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May 13, 1997
IPN-97-060

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
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Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Response To Request For Additional Information
Proposed Change to Technical Specifications
Regarding Incorporation of 10 CFR 50, Appendix J, Option B

References:
1. NRC Letter, George F. Wunder to James Knubel, dated April 28, 1997, "Request for Additional information: 'Proposed Change to Technical Specifications Regarding Incorporation of 10 CFR 50, Appendix J, Option B.'"
2. NYPA Letter (IPN-97-006), William J. Cahill, Jr. to NRC, dated January 13, 1997, "Proposed Change to Technical Specifications Regarding Incorporation of 10 CFR 50, Appendix J, Option B."

Dear Sir:

This letter provides the New York Power Authority (NYPA) response (Attachment 1) to an NRC request for additional information (Reference 1) regarding an application to change Technical Specifications (Reference 2) to incorporate 10 CFR 50, Appendix J, Option B. This response to the request for additional information provides additional details on the exceptions taken to ANSI/ANS 56.8 - 1994.

The Authority is making no new commitments in this response.

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If you have any questions, please contact Ms. C. Faison.

Very truly yours,

J. Knubel
Senior Vice President and
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Attachment: as stated

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1. NRC Request For Additional Information On NYPA Letter No. IPN-97-006

Regarding exception "a" of part 6.14 of your proposed technical specification implementing 10 CFR Part 50 Appendix J, Option B:

a. Describe in detail the basis for requesting this exception for the WCCPPS. Describe how and in what way the WCCPPS or its isolation valves are potential containment atmospheric leakage paths. Please describe any programs or procedures that may supplement our understanding of the subject.

b. Describe how IP3 would not be in compliance with regulatory requirements if this exception were not approved. Explain why this exception is necessary.

NYPA Response to Request For Additional Information

a. The basis for requesting this exception was NYPA's understanding of the requirements of 10 CFR 50, Appendix J, Option B, Section V.B, "Implementation," which states "The regulatory guide or other implementation document used by a licensee, or applicant for an operating license, to develop a performance based leakage-testing program must be included, by general reference, in the plant technical specifications. The submittal for technical specification revisions must contain justification, including supporting analyses, if the licensee chooses to deviate from methods approved by the Commission and endorsed in a regulatory guide." Since Regulatory Guide 1.163 endorses ANSI/ANS 56.8 - 1994, NYPA interpreted the rule to require specific exceptions. The basis for the exception is the licensed design of IP3 which does not treat the WCCPPS or its isolation valves as isolation boundaries.

The WCCPPS is described in FSAR Section 6.6. Section 6.6.1 states that the WCCPPS provides "pressurized gas to all containment penetrations and most liner inner weld seams such that, in the event of a LOCA, there would be no leakage through these potential leakage paths from the containment to the atmosphere. Spaces between selected isolation valves are also served by the WCCPPS." Following an accident, the WCCPPS will maintain pressure greater than the post accident pressure so any postulated leakage would be into the Containment rather than out of the Containment. FSAR Figure 6.6-1 is a flow diagram of the WCCPPS. This figure depicts the four WCCPPS zones which supply pressurized gas and show how and in what way the WCCPPS lines are potential containment atmospheric leakage paths due to their supply connections to the various WCCPPS loads, as follows:

- WCCPPS to liner weld seams and between the fuel transfer tube seals presents no potential leakage path since the system is defined in FSAR Section 5.2.2 as closed inside containment. The channels over the liner weld seams and the fuel transfer gasket seals are verified as leak tight

by normal system operation. WCCPPS to these loads has an isolation valve in the two lines penetrating containment. The exception does not apply to these boundaries since they are not potential leakage paths.

- WCCPPS to containment penetrations has a line supplying each penetration but these present no potential leakage path since the penetrations were designed with double seals which are continuously pressurized above accident peak pressure and the inner portion of the penetration represents the leakage barrier. The WCCPPS serves to verify the integrity of this barrier during normal operation. The exception does not apply to these boundaries, even though WCCPPS breaches the penetration boundary, since they are not potential leakage paths. The mini-containment is considered as a containment penetration.

- WCCPPS to 80 foot and 95 foot air locks has a 1" and a 1/2" line supplying each set of seals as well as the vent valves that are part of the air lock boundary (CB-3, 4, 7 and 8). The exception is considered to apply to these two lines since they are not designated as containment isolation boundaries. The WCCPPS serves to verify the integrity of this barrier during normal operation. During air lock testing every six months per 3PT-SA09, manual weld channel valves to the air lock seals (manual valve 25 to the 80 foot air lock and manual valve 27 to the 95 foot air lock) are subjected to test pressure (greater than Pa) and, since the lines behind these valves are vented, leakage would be measured:

- WCCPPS provides compressed gas between containment isolation valves (CIV) on several process lines that contain air. The exception applies to these lines since they are not designated as containment isolation boundaries even though they are connected to the space between two isolation boundaries. The WCCPPS serves to verify the integrity of the isolation boundaries during normal operation.

The WCCPPS lines are considered in Type C testing. To perform Type C testing of the CIVs, the closest WCCPPS valve to the isolation valves being tested is closed and the line between the isolation valves is pressurized. The leak tightness of a WCCPPS isolation valve is therefore tested. Nevertheless, the WCCPPS valves are not identified in the FSAR as containment isolation valves (the WCCPPS lines are shown in the FSAR as connections between isolation valves and no WCCPPS isolation valves were shown) because the system was licensed as a seal system.

A description of these lines, the valving arrangement on these lines and testing performed on the lines is as follows:

1. Penetration EE (FSAR line 48) from VC purge makeup fans: WCCPPS pressurizes one 1" line between inboard CIV 1170 and outboard CIV 1171. WCCPPS is supplied through normally open, fail open (loss of electrical power) SOV 1277 and manual valve 1110-5. Appendix J testing, per 3PT-R35, data sheet 37, shuts the isolation valves and valve 1110-5 to pressurize the line. Valve 1277 is not tested since this valve would be open post accident to provide WCCPPS gas.

2. Penetration FF (FSAR line 49) to VC purge exhaust fans: WCCPPS pressurizes one 1" line between inboard CIV 1172 and outboard CIV 1173. WCCPPS is supplied through normally open, fail open (loss of electrical power) SOV 1278 and manual valve 1110-6. Appendix J testing, per 3PT-R35, data sheet 38, shuts the isolation valves and valve 1110-6 to pressurize the line. Valve 1278 is not tested since this valve would be open post accident to provide WCCPPS gas.

3. Penetrations R, TT, and LL (FSAR line 57) to containment hydrogen monitor B: WCCPPS pressurizes one 1/2" line between inboard CIV SOV-506, 507 and 508 and outboard CIV 509. WCCPPS is supplied through normally open manual valve 44 then parallel, normally open, fail closed (loss of electrical power) SOVs 1001 and 1002. Appendix J testing, per 3PT-R35, data sheet 23, shuts the isolation valves and valves 1001 and 1002 to pressurize the line. Valve 44 is not tested since this valve would be open post accident to provide WCCPPS gas. Note that valves 44, 1001 and 1002 are manually closed during post accident operations to place the hydrogen monitor in service.

4. Penetrations Z and O (FSAR line 57) to containment hydrogen monitor A: WCCPPS pressurizes one 1/2" line between inboard CIV 512 and 513 and outboard CIV 514. WCCPPS is supplied through normally open manual valve 46 then parallel, normally open, fail closed (loss of electrical power) SOVs 1005 and 1006. Appendix J testing, per 3PT-R35, data sheet 25, shuts the isolation valves and valves 1005 and 1006 to pressurize the line. Valve 46 is not tested since this valve would be open post accident to provide WCCPPS gas. Note that valves 46, 1005 and 1006 are manually closed during post accident operations to place the hydrogen monitor in service.

5. Penetration O (FSAR line 57) from containment hydrogen monitor A: WCCPPS pressurizes one 1/2" line between inboard

CIV 511 and outboard CIV 510. WCCPPS is supplied through normally open manual valve 45 then parallel, normally open, fail closed (loss of electrical power) SOVs 1003 and 1004. Appendix J testing, per 3PT-R35, data sheet 24, shuts the isolation valves and valves 1003 and 1004 to pressurize the line. Valve 45 is not tested since this valve would be open post accident to provide WCCPPS gas. Note that valves 45, 1003 and 1004 are manually closed during post accident operations to place the hydrogen monitor in service.

6. Penetration R (FSAR line 57) from containment hydrogen monitor B: WCCPPS pressurizes one 1/2" line between inboard CIV 516 and outboard CIV 515. WCCPPS is supplied through normally open manual valve 47 then parallel, normally open, fail closed (loss of electrical power) SOVs 1007 and 1008. Appendix J testing, per 3PT-R35, data sheet 26, shuts the isolation valves and valves 1007 and 1008 to pressurize the line. Valve 47 is not tested since this valve would be open post accident to provide WCCPPS gas. Note that valves 47, 1007 and 1008 are manually closed during post accident operations to place the hydrogen monitor in service.

7. Penetration PP (FSAR line 50) Containment pressure relief: WCCPPS pressurizes one 1" line (line one) between inboard CIV 1190 and center CIV 1191 and one 1" line (line two) between center CIV 1191 and outboard CIV 1192. WCCPPS line one is supplied through normally open, fail open (loss of electrical power) SOV 1280 then normally open manual valve 1110-7. WCCPPS line two is supplied through normally open, fail open (loss of electrical power) SOV 1279 then normally open manual valve 1110-8. Appendix J testing, per 3PT-R35, data sheets 39 and 40, shuts the isolation valves and valves 1110-7 and 1110-8 to pressurize the line. Valves 1279 and 1280 are not tested since these valves would be open post accident to provide WCCPPS gas.

8. Penetration LL (FSAR line 65) Post Accident Venting exhaust line: WCCPPS pressurizes one 1/2" line between inboard CIV 7 and outboard CIV 8, 9 and 10. WCCPPS is supplied through parallel, normally open manual valves 67 and 68. Appendix J testing, per 3PT-R35, data sheet 36, shuts the isolation valves and valves 67 and 68 to pressurize the line.

9. Penetration R (FSAR line 34) return from steam jet air ejectors: WCCPPS pressurizes one 1" line between inboard CIV 1229 and

outboard CIV 1230. WCCPPS is supplied through parallel, normally open, fail open (loss of electrical power or instrument air) PCVs 1231 and 1233. Appendix J testing, per 3PT-R35, data sheet 33, shuts the isolation valves and valves 1231 and 1233 to pressurize the line.

10. Penetration RR (FSAR line 33) air sample to Post Accident Air Sample System: WCCPPS pressurizes one 1/2" line between inboard CIV 1236 and outboard CIV 1237. WCCPPS is supplied through parallel, normally closed, fail open (loss of electrical power or instrument air) PCVs 1240 and 1241. Appendix J testing, per 3PT-R35, data sheet 35, shuts the isolation valves and valves 1240 and 1241 to pressurize the line.

11. Penetration RR (FSAR line 32) air sample from Post Accident Air Sample System: WCCPPS pressurizes one 1/2" line between inboard CIV 1234 and outboard CIV 1235. WCCPPS is supplied through parallel, normally closed, fail open (loss of electrical power or instrument air) PCVs 1238 and 1239. Appendix J testing, per 3PT-R35, data sheet 34, shuts the isolation valves and valves 1238 and 1239 to pressurize the line.

The WCCPPS lines identified above are part of an Engineered Safety Feature (ESF) system that operates post accident. The WCCPPS lines were not designed to be isolated post accident since they are required to be open post accident to perform the WCCPPS seal function as described in the FSAR. The WCCPPS lines do not constitute a vent path since the lines are filled with seal gas at a pressure higher than post accident pressure and later, when containment pressure is significantly reduced, the WCCPPS boundary would act to prevent leakage. The WCCPPS is pressurized during normal operation in accordance with Technical Specification requirements. Any breach of the WCCPPS boundary, either during normal operation or accident conditions, would be detectable with continuous on line monitors. A breach of the WCCPPS boundary during an accident was not considered in the licensing basis but, if it were assumed, the inboard isolation valve or air lock seal would be available to limit containment leakage. The WCCPPS lines are one inch or less. Since the criteria of ANS 56.8 - 1994 do not identify the WCCPPS, the exception was requested.

The NRC review of Appendix J testing is found in Inspection Report (IR) 50-286/74-26, dated January 15, 1975. That report states "The inspector questioned why the Penetration and Weld Channel Pressurization System containment isolation valves were not subject to

Type "C" tests. The inspector stated that these valves could be exempted from testing , if the licensee could demonstrate that the weld channels were welded to the applicable ASME code." Inspection Report 50-286/75-28, dated December 4, 1975, identifies the inspectors review of documentation and conclusion that the weld channel was welded by the same procedure as the liner, by welders qualified to weld the liner. This closed the question in IR 74-26.

At the time the operating license was issued, the FSAR identified the WCCPPS lines to the containment isolation valves and no isolation valves were identified. This is consistent with the design of a seal system. The SER issued September 21, 1973 says that the isolation valve arrangements were reviewed for conformance with General Design Criteria 54, 55, 56 and 57 and found to meet the intent of those criteria. The SER supplement, issued December 12, 1975, says that the valves needed to meet the containment isolation requirements of General Design Criteria 54, 55, 56 and 57 that would not be tested were identified. The NRC concluded the intent of the Type C requirements of 10 CFR 50, Appendix J, were met.

b. If this exception were not approved, IP3 would not be able to implement Option B without a design change and associated Technical Specification change. These would be necessary to avoid being in non-compliance with 10 CFR 50, Appendix J, Option B, Section V.B requirement to identify exceptions.

2 NRC Request For Additional Information On NYPA Letter No. IPN-97-006

In light of the exception "b" of part 6.14 of your proposed technical specifications, please provide the following information:

a. Describe the current IP3 practice for testing between containment isolation valves, where testing is not in the direction of flow. Provide all relevant information on programs and procedures.

b. The provision from which exception is being sought has existed as a requirement in Appendix J (now called Option A) since it was first published in 1973, and is currently a requirement for IP3. Either IP3 (1) is in compliance with the requirement, in which case the requested exemption is unnecessary; (2) has a NRC-granted exemption; or (3) is not in compliance with the current requirement. Discuss IP3's current compliance with this requirement. If the NRC staff has previously reviewed this issue for IP3, provide a detailed description or reference to such review.

NYPA Response to Request For Additional Information

a. IP3 Type C testing of containment isolation valves is performed under test procedure 3PT-R35. The configurations for these tests are discussed in the response to question 1 for valves sealed by WCCPPS and the configuration of tests for other valves is similar. When a configuration is tested by pressurizing between the valves, the total leakage from the test is assessed with respect to the allowable leakage for the individual valves. The allowable leakage for the individual valves is determined by taking the allowable leakage (currently 0.5La), deducting a certain portion for Type B tests, and allocating the remaining leakage based on line size (a total of the valve sizes divided into the allowable leakage gives a fixed leakage per inch of valve) and valve type (allow for twice as much leakage through check valves).

b. The provision from which exception is being sought has existed as a requirement in Appendix J (now called Option A) since it was first published in 1973. The requirement in 10 CFR 50, Appendix J, Option A, Section III.C.1 requires the pressure to be applied in the same direction as that when the valve would be required to perform it's safety function unless it can be determined that the results for a pressure applied in a different direction will provide equivalent or more conservative results. The results are considered equivalent or more conservative since the methodology results in more conservative leakages being applied to the valves. The NRC staff has reviewed and approved the methodology used by IP3 for testing of containment isolation valves. Inspection Report 50-286/74-26, dated January 15, 1975, states "The inspector reviewed the following documents against 10 CFR 50, Appendix J, to verify type "B" and "C" testing, which should be completed prior to the ILRT, were being performed properly. (1) "Containment Isolation Valve Leakage" Test Procedure, INT-TP-4.11.10." Inspection Report 50-286/75-28, dated December 4, 1975, stated "This inspection procedure has been reviewed and accepted." Additionally, the NRC has also approved Inservice Test Program relief request VR-33. The requirement was to trend and analyze individual category A valve leakage rates as required by IWV-3426 and IWV-3427. Alternate testing was based on the current test methodology and says "valves will be leak tested simultaneously in multiple valve arrangements and a maximum permissible leakage rate will be applied to each combination of valves."

The basis for requesting this exception was NYPA's understanding of the requirements of 10 CFR 50, Appendix J, Option B, Section V.B, "Implementation" which was discussed above. The basis for the exception was the licensed design of IP3. Testing by pressurizing between isolation valves was the manner in which IP3 was designed and licensed and the methodology assures equivalent results.