123 Main Street
White Plains, New York 1
914 681.6200

New York Power Authority

**J. Phillip Bayne**
Executive Vice President
Nuclear Generation

October 29, 1984
IPN-84-47

Director of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
Division of Licensing

Subject: Indian Point 3 Nuclear Power Plant
Docket No. 50-286
Proposed Technical Specifications - NUREG-0737

Dear Sir:

By letter dated February 17, 1984 the Authority responded to Generic Letter 83-37, "NUREG-0737 Technical Specifications", which requested technical specifications for eleven NUREG-0737 items. The Authority's response provided technical specifications for three items, indicated that technical specifications were not necessary for two items and deferred submittal of technical specifications for six items until a future refueling outage. Your letter dated May 4, 1984 requested the submittal of technical specifications for the six deferred items. This letter serves to transmit technical specifications for the six deferred items, for your review. The Authority will formally submit a license amendment upon receipt and incorporation, if necessary, of any NRC comments, and prior to startup from the refueling outage in which these items will be implemented.

Attachment 1 to this letter provides the proposed technical specifications with regard to the Reactor Coolant System Vents (Item II.B.1), Noble Gas Monitor (Item II.F.1.1), Containment Water Level Monitor (Item II.F.1.5), Containment Hydrogen Monitor (Item II.F.1.6), Inadequate Core Cooling (Item II.F.2) and Control Room Habitability Requirements (Item III.D.3.4).

Should you or your staff have any questions regarding this matter, please contact Mr. P. Kokolakis of my staff.

Very truly yours,



J. P. Bayne
First Executive Vice President
Chief Operations Officer

cc: attached

A003
1/1

cc: Resident Inspector's Office
Indian Point Unit 3
U. S. Nuclear Regulatory Commission
P. O. Box 66
Buchanan, New York 10511

Attachment 1 to IPN-84-47

NUREG-0737 Technical Specifications

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

6. REACTOR COOLANT SYSTEM VENTS

Whenever the reactor coolant system is above 350°F, two reactor coolant system vent paths consisting of at least two valves in series powered from emergency buses shall be OPERABLE and closed at the reactor vessel head.

a. If one of the above reactor coolant system vent paths is inoperable, startup and/or power operation may continue provided the inoperable vent path is maintained closed with power removed from the valve actuator of all the valves in the inoperable vent path; restore the inoperable vent path to operable status within 30 days, or, be in hot shutdown within 6 hours and in cold shutdown within the following 30 hours.

b. With both reactor coolant system vent paths inoperable the reactor shall be brought to hot shutdown within 6 hours and be in cold shutdown within the following 30 hours.

TABLE 3.5-4 (Sheet 2 of 3)
INSTRUMENT OPERATING CONDITIONS FOR ISOLATION FUNCTIONS

| NO. | FUNCTIONAL UNIT | NO. of CHANNELS | NO. OF CHANNELS TO TRIP | MIN. NUMBER OF OPERABLE CHANNELS | MIN. DEGREE OF REDUNDANCY | OPERATOR ACTION IF OF COL. 3 OR 4 CANNOT BE MET |
|---|---|---|---|---|---|---|
| 3. | FEEDWATER LINE ISOLATION<br>a. Safety Injection | See Item No. 1 of Table 3.5-3 | | | | |
| 4. | CONTAINMENT VENT AND PURGE<br>a. Containment Radioactivity High (R11 and R12 monitor) | 2 | 1 | 1 | 0 | close all containment vent and purge valves when above cold shutdown |
| 5. | PLANT EFFLUENT RADIOIODINE/ PARTICULATE SAMPLING (Sample line common with monitor R13) | 1 | NA | 1 | 0 | (see note 3) |
| 6. | Wide Range Plant Vent Monitor (R27) | 1 | NA | 1 | 0 | (see note 3) |
| 7. | MAIN STEAM SAFETY VALVE/ATMOSPHERIC DUMP VALVE MONITORS | 1/valve | NA | 1 | 0 | (see note 3) |
| 8. | TOXIC GAS MONITORS | 2 | 1 | 1 | 0 | (see note 4) |

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Notes

1. If the conditions of Columns 3 or 4 cannot be met, the reactor shall be placed in the hot shutdown condition, utilizing normal operating procedures, within 4 hours of the occurrence. If the conditions are not met within 24 hours of the occurrence, the reactor shall be placed in the cold shutdown condition, or the alternate condition if applicable, within an additional 24 hours.

2. Main steam isolation valves may be closed in lieu of going to cold shutdown if the circuitry associated with closing the valves is the only portion inoperable.

3. If the plant vent sampling capability, the wide-range vent monitor or the main steam safety valve/atmospheric dump valve monitors is/are determined to be inoperable when the reactor is above the cold shutdown condition, then restore the sampling/monitoring capability within 72 hours or:

   a) Initiate a pre-planned alternate sampling/monitoring capability as soon as practical, but no later than 72 hours after identification of the failure. If the capability is not restored to operable status within 7 days, then,

   b) Submit a Special Report to the NRC pursuant to Technical Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system.

4. a) If one toxic gas monitoring system is determined to be inoperable, restore the inoperable system to operable status within 7 days or within the next 6 hours initiate and maintain operation of the control room emergency ventilation system in the recirculation mode of operation.

   b) If both toxic gas monitoring systems are inoperable, within 1 hour initiate and maintain operation of the control room emergency system in the recirculation mode of operation.

TABLE 3.5-5 (Sheet 1 of 4)

TABLE OF INDICATORS AND/OR RECORDERS AVAILABLE TO THE OPERATOR

| | PARAMETER | 1 NO. OF CHANNELS AVAILABLE | 2 MIN. NO. OF CHANNELS REQUIRED** | 3 INDICATOR/ RECORDER** |
|---|---|---|---|---|
| 1) | Containment Pressure | 6 | 2 | Indicator |
| 2) | Refueling Water Storage Tank Level | 2 | 1 | Indicator |
| 3) | Steam Generator Water Level (Narrow Range) | 3/Steam generator | * | Indicator |
| 4) | Steam Generator Water Level (Wide Range) | 1/steam generator | * | |
| 5) | Steam Line Pressure | 3/steam line | 1/steam line | Indicator |
| 6) | Pressurizer Water Level | 3 | 2 | Indicator/One Channel is Recorded |
| 7) | RHR Recirculation Flow | 4 | 3 | Indicator |
| 8) | Reactor Coolant System Pressure (Wide Range) | 1 | 1 | Recorder |
| 9) | Cold Leg Temperature ($T_c$) (Wide Range) | 4 | 1 | Recorder |
| 10) | Hot Leg Temperature ($T_h$) (Wide Range) | 4 | 1 | Recorder |
| 11) | Containment Sump Level | 2 | 1 | Indicator |
| 12) | Recirculation Sump Level | 2 | 1 | Indicator |
| 13) | Temperature Sensors in Penetration Area of Primary Auxiliary Building | 3 | 1 | Alarm |
| 14) | Temperature Sensors in Auxiliary Boiler Feedwater Pump Building | 2 | 1 | Alarm |

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| | PARAMETER | 1<br>NO. OF CHANNELS AVAILABLE- | 2<br>NO. OF CHANNELS REQUIRED** | 3<br>INDICATOR/ RECORDER** |
|---|---|---|---|---|
| 15) | Level Sensors in Lower Level of Tubine Building | 2 | 1 | Alarm |
| 16) | Reactor Coolant System Subcooling Margin Monitor | 1 | 1 | Recorder |
| 17) | PORV Position Indicator (Acoustic Monitor) | 1/Valve | 1/Valve | Indicator |
| 18) | PORV Position Indicator (Limit Switch) | 1/Valve | 1/Valve**** | Indicator and Alarm |
| 19) | PORV Block Valve Position Indicator (Limit Switch) | 1/Valve*** | 1/Valve | Indicator |
| 20) | Safety Valve Position Indicator (Acoustic Monitor) | 1/Valve | 1/Valve | Indicator |
| 21) | Auxiliary Feedwater Flow Rate | 1/Pump | 1/Pump | Indicator |
| 22) | High-Range Containment***** Radiation Monitors (R25, R26) | 2 | 1 | Alarm |
| 23) | Core Exit Thermocouples | 4/quadrant | 2/quadrant | Indicator |
| 24) | Containment Water Level Monitor | | | |
| | a) Narrow Range + | 1 | 1 | Indicator |
| | b) Wide Range ++ | 2 | 1 | Indicator |
| 25) | Containment Hydrogen Monitoring +++ | 2 | 1 | Indicator |
| 26) | Toxic Gas Monitors | 2 | 1 | Alarm |
| 27) | Reactor Vessel Level Indication System (RVLIS) ++++ | 2 | 1 | Indicator |

* One level channel per steam generator (either wide range or narrow range) with at least two wide range channels.

** Column 2 and 3 may be modified to allow the instrument channels to be inoperable for up to 7 days and/or the recorder to be inoperable for up to 14 days.

*** Except at times when valve operator control circuit is de-engerized.

**** Except when the respective block valve is closed.

***** If the high-range containment monitor is determined to be inoperable when the reactor is above the cold shutdown condition, then restore the monitoring capability within 7 days, and:

a) Initiate an alternate monitoring capability as soon as practical, but no later than 72 hours after identification of the failure of the monitor. If the monitor is not restored to operable status within 7 days, then,

b) Submit a Special Report to the NRC pursuant to Technical Specification 6.9.2 within 14 days following the event outlining the action taken, the cause of the inoperability and the plans and schedule for restoring the system.

With the exception of the High-Range Containment Radiation Monitors, if the minimum number of channels required are not restored to meet the above requirements within the time periods specified, then:

1. If the reactor is critical, it shall be brought to the hot shutdown condition utilizing normal operating procedures. The shutdown shall start no later than at the end of the specified time period.

2. If the reactor is subcritical, the reactor coolant system temperature and pressure shall not be increased more than 25°F and 100 psi, respectively, over existing values.

3. In either case, if the requirements of Columns 2 and 3 are not satisified within an additional 48 hours, the reactor shall be brought to the cold shutdown condition utilizing normal operating procedures. The shutdown shall start no later than the end of the 48 hour period.

+ If the narrow range monitor channel is determined to be inoperable, the channel will be restored to operable status within 30 days or the plant will be brought to hot shutdown within the next 12 hours.

++ a) If one of the wide range monitor channels is determined to be inoperable, the channel will be restored to operable status within 7 days or be in hot shutdown within the next 12 hours.

b) If both wide range monitor channels are determined to be inoperable, at least one monitor will be restored to operable status within 48 hours or be in hot shutdown within the next 12 hours.

+++ a) If one monitor channel is determined to be inoperable, the monitor should be restored to operable status within 30 days or the plant will be brought to a hot shutdown condition, within the next 6 hours.

b) If both monitor channels are determined to be inoperable, at least one monitor will be restored to operable status within 72 hours or the plant will be brought to a hot shutdown condition within the next 6 hours.

++++ a) If one RVLIS channel is determined to be inoperable, the channel will be restored to operable status within 7 days or be in hot shutdown within the next 12 hours.

b) If both RVLIS channels are determined to be inoperable, at least one channel will be restored to operable status within 48 hours or be in hot shutdown within the next 12 hours.

TABLE 4.1-1 (Sheet 1 of 5)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTS OF INSTRUMENT CHANNELS

| | Channel Description | Check | Calibrate | Test | Remarks |
|---|---|---|---|---|---|
| 1. | Nuclear Power Range | S | D (1)<br>M* (3) | M (2)**<br>M (4) | 1) Heat balance calibration<br>2) Bistable action (permissive, rod stop, trips)<br>3) Upper and lower chambers for axial off-set<br>4) Signal to ΔT |
| 2. | Nuclear Intermediate Range | S (1) | N.A. | P (2) | 1) Once/shift when in service<br>2) Verification of channel response to simulated inputs |
| 3. | Nuclear Source Range | S (1) | N.A. | P (2) | 1) Once/shift when in service<br>2) Verification of channel response to simulated inputs |
| 4. | Reactor Coolant Temperature | S | R | M (1)<br>(2) | 1) Overtemperature - ΔT<br>2) Overpower - ΔT |
| 5. | Reactor Coolant Flow | S | R | M | |
| 6. | Pressurizer Water Level | S | R | M | |
| 7. | Pressurizer Pressure(High and Low) | S | R | M | |
| 8. | 6.9 Kv Voltage & Frequency | N.A. | R | M | Reactor protection circuits only |
| 9. | Analog Rod Position | S | R | M | |

* By means of the movable incore detector system

** Monthly when reactor power is below the setpoint and prior to each startup if not done previous month.

| Channel Description | Check | Calibrate | Test | Remarks |
|---|---|---|---|---|
| 10. Steam Generator Level | S | R | M | |
| 11. Residual Heat Removal Pump Flow | N.A. | R | N.A. | |
| 12. Boric Acid Tank Level | S | R | N.A. | Bubbler tube rodded during calibration |
| 13. Refueling Water Storage Tank Level | W | R | N.A. | Low level alarms |
| 14. (a) Containment Pressure | S | R | M | High |
| (b) Containment Pressure | S | R | M | High High |
| 15. Process and Area Radiation Monitoring Systems | D | R | Q | |
| 16. Containment and Recirculation Sump Level | N.A. | N.A. | R | |
| 17. Accumulator Level and Pressure | S *** | R | N.A. | |
| 18. Steam Line Pressure | S | R | M | |
| 19. Turbine First Stage Pressure | S | R | M | |
| 20. Logic Channel testing | N.A. | N.A. | M | |
| 21. Turbine Overspeed Protection Trip Channel (Electrical) | N.A. | R | M | |
| 22. Boron Injection Tank Return Flow | S | R | N.A. | |

*** If either an accumulator level or pressure instrument channel is declared inoperable, the remaining level or pressure channel must be verified operable by interconnecting and equalizing (Pressure and/or level wise) a minimum of two accumulators and cross-checking the instrumentation.

TABLE 4.1-1 (SHEET 1 of 5)

| CHANNEL DESCRIPTION | CHECK | CALIBRATE | TEST | REMARKS |
|---|---|---|---|---|
| 23. Temperature Sensors in Auxiliary Boiler Feedwater Pump Building | N.A. | N.A. | R | |
| 24. Temperature Sensors in Penetration Area of Primary Auxiliary Building | N.A. | N.A. | R | |
| 25. Level Sensors in Turbine Building | N.A. | N.A. | R | |
| 26. Volume Control Tank Level | N.A. | R | N.A. | |
| 27. Boric Acid Make-Up Flow Channel | N.A. | R | N.A. | |
| 28. Auxiliary Feedwater: | | | | |
| a. Steam Generator Water Level (Low-Low) | S | R | M | |
| b. Undervoltage | N.A. | R | R | |
| c. Trip of Main Feedwater Pumps | N.A. | N.A. | R | |

TABLE 4.1-1 (SHEET 4 of 5)

| CHANNEL DESCRIPTION | CHECK | CALIBRATE | TEST | REMARKS |
|---|---|---|---|---|
| 29. Reactor Coolant System Subcooling Margin Monitor | D | R | N.A. | |
| 30. PORV Position Indicator (Limit Switch) | N.A. | R | R | |
| 31. PORV Position Indicator (Acoustic Monitor) | D | R | R | |
| 32. Safety Valve Position Indicator (Acoustic Monitor) | D | R | R | |
| 33. Auxiliary Feedwater Flow Rate | N.A. | R | N.A. | |
| 34. Plant Effluent Radioiodine/ Particulate Sampling (sample line common with Monitor R13) | N.A. | N.A. | R | |
| 35. Wide-range Plant Vent Monitor (R27) | D | R | Q | |
| 36. High-Range Containment Radiation Monitoring (R25, R26) | D | R | Q | |
| 37. Core Exit Thermocouples | D | N.A. | N.A. | |
| 38. Main Steam Safety Valve /Atmospheric Dump Valve Monitors | D | R | Q | |
| 39. Containment Water Level Monitoring System | | | | |
| a. Narrow Range | M | R | R | |
| b. Wide Range | M | R | R | |

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TABLE 4.1-1 (SHEET 5 of 5)

| CHANNEL DESCRIPTION | CHECK | CALIBRATE | TEST | REMARKS |
|---|---|---|---|---|
| 40. Containment Hydrogen Monitoring | D | Q | M | |
| 41. Toxic Gas Monitors | S | R | M | |
| 42. Reactor Vessel Level Indication System (RVLIS) | M | R | R | |

S - Each Shift
D - Daily
W - Weekly
M - Monthly
P - Prior to each startup if not done previous week
Q - Quarterly
R - Each Refueling Outage
N.A. - Not Applicable

TABLE 4.1-3

FREQUENCIES FOR EQUIPMENT TESTS

| | | Check | Frequency |
|---|---|---|---|
| 1. | Control Rods | Rod drop times of all control rods | R |
| 2. | Control Rods | Partial movement of all control rods | Every 2 weeks during reactor critical operations |
| 3. | Pressurizer Safety Valves | Set point | R |
| 4. | Main Steam Safety Valves | Set point | R |
| 5. | Containment Isolation System | Automatic actuation | R |
| 6. | Refueling System Interlocks | Functioning | Prior to each refueling outage |
| 7. | Primary System Leakage | Evaluate | 5 days/week |
| 8. | Diesel Fuel Supply | Fuel Inventory | Weekly |
| 9. | Turbine Steam Stop Control Valves | Closure | Monthly |
| 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 | R |
| 13. | RHR Valves 730 and 731 | Automatic isolation and interlock action | R* |
| 14. | Block Valve | Operability through 1 complete cycle of full travel | R |
| 15. | PORV Valves | Operability | R |
| 16. | RCS Vents | Operability | R |

R Each Refueling Outage

* If not done during the previous 18 months, the check will be performed the next time the plant is cooled down.

d. Abnormal degradation of systems other than those specified in 6.9.1.7.c above designed to contain radioactive material resulting from the fission process. 7/

SPECIAL REPORTS

6.9.2 Special reports shall be submitted to the Director of the Office of Inspection and Enforcement Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification:

a. Sealed source leakage in excess of limits (Specification 3.9)

b. Inoperable Seismic Monitoring Instrumentation (Specification 4.10)

c. Primary coolant activity in excess of limits (Specification 3.1.D)

d. Seismic event analysis (Specification 4.10)

e. Inoperable fire protection and detection equipment (Specification 3.14)

f. The complete results of the steam generator tube inservice inspection (Specification 4.9.C)

g. Inoperable plant vent sampling of effluent monitoring capability (Table 3.5-4, Items 5, 6 and 7).

h. Inoperable containment high-range radiation monitors. (Table 3.5-5, Item 22)

6.10 RECORD RETENTION

6.10.1 The following records shall be retained for at least five years:

a. Records and logs of facility operation covering time interval at each power level.

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment relating to nuclear safety.

c. ALL REPORTABLE OCCURRENCES submitted ot the Commission.

d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.

7/ Sealed sources or calibration sources are not included under this item. Leakage of packing, caskets, mechanical joints and seal welds within the limits for identified leakage set forth in technical specifications need not be reported under this item.