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Date: 1/31/2008 3:57:31 PM
Subject: Draft RAIs on Balance of Plant, Fire Protection AMP, and Nickel Alloy AMP
cc: "Bo Pham" <BMP@nrc.gov>,<IPNonPublicHearingFile@nrc.gov>

Donna and Mike,

Attached is a draft request for additional information related to the Indian Point license renewal application. Please review and let me know when Entergy is available to discuss. The purpose of the telecon will be to obtain clarification on the staff's questions.

Thanks,

Hearing Identifier: IndianPointUnits2and3NonPublic
Email Number: 390

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Subject: Draft RAIs on Balance of Plant, Fire Protection AMP, and Nickel Alloy AMP
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Indian Point Nuclear Generating Unit Nos. 2 and 3 (IP2 and IP3)
License Renewal Application (LRA)
Draft Request for Additional Information Set 11
Balance of Plant, Fire Protection, and Nickel Alloy

Balance of Plant

D-RAI 2.3A.2.2-1 Containment Spray

The aging management review (AMR) boundary for a system is typically highlighted on license renewal drawings. However, the license renewal drawings provided to the staff did not contain a depiction of (a)(2) boundaries or components. Section 2.3.2.2 of the license renewal application (LRA) states: "The containment spray system has no intended function for 10 CFR 54.4(a)(2)."

On Unit 2 license renewal drawing LRA-9321-2735 (containment spray system), the piping line #187, including valve 872D 3/4"-T58 was not highlighted, but it appears to be directly connected to safety-related spray piping. This piping is located downstream of the safety class boundary on the suction piping, 12"-SI-151R- #181, from the refueling water storage tank (RWST) to the containment spray pump at branch connection, 2"-SI-151R- #588, ending at valve 873B 2"-T58. Similarly, there is a non-highlighted mini-flow recirculation line from the pump. Piping downstream of the safety class boundary may not be required to perform the safety-related function, but may need to be included in scope under 10 CFR 54.4(a)(2).

Indicate whether portions of the above system(s) were evaluated for inclusion within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). Identify all other instances, whereby a safety-related system, which has nonsafety-related components, was scoped in per 10 CFR 54.4(a)(1), but those nonsafety-related components were not identified as in scope for 10 CFR 54.4(a)(2).

D-RAI 2.3A.4.2-2 Auxiliary Feedwater

Section 2.3.4.3 of the license renewal application (LRA) states: "The AFW system has no intended function for 10 CFR 54.4(a)(2)."

The following components on safety-related system(s) are not highlighted, but may need to be considered for 10 CFR 54.4(a)(2):

- auxiliary feedwater pump bearing cooling line on license renewal drawing LRA-9321-2018-0 (Unit 2),
- chemical feed line to auxiliary feedwater between 3/4" -BFD-65-19 on license renewal drawing LRA-9321-2038-0 to 2-inch piping connected to BFD-1131 on license renewal drawing LRA-9321-2019-0 (typical) (Unit 2),
- piping and associated valve SS-189 off of the auxiliary feedwater supply header on license renewal drawing LRA-9321-20183-001 (at location D-7) (Unit 3).

Indicate whether portions of the above system(s) were evaluated for inclusion within the scope of license renewal in accordance with 10 CFR 54.4(a)(2). It is noted that in D-RAI 2.3A.2.2-1, above, the extent of condition has been requested.

D-RAI 2.2B-2

Nonsafety-related SSCs directly connected to safety-related SSCs must be structurally sound in order to maintain the pressure boundary integrity of safety class piping. The nonsafety-related piping and supports up to and including the first seismic anchor beyond the safety/nonsafety interface may need to be in-scope in order to assure that the safety-related portion of the piping will be able to perform its intended function.

In the (a)(2) scoping document and LRA Table 2.2-2-IP3, the hydrogen gas system was labeled not in-scope. This system, along with the nitrogen system, has the function to provide the volume control tank (VCT) with gas for oxygen scavenging. Since the piping is directly connected to the VCT, the applicant should consider including the system in-scope for (a)(2) for potential physical interaction between the nonsafety and safety-related equipment.

Evaluate placing the hydrogen system and/or nitrogen system in-scope for (a)(2) and evaluate any other interfaces of gas system interaction with safety-related equipment.

D-RAI 2.3.0-2

Several LRA drawings identify various components as “Not A Long Lived Component,” i.e., the component is not subject to an aging management review (AMR).

- Drawing LRA-9321-2720 and LRA-9321-27203 for Unit 2 and Unit 3, respectively, show several components for the component cooling water system to the reactor coolant pumps 21, 22, 23, and 24.
- Drawing LRA-9321-2028 and LRA-9321-20283 show the pump for the Unit 2 and Unit 3 emergency diesel generator (EDG) water jacket cooling system.

In NUREG-1800, Rev. 1, Section 2.1.3.2.2 describes long-lived structures and components as those that are not subject to periodic replacement based on a qualified life or specified time period. Furthermore, it states that replacement programs may be based on vendor recommendations, plant experience, or any means that establishes a specific replacement frequency under a controlled program.

Other license renewal applications, typically have not designated pumps, motors, and heat exchangers as “not long lived,” i.e., these components, or portions thereof, are subject to an AMR.

a) Identify the component types serviced by the component cooling water system indicated in the above mentioned drawings that are shown as not long lived.
b) Provide a basis for designating these components as “not long lived” to include details on how the “qualified life” of the components was established and describe the program under which aging management activities for the components are performed, and any available plant-specific operating experience confirming the effectiveness of management activities.

Nonsafety-Related Components

LRA Sections 2.1.1.2 and 2.1.2.1.2 describe the specific details for applying the methodology for identifying nonsafety-related portions of systems with a potential for adversely affecting safety-related functions in accordance with 10 CFR 54.4(a)(2). LRA Section 2.1.2.1.3 states that license renewal drawings were prepared to indicate portions of systems that support system intended functions with the exception of those systems in-scope for 10 CFR 54.4(a)(2) for physical interactions.

Because nonsafety-related system portions meeting 10 CFR 54.4(a)(2) for physical interactions are not indicated on the license renewal drawings, further information is required by the staff to complete its review to confirm that the licensee has adequately identified components in-scope for (a)(2).

For each of the following license renewal drawings identified below, describe the specific portions of the system piping that are within the scope of license renewal for meeting 10 CFR 54.4(a)(2) for physical interactions, or justify their exclusion.

D-RAI 2.3A.3.1-1. Spent Fuel Pit Cooling System (Unit 2)

1. Drawing LRA-9321-2720 (sheet 2) - piping within the spent fuel storage building co-located with safety-related component cooling system piping in the spent fuel building between locations D1 and A3.

2. Drawing LRA-227781 - refueling water purification piping outside the spent fuel storage building co-located with safety-related piping outside the spent fuel building between locations D1 and H1 associated with the spent fuel demineralizers.

D-RAI 2.3B.3.1-2. Spent Fuel Pit Cooling System (Unit 3)

1. Drawing LRA-9321-27513 (sheet 2) - piping within the spent fuel storage building co-located with safety-related component cooling system piping in the spent fuel storage building between locations E1 and H6.

2. Drawing LRA-9321-27513 (sheet 2) - piping outside the spent fuel storage building co-located with safety-related safety injection system piping outside the spent fuel storage building at locations F6 and G6 associated with the spent fuel demineralizers.

D-RAI 2.3A.3.2-1 Service Water System (Unit 2)

1. Drawing LRA-9321-2028 - 8-inch line #1502 city water to the three emergency diesel generator 40 gallon jacket water expansion tanks.

2. Drawing LRA-9321-2722 - instrument air compressor cooling water piping inside the control building that is co-located with the service water system piping between locations G1 and I6.

3. Drawing LRA-9321-2722 - 10-inch piping (at location B5) supplying service water to the main turbine lube oil coolers.

4. Drawing LRA-9321-2722 - 16-inch piping (at location A4) supplying service water to various conventional plant services.

5. Drawing LRA-9321-2722 - 8-inch piping (at location A3) between valves SWN-4 and SWN-5.

6. Drawing LRA-9321-2722 - 8-inch piping header # 472 between locations A2 to E2, downstream of valves SWN-591, SWN-593, SWN-595, SWN-597, and SWN-599.

7. Drawing LRA-9321-2722 - 6-inch piping header downstream of valves SWN-501, SWN-502, SWN-503, SWN-504, SWN-505, and SWN-506, including connecting piping to and near SWN-507 (at location F1).

8. Drawing LRA-209762 - 2-inch piping upstream of RCV-018 from waste condensate pump discharge via line #260 and #261, (at location H2) inside the Primary Auxiliary Building (PAB).

9. Drawing LRA-235117 - 2-inch line #12 inside the service water tunnel (at location C4).

10. Drawing LRA-235117 - 3/4-inch line #1578 from the blowdown tank room to radiation monitor R-49 (at location D4).

11. Drawing LRA-235117 - 3/4-inch line #1577 containing valves MW-594, MW-600, MW-596, together with 3/4-inch line #1577 from radiation monitors R-46 (at location B2) to R-49.

12. Drawing LRA-235117 - 1-inch line #1580 from radiation monitors R-46 to R-49 up to sump pump #25 (at location E4).

13. Drawing LRA-235122 - 1-inch and 3/4-inch line #1593 between radiation monitors R-47(at location B4), R-39 (at location D4), R-40 (at location B3), and R-48 (at location B2) and from location D2.

14. Drawing LRA-235122 - 3/4-inch line #1592 and 3/4-inch line #1611 from D2 to B1.

15. Drawing LRA-226037 - 2 lines to the Victoreen radiation monitor labeled purge water in, and purge water out including valves FCV-46-2 and FCV-46-3 (at locations D4 and E3, respectively).

16. Drawing LRA-226038 - sample line “B” to and from heat exchanger HTX-49-1 from location A4 to C4.

17. Drawing LRA-226038 - purge water out line “D” and purge water In line “E”, and purge water out including valves FCV-49-2 and FCV-49-3 (at locations D4 and E3, respectively).

18. Drawing LRA-242687 - purge water out line “D” and purge water in line “E”.

D-RAI 2.3B.3.2-1. Service Water System (Unit 3)

1. Drawing LRA-9321-20283 - 3/4-inch line #1033 city water to the three emergency diesel generator 40 gallon jacket water expansion tanks.

2. Drawing LRA-9321-20333 - 10-inch and 16-inch lines originating at valves SWN-6 and SWN-7 (at location F4) and FCV-1111 and FCV-1112 (at location F4).

3. Drawing LRA-9321-20333 - piping associated with service water strainer blowdown valves SWN 64-1 (at location C2), SWN-64-2 (at location C3), SWN-64-3 (at location C4), SWN 64-4 (at location C5), SWN 64-5 (at location C6), and SWN 64-6 (at location C7) up to its anchor.

4. Drawing LRA-9321-20333 - 3-inch and 8-inch lines originating between valves SWN-4 and SWN-5 (at location D-5), in their entirety.

D-RAI 2.3A.3.3-1 Component Cooling Water System (Unit 2)

Drawing LRA-9321-2730 - lines surrounding component cooling supply to #21 and #22 waste gas compressors.

D-RAI 2.3B.3.3-1 Component Cooling Water System (Unit 3)

Drawing LRA-9321-27303 - lines surrounding component cooling supply to #31 and #32 waste gas compressors.

D-RAI 2.3A.3.5-1 Gas System (Unit 2)

Drawing LRA-9321-2723-0 – line 1”-CH-151R-LINE#115 that is directly connected to the volume control tank.

D-RAI 2.3A.3.18-1 Plant Drains System - Waste Disposal System (Unit 2)

Drawing LRA-9321-2719 - containment penetrations Y and Z outside of the safety-related boundary that is structurally attached to the containment penetration piping both inside and outside containment at locations C1 and C2, respectively.

D-RAI 2.3B.3.18-1 Plant Drains System - Liquid Waste Disposal System (Unit 3)

Drawing LRA-9321-27193 (sheet 1) - containment penetrations Y and Z outside of the safety-related boundary that is structurally attached to the containment penetration piping both inside and outside containment (at locations C3 and D3, respectively).

D-RAI 2.3A.3.13-1 Fuel Oil System (Unit 2)

1. Drawing LRA-9321-2030 - 3/4-inch line from 21 diesel generator fuel oil drip tank drain pump 21 and associated valves structurally attached to fuel oil day tank No. 21 between locations G2 and G4.

2. Drawing LRA-9321-2030 - 3/4-inch line from 22 diesel generator fuel oil drip tank drain pump 22 and associated valves structurally attached to fuel oil day tank no. 22 between locations D2 and D4.

3. Drawing LRA-9321-2030 - 3/4-inch line from 23 diesel generator fuel oil drip tank drain pump 23 and associated valves structurally attached to fuel oil day tank no. 23 between locations B2 and B4.

D-RAI 2.3B.3.13-1 Fuel Oil System (Unit 3)

1. Drawing LRA-9321-20303 - 3/4-inch line # 1103 near 31 diesel generator fuel oil drip tank drain pump 31 discharge and associated valves structurally attached to fuel oil day tank no. 31 between locations B4 and E3.

2. Drawing LRA-9321-20303 - 3/4-inch line # 1106 near diesel generator fuel oil drip tank drain pump 32 discharge and associated valves structurally attached to fuel oil day tank no. 32 between locations B6 and E5.

3. Drawing LRA-9321-20303 - 3/4-inch line # 1106 near diesel generator fuel oil drip tank drain pump 33 discharge and associated valves structurally attached to fuel oil day tank no. 33 between locations B7 and E7.

D-RAI 2.3A.3.14-2 Emergency Diesel Generators (Unit 2)

Drawing LRA-9321-2028 - 3/4-inch line from city water system (for makeup) structurally attached to 21, 22, and 23 jacket water expansion tanks, including valves and LCV-5004, LCV-5005, and LCV-5006, located between B5/6 and H5/6 and in the EDG room.

D-RAI 2.3B.3.14-2 Emergency Diesel Generators (Unit 3)

Drawing LRA-9321-20283 - 3/4-inch line #1033 from city water system (for makeup) structurally attached to 31 (3/4-inch line #1033), 32 (3/4-inch line #1034), and 33 (3/4-inch line #1035) jacket water expansion tanks, including valves and associated level control valves located between D2 and D7 and in the EDG room.

Fire Protection

D-RAI 3.0.3.2.7-1

LRA Table 2.4-4 lists fire stops and fire wrap as bulk commodities that perform an intended function of fire barrier. LRA Table 3.5.2-4, “Bulk Commodities,” identifies the material, environment and aging effect requiring aging management for these two commodities. The Fire Protection Program is identified as the aging management program along with Note J which indicates that neither the component nor the material and environment combination is evaluated in NUREG-1801. However, in LRA Section B.1.13, “Fire Protection,” there is no indication that fire stops and fire wrap are included as commodities whose aging effects will be managed by the AMP. Describe how the aging effects of cracking/delamination, separation (for fire stops), and loss of material (for fire wrap) will be managed under the Fire Protection AMP.

Nickel Alloy

D-RAI 3.0.3.3.5-1

The Nickel Alloy Inspection Program for the monitoring and trending program element states that records of the inspection program, examination and test procedures, examination/test data, and corrective actions taken or recommended are maintained in accordance with the requirements of ASME Section XI, Subsection IWA.

The Standard Review Plan for License Renewal (SRP-LR) Section A.1.2.3.5, and SRP-LR Table A.1-1 state that:

> Monitoring and trending activities should be described, and they should provide predictability of the extent of degradation and thus effect timely corrective or mitigative actions. Plant-specific and/or industry-wide operating experience may be considered in evaluating the appropriateness of the technique and frequency. This program element describes "how" the data collected are evaluated and may also include trending for a forward look. This includes an evaluation of the results against the acceptance criteria and a prediction regarding the rate of degradation in order to confirm that timing of the next scheduled inspection will occur before a loss of SC intended function. Although aging indicators may be quantitative or qualitative, aging indicators should be quantified, to the extent possible, to allow trending. The parameter or indicator trended should be described. The methodology for analyzing the inspection or test results against the acceptance criteria should be described. Trending is a comparison of the current monitoring results with previous monitoring results in order to make predictions for the future.

Please describe how the monitoring and trending program elements will be addressed in the Nickel Alloy Inspection Program.

D-RAI 3.0.3.3.5-2

LRA Table 3.1.1, Item 3.1.1-31 is applicable to NUREG-1801, Rev. 1, Items IV.A2-12, IV.A2-19, and IV.C2-13, which specify that an acceptable aging management program is to comply with applicable NRC Orders and provide a commitment in the FSAR supplement to implement applicable (1) Bulletins and Generic Letters and (2) staff-accepted industry guidelines.

The statement in the Nickel Alloy Inspection Program states that Indian Point will "continue to" implement commitments associated with (1) NRC Orders, Bulletins and Generic Letters associated with nickel alloys and (2) staff accepted industry guidelines.

The intent of this statement is unclear. Please clarify that the applicant commits to comply with applicable Bulletins, Generic Letters and staff-accepted industry guidelines.