



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

November 15, 2012

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 NO. 3 - REQUEST FOR
ADDITIONAL INFORMATION REGARDING PROPOSAL TO ALIGN THE
REFUELING WATER STORAGE TANK AND THE SPENT FUEL POOL
PURIFICATION SYSTEM (TAC NO. ME9263)

Dear Sir or Madam:

By letter dated August 14, 2012, Entergy Nuclear Operations, Inc., the licensee, submitted a license amendment application that would revise Technical Specification 3.5.4, "Refueling Water Storage Tank," such that the non-seismically qualified piping of the spent fuel pool purification system may be connected to the refueling water storage tank's seismic piping for a limited period of time under administrative controls.

The Nuclear Regulatory Commission's Accident Dose Branch staff is reviewing the submittal and has determined that additional information is needed to complete its review. The specific questions are found in the enclosed request for additional information (RAI). Based on our discussions, we understand that a response to the RAI will be provided by December 10, 2012.

Please contact me at (301) 415-1364 if you have any questions on this issue.

Sincerely,

A handwritten signature in black ink that reads "Douglas V. Pickett".

Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

Enclosure:
Request for Additional Information

cc w/encl: Distribution via Listserv

REQUEST FOR ADDITIONAL INFORMATION

ENTERGY NUCLEAR OPERATIONS, INC.

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

On August 14, 2012, Entergy Nuclear Operations Incorporated submitted a proposed license amendment request (LAR) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML12234A098) to the Nuclear Regulatory Commission (NRC) to revise the Indian Point Nuclear Generating Unit No. 3 (IP3), Technical Specification 3.5.4, "Refueling Water Storage Tank (RWST)." The proposed change would allow RWST isolation valves connected to non-safety related piping to be opened under administrative control for up to 14 days per fuel cycle until the end of refuel outage 18.

A single failure of these now open RWST boundary valves needs to be considered. IP3's licensing basis accident dose analysis includes consideration of Emergency Core Cooling System (ECCS) leakage. The existing analysis approved by the NRC staff in License Amendment 224, dated March 22, 2005, "Indian Point Nuclear Generating Unit No. 3 – Issuance of Amendment Re: Full Scope Adoption of Alternative Source Term (TAC No. MC3351)" (ADAMS Accession No. ML050750431) assumed the RWST valves connected to non-safety related piping remain closed during operation.

After the end of the post-loss-of-coolant-accident (post-LOCA) injection phase, the ECCS and containment spray systems [ESF systems that recirculate sump water] are switched to the recirculation phase. This requires that water from the containment sump replace the RWST as the ESF systems water supply by realigning several system valves that interface between these ESF systems and the RWST and the pathways leading back to the RWST. If these system valves leak by design or the leakage of these valves is unknown, a leakage path between the containment sump and the RWST and any interfacing piping may exist. For the design basis LOCA radiological analyses, it is assumed that 40% of the core iodine inventory is mixed homogeneously and instantaneously in the primary containment sump water at the time of release from the core. Because the ECCS takes suction from the sump, the sump water is assumed to be radioactive. Per Regulatory Guide 1.183, Regulatory Position 5.1.2, any piping downstream of the failed valve that is non-safety related or not in technical specifications would not be credited in the design basis radiological analyses. Therefore, the proposed change would create a potential release pathway for radioactivity to the environment which is not considered in the current design basis accident analyses.

An active failure of the boundary valve would allow any radioactive ESF leakage to the RWST tank or in route to the RWST to drain to non-seismic piping after a design basis accident (e.g. LOCA). Please describe how the credible failure of the boundary valves, proposed to be opened, impact the assumptions for the most limiting single active failure considered in the licensing basis accident analysis and the resulting consequences. If this proposed change

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results in a new limiting single active failure assumption, please provide the inputs, methods¹ and results for the revised accident analysis in order for the staff to conduct an independent analysis to confirm radiological doses would remain below the criteria in 10 CFR 50.67.

As an alternative to the information requested above, to address NRC staff concerns, provide a justification for creditable actions² to be taken to prevent and/or mitigate a radiological release through non-seismic piping while in the proposed configuration. Justify how these actions would not allow any increase in leakage of radioactivity to the environment which would increase the radiological consequences of any design basis accident. Any response should also include: 1) creditable actions such as additional means available to isolate flow through the non-seismic piping after a design basis accident, 2) the worst case single active failure (i.e. failure of the open boundary valve(s) to close), 3) the maximum time to isolate the flow after a design basis accident, 4) a justification for how this closure can be accomplished within this time, 5) the minimum time after a design basis accident for the plant to recirculate sump water, 6) the design leakage of any credited boundary valves at which the valve would be declared inoperable by technical specifications, 7) how this leakage is confirmed by testing, and 8) the inputs and methods³ used to determine that any increased leakage (beyond the leakage in the current accident analyses), before or after closure of a credited boundary valve, does not increase the design basis accident doses used to confirm compliance with 10 CFR 50.67.

Please provide any design drawings showing the valves and flow pathways described in the LAR or references to docketed material with this information. Indicate which credited valves and piping are safety related, required to be operable by technical specifications and are powered by emergency power sources.

In addition, the staff believes that the proposed note to Technical Specification 3.5.4 should be modified to 1) identify the manual valves requiring operator action to close and 2) reference the administrative controls as described in the Technical Specification Bases. In this regard, an expanded discussion of the administrative controls should be included in the TS Bases. The discussion should address planned actions, use of dedicated/designated operators, procedures employed, timeliness goals, and operator shift turnover discussions.

1 Regulatory Guide 1.183 provides a method acceptable to the NRC for demonstrating compliance with 10 CFR 50.67.

2 Regulatory Guide 1.183, Regulatory Position 5.1.2, provides a method acceptable to the staff for crediting mitigating systems.

3 Regulatory Guide 1.183 provides a method acceptable to the NRC for demonstrating compliance with 10 CFR 50.67.

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Indian Point Energy Center
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P.O. Box 249
Buchanan, NY 10511-0249

SUBJECT: INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 - REQUEST FOR ADDITIONAL INFORMATION REGARDING PROPOSAL TO ALIGN THE REFUELING WATER STORAGE TANK AND THE SPENT FUEL POOL PURIFICATION SYSTEM (TAC NO. ME9263)

Dear Sir or Madam:

By letter dated August 14, 2012, Entergy Nuclear Operations, Inc., the licensee, submitted a license amendment application that would revise Technical Specification 3.5.4, "Refueling Water Storage Tank," such that the non-seismically qualified piping of the spent fuel pool purification system may be connected to the refueling water storage tank's seismic piping for a limited period of time under administrative controls.

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Sincerely,
/RA/
Douglas V. Pickett, Senior Project Manager
Plant Licensing Branch I-1
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket No. 50-286

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Request for Additional Information

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