

ATTACHMENT I TO IPN-93-036

PROPOSED TECHNICAL SPECIFICATION CHANGES

RELATED TO

**CHEMICAL AND VOLUME CONTROL
SYSTEM TESTING TO ACCOMMODATE A 24 MONTH OPERATING CYCLE**

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

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PDR ADOCK 05000286
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I

PROPOSED CHANGES TO
APPENDIX A
TECHNICAL SPECIFICATIONS AND BASES

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
DPR-64

TABLE 4.1-1 (Sheet 2 of 5)

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
10. Steam Generator Level	S	18M	Q	
11. Residual Heat Removal Pump Flow	N.A.	18M	N.A.	
12. Boric Acid Tank Level	S	24M	N.A.	Bubbler tube rodded during calibration
13. Refueling Water Storage Tank Level	W	18M	N.A.	Low level alarms
14. Containment Pressure	S	18M	Q	High and High-High
15. Process and Area Radiation Monitoring Systems	D	18M	Q	
16. Containment Water Level Monitoring System:				
a. Containment Sump	N.A.	18M	N.A.	Narrow Range, Analog
b. Recirculation Sump	N.A.	18M	N.A.	Narrow Range, Analog
c. Containment Water Level	N.A.	18M	N.A.	Wide Range
17. Accumulator Level and Pressure	S***	18M	N.A.	
18. Steam Line Pressure	S	18M	Q	
19. Turbine First Stage Pressure	S	18M	Q	
20. Reactor Protection Relay Logic	N.A.	N.A.	TM	
21. Turbine Trip Low Auto Stop Oil Pressure	N.A.	18M	N.A.	
22. Boron Injection Tank Return Flow	S	18M	N.A.	

Amendment No. 8, 38, 63, 68, 74, 93, 107, 123

TABLE 4.1-1 (Sheet 3 of 5)

<u>Channel Description</u>	<u>Check</u>	<u>Calibrate</u>	<u>Test</u>	<u>Remarks</u>
23. Temperature Sensor in Auxiliary Boiler Feedwater Pump Building	N.A.	N.A.	18M	
24. Temperature Sensors in Primary Auxiliary Building				
a. Piping Penetration Area	N.A.	N.A.	18M	
b. Mini-Containment Area	N.A.	N.A.	18M	
c. Steam Generator Blowdown Heat Exchanger Room	N.A.	N.A.	18M	
25. Level Sensors in Turbine Building	N.A.	N.A.	18M	
26. Volume Control Tank Level	N.A.	18M	N.A.	
27. Boric Acid Makeup Flow Channel	N.A.	24M	N.A.	
28. Auxiliary Feedwater:				
a. Steam Generator Level	S	18M	Q	Low-Low
b. Undervoltage	N.A.	18M	18M	
c. Main Feedwater Pump Trip	N.A.	N.A.	18M	
29. Reactor Coolant System Subcooling Margin Monitor	D	18M	N.A.	
30. PORV Position Indicator	N.A.	18M	18M	Limit Switch
31. PORV Position Indicator	D	18M	18M	Acoustic Monitor
32. Safety Valve Position Indicator	D	18M	18M	Acoustic Monitor
33. Auxiliary Feedwater Flow Rate	N.A.	18M	N.A.	

TABLE 4.1-3 (Sheet 1 of 2)

FREQUENCIES FOR EQUIPMENT TESTS		
	<u>Check</u>	<u>Frequency</u>
1. Control Rods	Rod drop times of all control rods	24M
2. Control Rods	Movement of at least 10 steps in any one direction of all control rods	Every 31 days during reactor critical operations
3. Pressurizer Safety Valves	Set Point	24M
4. Main Steam Safety Valves	Set Point	18M
5. Containment Isolation System	Automatic actuation	24M
6. Refueling System Interlocks	Functioning	Each refueling, prior to movement of core components
7. Primary System Leakage	Evaluate	5 days/week
8. Diesel Generators Nos. 31, 32 & 33 Fuel Supply	Fuel Inventory	Weekly
9. Turbine Steam Stop Control Valves	Closure	Yearly
10. L.P. Steam Dump System (6 lines)	Closure	Monthly
11. Service Water System	Each pump starts and operates for 15 minutes (unless already operating)	Monthly
12. City Water Connections to Charging Pumps and Boric Acid Piping	Temporary connections available and valves operable	24M

PROPOSED CHANGES TO
APPENDIX B
ENVIRONMENTAL TECHNICAL SPECIFICATION REQUIREMENTS

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
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TABLE 3.1-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS				
INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRA- TION	CHANNEL FUNC- TIONAL TEST
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluent Line	D*	D*	R(3)	Q(1)*
b. Steam Generator Blowdown Effluent Line	D*	M*	R(3)	Q(1)*
2. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE				
a. Service Water System Effluent Line	D*	M*	R(3)	Q(2)*
3. FLOW RATE MEASUREMENT <u>DEVICES</u>				
a. Liquid Radwaste Effluent Line	D(4)	N.A.	R	Q
b. Steam Generator Blowdown Effluent Line	D(4)	N.A.	R	N.A.
4. RADIOACTIVITY RECORDERS				
a. Liquid Radwaste Effluent Line	D*	N.A.	R	Q****
b. Steam Generator Blowdown Effluent Line	D*	N.A.	R	Q****
5. TANK LEVEL INDICATING DEVICES***				
a. Refueling Water Storage Tank	D**	N.A.	R	R
b. Primary Water Storage Tank	D**	N.A.	24M	24M
c. Monitor Tank #31	D**	N.A.	R	R
d. Monitor Tank #32	D**	N.A.	R	R

* When this pathway is utilized for releases, with frequency no more than indicated.

** During liquid additions to the tank.

*** Tanks included in this specification are those outdoor tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and do not have tank overflows and surrounding area drains connected to the liquid radwaste treatment system.

**** Required only if alarm/trip setpoint is based on recorder-controller.

ATTACHMENT II TO IPN-93-036

SAFETY EVALUATION

RELATED TO

**CHEMICAL AND VOLUME CONTROL
SYSTEM TESTING TO ACCOMMODATE A 24 MONTH OPERATING CYCLE**

TECHNICAL SPECIFICATION CHANGES

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
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Section I - Description of Changes

This application for amendment to the Indian Point 3 Technical Specifications proposes to change the frequency of chemical and volume control system testing to accommodate operation with a 24 month operating cycle.

Starting with cycle nine (August, 1992), Indian Point 3 began operating on 24 month cycles, instead of 18 month cycles. The specific Technical Specifications that will be changed by this application are:

- Boric Acid Tank level calibration.
- Boric Acid Makeup Flow Channel calibration.
- City Water connections to charging pumps and boric acid piping.
- Primary Water Storage Tank channel calibration and functional test.

Section II - Evaluation of Changes

Starting with cycle nine (August, 1992), Indian Point 3 began operating on 24 month cycles, instead of 18 month cycles. To avoid either an 18 month surveillance outage or an extended mid-cycle outage, changes are required to the chemical and volume control system surveillance test and calibration intervals. In order to justify extending surveillance intervals to be consistent with the length of the operating cycle, the following factors were considered: the importance of the refueling tests (i.e., does on-line testing demonstrate operability, or are failures only being detected during the refueling tests?), and past equipment performance (and the effect on system safety functions). Starting below is an evaluation for each technical specification that this application proposes to change.

City Water connections to charging pumps and boric acid piping

The Technical Specification Bases for the Chemical and Volume Control System describes the use of city water supply. It states that the city water system is used as a source of water for emergency cooling of the charging pumps and as a source of flush water to remove concentrated boric acid from the piping between the outlet of the boric acid storage tanks and the inlet to the charging pumps in the unlikely event of a complete loss of electrical power and/or a complete loss of service water resulting from turbine missiles.

The Technical Specifications Table 4.1-3, item 12 requires a check that temporary connections are available and the valves are operable. The surveillance test for the charging pump cooling verifies flow through valve MW-684 which is the valve that separates the two systems. The surveillance for the boric acid transfer pump city water supply verifies that there is sufficient hose and proper fittings to connect from the city water supply to each suction of the boric acid transfer pumps. In addition, the city water valve is opened to verify water flow.

Review of past performance tests on the city water connections and operational occurrence logs shows that no test failures have occurred during the last 5 years (1986-1991). This test verifies the operability of two valves, the availability of a connecting hose and fittings and that there is

flow from the existing city water supply. Since modifications and other physical changes of this system do not normally occur during plant operations and since no test failures have occurred, this test can be extended for the 24 month operating cycle.

Calibrations

The "once per cycle" channel calibrations listed below are an adjustment of each of the instrument channel's response to a known input process variable. A review of surveillance history and occurrence reports shows that failures, if they occur, are detected by daily channel checks on level, flow, pressure, etc. or by quarterly or other online surveillance tests. Consequently, this supports the extension of the calibration for the 24 month operating cycle.

The importance of the nominal 18 month channel calibration is to correct instrument drift, if it is occurring and to "tune up" the instrument loop components by adjusting (aligning) each component to "nominal" conditions (i.e., the midpoint of tolerance limits). The channel calibration is more appropriately considered a maintenance activity rather than an operability check.

The CVCS instruments are for indication and alarm purposes and are not needed for actuation of safety related equipment for accident mitigation. An evaluation of past instrument drift for this equipment has shown that instrument drift is predictable. The vendor drift allowance (VDA30) and the best estimate of drift (BED30) for 30 months are equivalent. The vendor drift allowance is the calibration tolerance limits or the combination of reference accuracy, drift, and Measuring and Test Equipment (M&TE); the best estimate of drift is the average observed drift extrapolated for 30 months. The best estimate of drift was determined as follows: (1) for each of the three safety valves, worst case drift (as-found value minus the previous interval's as-left value) data points are determined; (2) the drift values from step (1) were extrapolated to 30 month values using the square root sum of the squares technique; (3) finally, the 30 month values were arithmetically averaged to give a "best estimate of drift" for a 30 month period.

Boric Acid Tank level calibration

Future drift (BED30) for the Boric Acid Tank level transmitters and the level indicators will remain within the acceptable limits (i.e., the VDA30 or Calibration Tolerance).

The bistables provide a low level alarm, and BAT heater cutoff. They do not provide any actuation of safety related equipment nor are they relied on to mitigate the consequences of an accident. In addition, the alarm is verified by the indicators, which are checked at least daily. The increased bistable inaccuracy due to the slightly higher calculated BED30 would yield an error of approximately $\frac{1}{8}$ " of water, which is negligible compared to the 105 $\frac{1}{2}$ " of water for the span of the instrument. Also, combining data for bistables of the same make and similar models yields a BED30 which is less than the VDA30. Therefore, this calibration may be extended for the 24 month operating cycle.

Boric Acid Makeup Flow Channel calibration

Predicted drift for the Boric Acid Flow Transmitter is predicted to be within the acceptable limits (i.e., the VDA30 or Calibration Tolerance).

Predicted drift for the Boric Acid Flow Indicator and Recorder was not calculated because the calibration was previously performed as part of the overall Boric Acid flow channel calibration for the transmitter. In 1991, the transmitter calibration procedure was revised to include separate calibrations for the indicators and recorder. However, the postulated increases in instrument drift associated with the longer time interval are expected to remain predictable and within the vendor recommended drift allowances because of the previous checks which were done on the indicator and recorder.

These instruments are used only to indicate whether there is flow; no equipment actuation is accomplished. Since these instruments are used only for indication or alarm (and are not used to mitigate the consequences of an accident) and the calculated BED30 is well below the vendor prediction for drift for the 24 month operating cycle, the extension of this calibration is acceptable.

Primary Water Storage Tank Channel calibration and functional test

The Primary Water Storage Tank level calibration test is listed in the Radiological and Environmental Technical Specifications. In addition to a calibration, this test describes the performance of a channel functional test for the level indicators and alarms. Indicated tank volumes are used in calculations for the Effluent and Waste Disposal Semi-Annual Report. An increase in the indicated volume due to instrument drift has a minimal affect since the additional tank volume would only be a small contribution for the total liquid effluent volume. Therefore, this calibration may be extended for the 24 month operating cycle.

Based on the above, it is concluded that the longer calibration intervals will not affect safe plant operations.

Section III - No Significant Hazards Evaluation

Consistent with the requirements of 10 CFR 50.92, the enclosed application is judged to involve no significant hazards based on the following information:

- (1) Does the proposed license amendment involve a significant increase in the probability or consequences of any accident previously evaluated?

Response:

The proposed changes do not involve a significant increase in the probability or consequences of any accident previously analyzed. These changes propose extending the surveillance intervals for chemical and volume control system testing. The changes do not involve any physical changes to the plant, nor do they alter the way any equipment functions. An evaluation of past equipment performance and other system testing (e.g., monthly tests) provides assurance that the longer surveillance intervals will not degrade system performance.

- (2) Does the proposed license amendment create the possibility of a new or different kind of accident from any previously evaluated?

Response:

The proposed changes do not create the possibility of a new or different kind of accident from any previously analyzed. These changes propose extending the surveillance intervals for chemical and volume control system testing. The changes do not involve any physical changes to the plant, nor do they alter the way any equipment functions. An evaluation of past equipment performance and other system testing (e.g., monthly tests) provides assurance that the longer surveillance intervals will not degrade system performance.

- (3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response:

The proposed changes do not involve a significant reduction in a margin of safety. These changes propose extending the surveillance intervals for chemical and volume control system testing. The changes do not involve any physical changes to the plant, nor do they alter the way any equipment functions. An evaluation of past equipment performance and other system testing (e.g., monthly tests) provides assurance that the longer surveillance intervals will not degrade system performance.

Section IV - Impact of Changes

These changes will not adversely impact the following:

ALARA Program
Security and Fire Protection Programs
Emergency Plan
FSAR and SER Conclusions
Overall Plant Operations and the Environment

Section V - Conclusions

The incorporation of these changes: a) will not increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report; b) will not increase the possibility for an accident or malfunction of a different type than any evaluated previously in the Safety Analysis Report; c) will not reduce the margin of safety as defined in the bases for any technical specification; d) does not constitute an unreviewed safety question; and e) involves no significant hazards considerations as defined in 10 CFR 50.92.

Section VI - References

- 1) IP3 SER
- 2) IP3 FSAR