

November 20, 2007

Mr. Michael A. Balduzzi
Sr. Vice President & COO
Regional Operations, NE
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 2 – APPROVAL OF
EXTENSION REQUEST FOR CORRECTIVE ACTIONS REQUIRED BY
GENERIC LETTER 2004-02 (TAC NO. MC4689)

Dear Mr. Balduzzi:

In a letter dated September 17, 2007, [Agencywide Document Access and Management System (ADAMS) accession number ML072680835] Entergy Nuclear Operations, Inc. (Entergy) requested an extension to the December 31, 2007, completion deadline for the corrective actions required by Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" for the Indian Point Nuclear Generating Unit No. 2 (IP2). The proposed extension would allow Entergy approximately 3 additional months to perform the final corrective actions, facility modifications, and all licensing activities necessary to achieve full compliance with GL 2004-02, with completion of this effort to coincide with the completion of the IP2 spring 2008 refueling outage, scheduled to begin on March 25, 2008.

The Nuclear Regulatory Commission (NRC) staff has evaluated the information you provided and determined that it is acceptable to extend the completion date for the corrective actions and modifications as described in the referenced letter, until the completion of the IP2 spring 2008 refueling outage. The results of the NRC staff's evaluation of this request are enclosed.

Please contact the Indian Point Project Manager, John Boska, at (301) 415-2901 if you have any questions on this issue.

Sincerely,

/RA/

Mark G. Kowal, Chief
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-247

Enclosure:
As stated

cc w/encl: See next page

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NAME	JBoska	SLittle	MScott	MKowal
DATE	11/19/07	11/19/07	11/19/07	11/20/07

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Indian Point Nuclear Generating Unit No. 2

cc:

Mr. Michael R. Kansler
President & CEO / CNO
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. John T. Herron
Sr. Vice President
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Sr. Vice President
Engineering & Technical Services
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. Fred R. Dacimo
Site Vice President
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

Mr. Anthony Vitale - Acting
General Manager, Plant Operations
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway
P.O. Box 249
Buchanan, NY 10511-0249

Mr. Oscar Limpas
Vice President Engineering
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. Joseph P. DeRoy
Vice President, Operations Support
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. John A. Ventosa
GM, Engineering
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. John F. McCann
Director, Nuclear Safety & Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Ms. Charlene D. Faison
Manager, Licensing
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Mr. Ernest J. Harkness
Director, Oversight
Entergy Nuclear Operations, Inc.
1340 Echelon Parkway
Jackson, MS 39213

Mr. Patric W. Conroy
Director, Nuclear Safety Assurance
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P.O. Box 249
Buchanan, NY 10511-0249

Mr. Robert Walpole
Manager, Licensing
Entergy Nuclear Operations, Inc.
Indian Point Energy Center
450 Broadway, GSB
P. O. Box 249
Buchanan, NY 10511-0249

Mr. William C. Dennis
Assistant General Counsel
Entergy Nuclear Operations, Inc.
440 Hamilton Avenue
White Plains, NY 10601

Indian Point Nuclear Generating Unit No. 2

cc:

Mr. Paul Tonko
President and CEO
New York State Energy, Research, and
Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. John P. Spath
New York State Energy, Research, and
Development Authority
17 Columbia Circle
Albany, NY 12203-6399

Mr. Paul Eddy
New York State Department
of Public Service
3 Empire State Plaza
Albany, NY 12223-1350

Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Senior Resident Inspector's Office
Indian Point 2
U. S. Nuclear Regulatory Commission
P.O. Box 59
Buchanan, NY 10511

Senior Resident Inspector's Office
Indian Point 3
U. S. Nuclear Regulatory Commission
P.O. Box 59
Buchanan, NY 10511

Mr. Charles Donaldson, Esquire
Assistant Attorney General
New York Department of Law
120 Broadway
New York, NY 10271

Mr. Raymond L. Albanese
Four County Coordinator
200 Bradhurst Avenue
Unit 4 Westchester County
Hawthorne, NY 10532

Mayor, Village of Buchanan
236 Tate Avenue
Buchanan, NY 10511

Mr. William DiProfio
PWR SRC Consultant
48 Bear Hill Road
Newton, NH 03858

Mr. Garry Randolph
PWR SRC Consultant
1750 Ben Franklin Drive, 7E
Sarasota, FL 34236

Mr. William T. Russell
PWR SRC Consultant
400 Plantation Lane
Stevensville, MD 21666-3232

Mr. Jim Riccio
Greenpeace
702 H Street, NW
Suite 300
Washington, DC 20001

Mr. Phillip Musegaas
Riverkeeper, Inc.
828 South Broadway
Tarrytown, NY 10591

Mr. Mark Jacobs
IPSEC
46 Highland Drive
Garrison, NY 10524

Ms. Susan Shapiro
via email

Mr. Sherwood Martinelli
FUSE USA
via email

INDIAN POINT UNIT 2 GSI-191/GL 2004-02

EXTENSION REQUEST APPROVAL

In a letter dated September 17, 2007, Entergy Nuclear Operations, Inc. (Entergy) requested an extension to the corrective action due date of December 31, 2007 stated in NRC Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized Water Reactors" (GL 2004-02) for the Indian Point Nuclear Generating Unit No. 2 (IP2).

Entergy has taken actions, as described in their letters dated September 1, 2005 (ML052500197), and December 15, 2005 (ML053570222), toward bringing IP2 into compliance with GL 2004-02, including replacing the sump screens with substantially larger sump strainers during the spring 2006 refueling outage. Further, IP2 is continuing the evaluation of the adequacy of the replacement strainers.

Indian Point Unit 2 has two independent sumps in the containment building—the Recirculation Sump and the Containment Sump—that provide for the recirculation function. The Recirculation Sump is the preferred source of cooling in the recirculation mode of operation, and the Containment Sump is the back-up source. The current design and licensing basis for the Recirculation Sump and Containment Sump is that they are functionally redundant at the initiation of recirculation. However, the licensee stated that evaluations have shown that to comply with GL 2004-02 (including chemical effects), the following additional hardware modifications and operating license amendments are required.

1. Replacing the trisodium phosphate (TSP) buffering agent with sodium tetraborate.
2. Installing screens on certain crane wall penetrations.
3. Installing grating on the containment sump trench.
4. Modifying screens to accommodate sump level instrument housing.
5. Increasing the surface area of the containment sump strainer.
6. Revising Technical Specification SR 3.6.7.1 to reflect the new buffer type and quantity.
7. Amending the Operating License to exempt IP2 sumps from the Single Failure Criteria of 10 CFR 50.46(d) for a large-break loss-of-coolant-accident (LBLOCA) to allow the use of the Alternate Break Methodology as endorsed by the NRC in Nuclear Energy Institute (NEI) 04-07, Volume 1, "Pressurized Water Reactor Sump Performance Methodology," and NEI 04-07, Volume 2, "Safety Evaluation by the Office of Nuclear Regulatory Regulation Related to NRC Generic Letter 2004-02," Revision 0, dated December 2004.

The criteria for granting an extension to the due date of December 31, 2007, for completion of GL 2004-02 corrective actions are stated in SECY-06-0078. Specifically, an extension may be granted if:

- the licensee has a plant-specific technical/experimental plan with milestones and schedule to address outstanding technical issues with enough margin to account for uncertainties, and
- the licensee identifies mitigative measures to be put in place prior to December 31, 2007, and adequately describes how these mitigative measures will minimize the risk of degraded emergency core cooling system (ECCS) and containment spray system (CSS) functions during the extension period.

Enclosure

In regard to the first extension criterion, IP2 has a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions and modifications by March 2008. Specifically, the licensee has stated that it will:

1. Begin chemical effects testing in November 2007.
2. Reevaluate downstream effects to address Westinghouse WCAP-16406P, Revision 1, by November 2007.
3. Prepare a containment coating inspection and control program by November 2007.
4. Prepare a containment cleanliness inspection and control program by November 2007.
5. Issue a strainer certification/qualification report to include chemical effects by February 2008.
6. Install the remaining modifications during the spring 2008 refueling outage, and
7. Obtain approval of license amendments prior to restart from the spring 2008 refueling outage.

In regard to the second extension criterion, the licensee has stated that the following modifications, mitigative measures, compensatory measures, and/or favorable conditions are in effect at Indian Point Unit 2, minimizing the risk of degraded ECCS and CSS functions during the extension period.

1. Larger surface area sump strainers (3200 ft² strainer replaces 50 ft² Recirculation Sump screen and 412 ft² strainer replaces 30 ft² Containment Sump screen) and flow-channeling measures to reduce debris transport to the sump screens.
2. Mitigative measures as described in IP2's response to NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors." These measures include:
 - Provision of training to the licensed operators to present the mechanisms and potential consequences of sump clogging.
 - Provision of procedural guidance within the Emergency Operating Procedures (EOPs) on symptoms and identification of sump blockage.
 - Development of a new EOP (ECA-1.3, "Loss of Emergency Coolant Recirculation Caused by Sump Blockage").
 - Provision of procedural guidance not to start a second recirculation pump if cavitation is expected.
 - Provision of procedural guidance to consider refilling the Refueling Water Storage Tank should sump blockage be a concern.
3. Mitigative measures that assure containment cleanliness, foreign material exclusion and sump and flow channel/barrier operability. These measures include:
 - Procedural control of containment cleanliness (OAP-007 "Containment Entry and Egress") that applies after each containment entry and prior to exiting Mode-5 during plant startup.
 - Procedural controls for foreign material exclusion (IP-SMM-MA-118, "Foreign Material Exclusion") that apply to inspection, operation, maintenance and outage activities.
 - Satisfaction of operability of the sumps and flow channel/barrier by Engineering

visual inspection and procedure step sign-off (OAP-007, "Containment Entry and Egress).

4. Mitigative measures to assure that potential sources of debris in containment are minimized. These measures include:
 - Procedure changes to ensure that materials introduced into containment as a result of the engineering change process are identified and evaluated to determine their effect on sump performance.
 - Procedure changes to ensure that configuration control of insulation inside containment is maintained in compliance with GL 2004-02.

The NRC has confidence that Entergy has a plan for IP2 that will result in the installation of final GSI-191 modifications that provide acceptable strainer function with adequate margin for uncertainties. Further, the NRC has concluded that Entergy has put mitigation measures in place at IP2 to adequately reduce risk for the requested approximately 3-month extension period. It is, therefore, acceptable to extend the completion date for certain corrective actions for the issues discussed in GL 2004-02 (specifically, the seven modifications and/or document changes listed above) until prior to restart after the IP2 spring 2008 refueling outage, currently scheduled to begin March 25, 2008. Should Entergy elect to begin the outage more than 30 days after March 25, 2008, Entergy will need to provide the NRC additional justification for further delay in completing corrective actions for GL 2004-02.

Approval of the requested extension to the GL 2004-02 corrective action due date shall not be construed as approval of any operating license amendment described in the licensee's extension request.