

October 30, 2008

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

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 – APPROVAL
OF REVISED EXTENSION REQUEST FOR CORRECTIVE ACTIONS
REQUIRED BY GENERIC LETTER 2004-02 (TAC NOS. MC4689 AND MC4690)

Dear Sir or Madam:

In a letter dated October 17, 2008, Agencywide Document Access and Management System (ADAMS) accession number ML083010239, Entergy Nuclear Operations, Inc. (Entergy) submitted a request for an additional extension to the completion deadline of October 31, 2008, 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 Nos. 2 and 3 (IP2 and IP3). Entergy requested that IP2 be granted an extension to the end of the refueling outage in spring 2010, and IP3 to August 31, 2009.

The NRC staff has evaluated the information in your revised request and determined that it is acceptable to extend the completion date for IP2 and IP3 for the remaining modifications and licensing activities as described in the referenced letter, until August 31, 2009. For IP2, the NRC staff will further review the request for an extension to spring 2010 and will reply at a later time. 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 Nos. 50-247 and 50-286

Enclosure:
As stated

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ADAMS ACCESSION NUMBER: ML083010366

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DATED: October 30, 2008

INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3 – APPROVAL OF REVISED
EXTENSION REQUEST FOR CORRECTIVE ACTIONS REQUIRED BY GENERIC LETTER
2004-02

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INDIAN POINT NUCLEAR GENERATING UNIT NOS. 2 AND 3
GENERIC SAFETY ISSUE (GSI)-191/GENERIC LETTER (GL) 2004-02
EXTENSION REQUEST APPROVAL

By letter dated October 17, 2008, Agencywide Document Access and Management System (ADAMS) Accession No. ML083010239, Entergy Nuclear Operations, Inc. (Entergy or the licensee), requested an additional extension to the Nuclear Regulatory Commission (NRC) Generic Letter (GL) 2004-02, "Potential Impact of Debris Blockage on Emergency Recirculation During Design Basis Accidents at Pressurized-Water Reactors" corrective action due dates for Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3). The stated intent of this extension is to allow the licensee additional time to complete ex-vessel downstream modifications in both units during upcoming refueling outages (RFOs). In addition, debris and chemical head loss testing will be conducted during the first half of 2009 to demonstrate that the final sump strainer configuration achieves the required performance. The licensee requested an extension for the remaining equipment modifications to August 31, 2009, for IP3 and to the restart from the spring 2010 RFO for IP2.

Previously, the NRC staff had approved an extension for IP2 GL 2004-02 corrective actions from the GL 2004-02 due date of December 31, 2007, until restart following completion of the IP2 spring 2008 refueling outage (NRC letter dated November 20, 2007, Agencywide Document Access and Management System (ADAMS) Accession No. ML073230169). Similarly, the corrective actions due date for IP3 was extended to June 30, 2008, (NRC letter dated December 20, 2007, ADAMS Accession No. ML073510242). By letter dated March 28, 2008 (Adams Accession No. ML080990085), the licensee requested an extension to October 31, 2008, to allow additional time to complete analysis and licensing activities to address GL 2004-02. The NRC staff subsequently approved an extension for IP2 and IP3 to October 31, 2008 (ADAMS Accession No. ML081000213, dated April 10, 2008).

The licensee stated in its letter dated October 17, 2008, that the additional extension period is needed due to a number of open issues with the test setup and conduct of the initial Indian Point head loss testing which resulted in the licensee's decision to pursue an alternate approach for GL 2004-02. The licensee's decision and extension request follows an NRC letter dated September 17, 2008 (ADAMS Accession No. ML082590215), and teleconferences with the NRC on September 10, 2008, and October 2, 2008, that involved discussions regarding several important issues with the test protocol used in the initial testing. The licensee's alternative approach will require new debris and chemical head loss testing for both units and will likely require an additional modification and license amendment for IP2. In addition, the licensee had separately determined through testing and downstream effects analyses (i.e., bearing wear) that additional equipment modifications are required to support addressing GL 2004-02 for both units.

The NRC has based its reviews for granting extensions to the due date for completion of GL 2004-02 corrective actions on the criteria 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

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- 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 and containment spray system functions during the extension period.

The SECY paper also states that for proposed extensions beyond several months, a licensee's request will more likely be accepted if the proposed mitigative measures include temporary physical improvements to the emergency core cooling system (ECCS) sump or materials inside containment to better ensure a high level of ECCS sump performance.

With regard to the first extension criterion, the licensee has provided, as described in the October 17, 2008, extension request letter, a plant-specific technical/experimental plan, with milestones and schedules, to complete the GL 2004-02 corrective actions. The licensee described, during a phone call held on October 2, 2008, between NRC staff and licensee representatives, the alternate methodology to be used, which involves a debris and chemical head loss "test for success" methodology and, as such, will determine the plant configuration needed to support strainer qualification. The licensee is in the process of vendor selection and is requiring a schedule that supports completion of testing and all supporting analyses by August 31, 2009.

The licensee stated in its October 17, 2008, letter that it will perform debris head loss and chemical effects testing using a section of the strainer array and that the test protocol will be based on the protocol described in the NRC letter to the Nuclear Energy Institute, dated March 28, 2008 (ADAMS Accession No. ML080230038). The plant configuration needed to support strainer qualification will be determined by this approach and consequently any needed modifications required to resolve GL 2004-02.

The licensee stated that the plan is as follows:

- Development of test protocol – October/November 2008
- Perform solubility test – November 2008
- Delivery of hardware to test facility – December 2008
- Perform "test for success" testing – February 2009
- Preparation of test report – March 2009
- Completion of analysis including strainer certification calculation – August 2009

The licensee stated in its October 17, 2008, letter, that should test results not support the current plant configuration, then the plant will be modified to match the acceptable test condition. The licensee stated that modifications may include insulation replacement and strainer structural enhancements and would be implemented during the RFO following completion of testing and analysis, spring 2010 and spring 2011 for IP2 and IP3, respectively.

The October 17, 2008, letter also described that with the new approach it would be likely that an additional modification and license amendment for IP2 will be required. The letter further describes that this modification will negate the need to assume spurious closure of two motor operated valves within the design basis of the internal recirculation system. This would be achieved by de-energizing these valves and by providing independent control room indication.

The licensee plans to submit a license amendment request by January 31, 2009, and to perform this modification during the IP2 spring 2010 RFO.

In addition, the licensee also states in its October 17, 2008, letter that the plan is to replace IP2 pump bearings during the IP2 spring 2010 RFO and IP3 pump bearings during the IP3 spring 2009 RFO.

With regard to the second extension criterion, the information provided in the licensee's letter dated October 17, 2008, indicates that the bases for reasonable assurance of operability with the installed replacement strainers are unchanged from those detailed in the NRC's extension approval letter dated April 10, 2008, and further bases which are detailed in the previous NRC Indian Point IP2 extension approval request letter, dated November 20, 2007 (ADAMS Accession No. ML0732301699) and the previous NRC Indian Point extension approval letter dated December 20, 2007 (ADAMS Accession No. ML073510242). The licensee's letter dated October 17, 2008, states that mitigative measures that were described in the March 28, 2007 (ADAMS Accession No. ML080990085), letter, remain in effect.

The NRC staff evaluation of the previous extension request concluded that the licensee had put mitigation measures in place to adequately reduce risk for the previous requested extension period (October 31, 2008), as stated in the NRC extension approval letter cited above. These measures include installation of replacement internal recirculation and containment sump strainers, replacement of the internal recirculation pumps, installation of flow channels, replacement of pH buffers, implementation of mitigative measures in response to NRC Bulletin 2003-01, and procedural enhancements in the areas of containment cleanliness, foreign material exclusion, and insulation control.

With regard to the third extension criterion, the significant modifications discussed in the licensee's March 28, 2008, extension request, in particular the installation of large replacement strainers in both units, satisfies this extension criterion. The NRC staff concludes that the impact on risk for the requested extension period for actions to address chemical effects beyond the December 31, 2007, implementation date specified in GL 2004-02 does not pose a significant increase in risk based on the mitigative measures identified in this document.

The NRC staff held a phone conference with the licensee on October 23, 2008. In summary, the NRC and the licensee understand that:

The IP2 corrective action due date extension request will remain under NRC staff evaluation to allow the NRC time to determine if there is the need for an additional regulatory action (e.g., license conditions). The NRC will grant an interim extension for IP2 until August 31, 2009. The NRC staff considers the granted interim extension period to be of low safety concern given the mitigation measures and plant improvements already in place and expects the licensee to follow the corrective action plan for IP2 as described in the licensee's letter dated October 17, 2008.

As described in the October 17, 2008, letter, the licensee will inform the NRC by December 1, 2008, of any changes in the bearing installation plans for IP3, should the schedule not support replacement bearing installation during the forthcoming IP3 spring 2009 RFO. In addition, should the additional chemical and debris head loss testing for the current IP2 and IP3 containment configurations not be able to demonstrate acceptable results for net positive

suction head, the NRC expects the licensee to expeditiously inform the NRC of the testing results obtained and any additional corrective actions planned (e.g., insulation removal).

The NRC staff believes that the licensee has a reasonable plan for IP2 and IP3 that should result in the completion of final GL 2004-02 corrective actions that provide acceptable strainer function with adequate margin for uncertainties. The additional time requested for IP3 in the October 17, 2008, letter is considered to be of low safety concern given the mitigation measures and plant improvements already in place. Based on the licensee having satisfactorily addressed the NRC GL 2004-02 due date extension criteria as discussed above, the NRC staff finds it is acceptable to extend the completion date for GL 2004-02 corrective actions for IP2 and IP3, as described in this enclosure, to August 31, 2009.

The NRC expects Entergy to place a high priority on completing remaining actions and updating the plants' licensing bases as soon as possible. Approval of these extensions to the GL 2004-02 corrective action due dates for IP2 and IP3 shall not be construed as approval of the operating license amendment requests discussed above.