fall 2004 (Reference 4) and spring 2006 (Reference 5) RFOs. In addition, inspections of the general area under the reactor vessel were conducted. These inspections identified no evidence of leakage resulting from a breach of the lower head penetrations or attachment welds but did identify boron streaks from the reactor cavity liner leakage. The lower head penetration nozzles were inspected by non destructive examination (NDE) from the reactor vessel inside surface during the spring 2006 RFO. During that outage, no indications were detected in the lower head penetration nozzles. The spring 2006 lower head penetration nozzle internal inspection used ultrasonic (volumetric) and eddy current (surface) techniques which is a more thorough examination than an external visual inspection.

Performing visual inspections, including support activities such as scaffolding erection and demolition, result in a collective radiation exposure of approximately 2 rem per RFO. In order to defer these dose significant inspections a structural integrity evaluation of the lower penetration nozzles was performed. Finite element stress analyses were carried out using the ANSYS program and the stress analysis results were used as input to the structural integrity evaluation. A non-proprietary version of the stress analysis and structural integrity evaluation is provided in Reference 6 (attached).

The results of the structural integrity evaluation, taking into consideration the NDE detection capability, support extension of the surveillance interval for planned BMV until after the 2012 RFO. Therefore, performing a BMV examination during the 2008 RFO provides no additional assurance that the penetrations will remain structurally sound. Based on this conclusion, and on the fact that the boron from the cavity leakage impacts the effectiveness of the BMV inspection, Entergy plans to defer RPV lower head visual inspection until the spring 2012 RFO. Note that Entergy will continue to perform a visual inspection of the general area under the reactor vessel as part of the boric acid walkdowns to ensure that leakage has not occurred during the previous cycle of operation.

This letter contains no new regulatory commitments. If you have any questions or require additional information, please contact Mr. R. Walpole, Licensing Manager at 914-734-6710.

Sincerely,

J. E. Pollock
Site Vice President
Indian Point Energy Center

Attachments:

1. Westinghouse Report LTR-PAFM-08-4 Rev. 0

cc:

Mr. John P. Boska, Senior Project Manager
Project Directorate I,
Division of Licensing Project Management
U.S. Nuclear Regulatory Commission

Regional Administrator
Region I
U.S. Nuclear Regulatory Commission

Resident Inspector's Office
Indian Point Unit 2

Mr. Paul Eddy
New York State Dept. of Public Service

ATTACHMENT TO NL-08-019

Westinghouse Report LTR-PAFM-08-4 Rev.0

Entergy Nuclear Operations, Inc.
Indian Point Nuclear Generating Unit No. 2
Docket Nos. 50-247