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

December 1, 1993

Docket No. 50-286

Mr. Ralph E. Beedle
Executive Vice President - Nuclear Generation
Power Authority of the State of New York
123 Main Street
White Plains, New York 10601

Dear Mr. Beedle:

SUBJECT: ISSUANCE OF AMENDMENT FOR INDIAN POINT NUCLEAR GENERATING UNIT NO. 3 (TAC NO. M85824)

The Commission has issued the enclosed Amendment No. 140 to Facility Operating License No. DPR-64 for the Indian Point Nuclear Generating Unit No. 3. The amendment consists of changes to the Technical Specifications (TSs) in response to your application transmitted by letter dated February 18, 1993.

The amendment revises the TSs to incorporate the following changes:

(1) The reactor coolant loop temperature channel calibration frequency (specified in TS Table 4.1-1) has been changed to accommodate operation on a 24-month cycle.

(2) The reactor coolant loop flow instrumentation calibration frequency (specified in TS Table 4.1-1) has been changed to accommodate operation on a 24-month cycle.

(3) The 6.9 kV underfrequency relay calibration frequency (specified in TS Table 4.1-1) has been changed to accommodate operation on a 24-month cycle. In addition, the minimum reactor coolant pump low frequency trip setting (specified in TS Section 2.3.1.B(6)(b)) has been increased from 55 Hz to 57.2 Hz.

(4) The steam generator level instrumentation calibration frequency (specified in TS Table 4.1-1) has been changed to accommodate operation on a 24-month cycle.

(5) The reactor trip and bypass breaker testing frequency (specified in TS Table 4.1-1) has been changed to accommodate operation on a 24-month cycle.

These changes followed the guidance provided in Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle."

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A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Nicola F. Conicella, Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 140to DPR-64
2. Safety Evaluation

cc w/enclosures:
See next page

A copy of the related Safety Evaluation is enclosed. A Notice of Issuance will be included in the Commission's next regular biweekly Federal Register notice.

Sincerely,

Original signed by:

Nicola F. Conicella, Project Manager
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
1. Amendment No. 140 to DPR-64
2. Safety Evaluation

cc w/enclosures:
See next page

Distribution:
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*See previous concurrence

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Mr. Ralph E. Beedle
Power Authority of the State
of New York

Indian Point Nuclear Generating
Station Unit No. 3

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DATED: December 1, 1993

AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. DPR-64-INDIAN POINT UNIT 3

Docket File
NRC & Local PDRs
PDI-1 Reading
S. Varga, 14/E/4
J. Calvo, 14/A/4
R. Capra
C. Vogan
N. Conicella
OGC
D. Hagan, 3302 MNBB
G. Hill (2), P1-22
C. Grimes, 11/F/23
J. Ganiere, 8/H/3
ACRS (10)
OPA
OC/LFDCB
PD plant-specific file
C. Cowgill, Region I
J. Wermiel, 8/H/1

cc: Plant Service list

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

POWER AUTHORITY OF THE STATE OF NEW YORK

DOCKET NO. 50-286

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 140
License No. DPR-64

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Power Authority of the State of New York (the licensee) dated February 18, 1993, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. DPR-64 is hereby amended to read as follows:

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(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 140, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of the date of its issuance to be implemented within 30 days.

FOR THE NUCLEAR REGULATORY COMMISSION

Robert A. Capra

Robert A. Capra, Director
Project Directorate I-1
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: December 1, 1993

ATTACHMENT TO LICENSE AMENDMENT NO. 140

FACILITY OPERATING LICENSE NO. DPR-64

DOCKET NO. 50-286

Revise Appendix A as follows:

Remove Pages	Insert Pages
2.3-3	2.3-3
Table 4.1-1 (sheet 1 of 6)	Table 4.1-1 (sheet 1 of 6)
Table 4.1-1 (sheet 2 of 6)	Table 4.1-1 (sheet 2 of 6)
Table 4.1-1 (sheet 5 of 6)	Table 4.1-1 (sheet 5 of 6)

(5) Overpower ΔT

$$\Delta T \leq \Delta T_o \left(K_4 - K_5 \frac{dTavg}{dt} - K_6(T_{avg} - T')\right)$$

where:

ΔT_o ≤ measured full power ΔT for the channel being calibrated, °F

T_{avg} = measured average temperature for the channel being calibrated, °F (input from instrument racks)

T' = measured full power T_{avg} for the channel being calibrated, °F (can be set no higher than 573.3 °F)

K_4 ≤ 1.073

K_5 = 0 for decreasing average temperature

≥ 0.175 sec/°F for increasing average temperature

K_6 = 0 for $T \leq T'$

≥ 0.00116 for $T > T'$

K_4 is a constant which defines the overpower ΔT trip margin during steady state operation if the temperature term is zero.

K_5 is a constant determined by dynamic considerations to compensate for piping delays from the core to the loop temperature detectors; it represents the combination of the equipment static gain setting and the time constant setting.

K_6 is a constant which defines the dependence of the overpower ΔT setpoint to T_{avg}.

$\frac{dTavg}{dt}$ = rate of change of T_{avg}

(6) Low reactor coolant loop flow:

(a) ≥ 90% of normal indicated loop flow
(b) Low reactor coolant pump frequency – ≥ 57.2 cps

(7) Undervoltage – ≥ 70% of normal voltage

TABLE 4.1-1 (Sheet 1 of 6)

MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTS OF INSTRUMENT CHANNELS

Channel Description	Check	Calibrate	Test	Remarks
1. Nuclear Power Range	S	D (1) M (3)*	Q (2)** Q (4)	1) Heat balance calibration 2) Bistable action (permissive, rod stop, trips) 3) Upper and lower chambers for axial offset 4) Signal to Δ T
2. Nuclear Intermediate Range	S (1)	N.A.	P (2)	1) Once/shift when in service 2) Verification of channel response to simulated inputs
3. Nuclear Source Range	S (1)	N.A.	P (2)	1) Once/shift when in service 2) Verification of channel response to simulated inputs
4. Reactor Coolant Temperature	S	18M (1) 24M (2)	 Q(2)	1) Engineered safety cicuits only 2) Reactor protection circuits only
5. Reactor Coolant Flow	S	24M	Q	
6. Pressurizer Water Level	S	18M	Q	
7. Pressurizer Pressure	S	18M	Q	High and Low
8. 6.9 KV Voltage 6.9 KV Frequency	N.A. N.A.	18M 24M	Q Q	Reactor protection circuits only Reactor protection circuits only
9. Analog Rod Position	S	24M	M	

TABLE 4.1-1 (Sheet 2 of 6)

Channel Description	Check	Calibrate	Test	Remarks
10. Steam Generator Level	S	18M (1) 24M (2)	Q	1) Indicating circuits only 2) Reactor protection circuits only
11. Residual Heat Removal Pump Flow	N.A.	18M	N.A.	
12. Boric Acid Tank Level	S	18M	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:				
a. Fuel Storage Building Area Radiation Monitor (R-5)	D	24M	Q	
b. Vapor Containment Process Radiation Monitors (R-11 and R-12)	D	24M	Q	
c. Vapor Containment High Radiation Monitors (R-25 and R-26)	D	18M	Q	
d. Wide Range Plant Vent Gas Process Radiation Monitor (R-27)	D	24M	Q	
e. Main Steam Lines Process Radiation Monitors (R-62A, R-62B, R-62C, and R-62D)	D	24M	Q	
f. Gross Failed Fuel Detectors (R-63A and R-63B)	D	24M	Q	

TABLE 4.1-1 (Sheet 5 of 6)

Channel Description	Check	Calibrate	Test	Remarks
37. Core Exit Thermocouples	D	N.A.	N.A.	
38. Overpressure Protection System(OPS)	D	18M	18M	
39. Reactor Trip Breakers	N.A.	N.A.	TM (1)	1) Independent operation of under-voltage and shunt trip attachments
			24M(2)	2) Independent operation of under-voltage and shunt trip from Control Room manual push-button
40. Reactor Trip Bypass Breakers	N.A.	N.A.	(1)	1) Manual shunt trip prior to each use
			24M(2)	2) Independent operation of under-voltage and shunt trip from Control Room manual push-button
			24M(3)	3) Automatic undervoltage trip
41. Reactor Vessel Level Indication System (RVLIS)	D	18M	N.A.	
42. Ambient Temperature Sensors Within the Containment Building	D	18M	N.A.	
43. River Water Temperature # (installed)	S	18M	N.A.	1) Check against installed instrumentation or another portable device
44. River Water Temperature # (portable)	S (1)	Q (2)	N.A.	2) Calibrate within 30 days prior to use and quarterly thereafter

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 140 TO FACILITY OPERATING LICENSE NO. DPR-64

POWER AUTHORITY OF THE STATE OF NEW YORK

INDIAN POINT NUCLEAR GENERATING UNIT NO. 3

DOCKET NO. 50-286

1.0 INTRODUCTION

By letter dated February 18, 1993, the Power Authority of the State of New York (the licensee) submitted a request for changes to the Indian Point Nuclear Generating Unit No. 3 (IP3) Technical Specifications (TSs). The requested changes would revise the TS to incorporate the following reactor protection system (RPS) changes:

(1) The reactor coolant loop temperature channel calibration frequency (specified in TS Table 4.1-1) would be changed to accommodate operation on a 24-month cycle.

(2) The reactor coolant loop flow instrumentation calibration frequency (specified in TS Table 4.1-1) would be changed to accommodate operation on a 24-month cycle.

(3) The 6.9 kV underfrequency relay calibration frequency (specified in TS Table 4.1-1) would be changed to accommodate operation on a 24-month cycle. In addition, the minimum reactor coolant pump low frequency trip setting (specified in TS Section 2.3.1.B(6)(b)) would be increased from 55 Hz to 57.2 Hz.

(4) The steam generator level instrumentation calibration frequency (specified in TS Table 4.1-1) would be changed to accommodate operation on a 24-month cycle.

(5) The reactor trip and bypass breaker testing frequency (specified in TS Table 4.1-1) would be changed to accommodate operation on a 24-month cycle.

The requested changes are needed to accommodate operation on a 24-month fuel cycle. The current TS provision to extend surveillances by 25 percent of the specified interval would apply to the proposed changes, thus, the time limit for completing surveillances would increase from the existing limit of 22.5 months to a maximum of 30 months. The licensee commenced operating on a 24-month fuel cycle, instead of the previous 18-month fuel cycle, with fuel

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cycle 9. Fuel cycle 9 started in August 1992. The proposed changes follow the guidance provided in Generic Letter (GL) 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate a 24-Month Fuel Cycle."

2.0 EVALUATION

Improved reactor fuels allow licensees to consider an increase in the duration of the fuel cycle for their facilities. A longer fuel cycle increases the time interval between refueling outages and the performance of TS surveillance requirements. GL 91-04 provides guidance to support the development of TS revisions to allow 24-month surveillance intervals and includes requirements to evaluate the effect on safety for an increase in surveillance testing and calibration intervals to accommodate a 24-month fuel cycle.

The licensee evaluation should conclude that the net effect on safety is small, that historical plant maintenance and surveillance data support the proposed extended surveillance interval, and that the assumptions in the plant licensing basis are still bounding with the incorporation of a 24-month surveillance interval. The staff also determined that a licensee should address the issue of instrumentation errors/setpoint methodology assumptions when proposing an extended instrumentation calibration interval. Specifically, the licensee must evaluate the effects of an increased calibration interval on instrument uncertainties, equipment qualification, and vendor maintenance requirements to ensure that an extended surveillance interval does not result in exceeding the assumptions stated in the safety analysis.

GL 91-04 provides for either vendor drift data or plant-specific data to be used in the determination of the instrument drift term for a 24 month (maximum of 30 months) surveillance interval. Vendor information and/or licensee operating experience can provide sufficient data to evaluate long-term instrument performance and provide a basis to support an extended surveillance interval of 24 months.

GL 91-04 requires licensees to address a number of issues to justify an increase in calibration interval for instruments that are used to perform safety functions. The following issues were identified:

1. Confirm that instrument drift as determined by as-found and as-left calibration data from surveillance and maintenance records has not, except on rare occasions, exceeded acceptable limits for a calibration interval.

2. Confirm that the values of drift for each instrument type (make, model, and range) and application have been determined with a high probability and a high degree of confidence. Provide a summary of the methodology and assumptions used to determine the rate of instrument drift with time based upon historical plant calibration data.

3. Confirm that the magnitude of instrument drift has been determined with a high probability and a high degree of confidence for a bounding calibration interval of 30 months for each instrument type (make, model number, and range) and application that performs a safety function. Provide a list of the channels by TS section that identifies these instrument applications.

4. Confirm that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis. If this results in revised setpoints to accommodate larger drift errors, provide proposed TS changes to update trip setpoints. If the drift errors result in a revised safety analysis to support existing setpoints, provide a summary of the updated analysis conclusions to confirm that the safety limits and safety analysis assumptions are not exceeded.

5. Confirm that the projected instrument errors caused by drift are acceptable for the control of plant parameters to effect a safe shutdown with the associated instrumentation.

6. Confirm that all conditions and assumptions of the setpoint and safety analyses have been checked and are appropriately reflected in the acceptance criteria of the plant surveillance procedures for channel checks, channel functional tests, and channel calibrations.

7. Provide a summary description of the program for monitoring and assessing the effects of increased calibration surveillance intervals on instrument drift and its effect on safety.

The licensee addressed these issues in its evaluation of extended calibration intervals. Specifically, these issues were addressed in a plant specific Instrument Drift Analysis (IDA) as well as in loop/accuracy setpoint calculations for the RPS instrumentation. To satisfy the GL 91-04 criterion, the licensee considered past equipment performance and the effect on system safety functions, the results of drift analysis, the importance of the calibration procedure or refueling test in demonstrating equipment operability, and the results of loop accuracy/setpoint calculations and the effect on safety system setpoints when evaluating the extension of RPS surveillance intervals.

In order to evaluate past instrument performance, the licensee reviewed applicable surveillances and recorded the historical as-left and as-found drift information. The past drift data was then compared to theoretical Vendor Drift Allowances (VDA) for the corresponding calibration time intervals in order to confirm that each individual instrument drift value was within acceptable limits for that calibration interval. If no vendor drift limits were available, the past drift data was compared to the calibration tolerance of the instrument.

To predict the future expected drift over a 30-month interval, a Maximum Expected Drift for 30 months (MED30) was determined from the average and standard deviation of actual field calibration data statistically extrapolated to a 30-month period. The licensee stated that the calculated MED30 bounds hardware performance with a 95 percent probability at a 95 percent confidence level. The MED30 value was then compared to the VDA for 30 months (VDA30). The method used for extrapolation is consistent with the techniques used for evaluating past performance and is allowed by the Instrument Society of America (ISA) RP67.04, Part II, Draft 9, "Methodologies for the Determination of Setpoints for Nuclear Safety-Related Instrumentation," dated March 1991.

The loop accuracy/setpoint calculations for the RPS components or instrumentation channels were updated to include conservative values for 30-month calibration uncertainties (vendor specified uncertainties or MED30, whichever is larger) by accounting for instrument inaccuracies consistent with industry methods described in ISA RP67.04.

IP3's on-line surveillance program which includes channel checks each shift, bimonthly reactor protection relay logic functional tests, and quarterly channel functional tests provides assurance that RPS instrumentation and reactor protection logic relays and bistables function as required. These on-line surveillances detect potential instrument failures and verify operability of the RPS instrument channels. The refueling outage calibrations correct for possible instrument drift but have not been relied upon to detect RPS instrument failures.

The licensee has committed to establishing a drift monitoring program that will monitor and assess the effects of increased calibration intervals on instrument drift. This program will verify that actual future drift values are within projected limits and will identify instrumentation whose drift is not within the assumed values used in the loop accuracy/setpoint calculations. In addition, the calibration procedure for each RPS component or instrument channel whose calibration interval has been increased to 24 months will be revised to specify an as-found acceptance criterion which reflects the projected limit. Each of the proposed changes is evaluated below.

2.1 Calibration of Reactor Coolant Loop Temperature Channels

The licensee has proposed to extend the calibration interval for the reactor coolant loop temperature channels from 18 to 24 months. Each reactor coolant loop has a temperature channel that develops the average temperature and delta-temperature of the loop. These temperature signals are used by the overpower delta-temperature and overtemperature delta-temperature RPS trip functions. When the loop delta-temperature exceeds the overpower delta-temperature or overtemperature delta-temperature trip setpoints the channel is tripped. Tripping of two of the four channels initiates a reactor trip. Each temperature channel is comprised of resistance temperature detectors, a voltage to current converter, a special lag unit, resistance to voltage convertors, and voltage isolation devices.

The licensee provided IDA results for each of the reactor coolant loop temperature components in all four channels. The IDA results confirm that the past instrument drift of each of the reactor coolant loop temperature components was within the corresponding VDA. The MED30 values for the voltage to current convertors, resistance to voltage convertors, and voltage isolation devices were within the VDA30 values. However, projected drift calculations indicated that the MED30 for the special lag units was significantly greater than the VDA30. The licensee confirmed that this was caused by a calibration error that resulted in one large data point and that removing this data point from the past drift database resulted in an acceptable MED30 value.

The loop accuracy/setpoint calculations confirmed that sufficient margin exists between the overpower and overtemperature delta-temperature analytical limits and the existing field trip settings based on an extended calibration interval. In addition, the licensee has stated that shift channel checks and on-line functional tests readily detect potential instrument failures and verify reactor coolant loop temperature channel operability.

Based on the information provided by the licensee, the staff finds the proposed change to extend the reactor coolant loop temperature channels calibration interval to 24 months is acceptable. These changes apply to the reactor protection circuits only. The calibration interval for the Engineered Safety Feature circuits will remain at least once per 18 months.

2.2 Calibration of Reactor Coolant Flow Instrumentation Channels

The licensee has proposed to extend the calibration interval for the reactor coolant loop flow instrumentation channels from 18 to 24 months. Three reactor coolant loop flow instrumentation channels measure flow in each reactor coolant loop and are arranged in a 2-out-of-3 logic. When a low flow condition (93 percent of normal flow) is sensed by 2-out-of-3 bistables within a given loop, a loop low flow signal is generated. A loop low flow signal generated in any two loops results in a reactor trip above approximately 10 percent power. Also, a loop low flow signal in any one loop generates a reactor trip above approximately 50 percent power.

The IDA results for the reactor coolant loop flow transmitters confirm that past instrument drift was within the VDA for the corresponding calibration intervals and MED30 was within the VDA30. The loop accuracy/setpoint calculations confirmed that sufficient margin exists for the existing reactor coolant loop low flow trip setpoint to insure that a channel trip occurs within the analytical limit considering additional drift and uncertainties for the 24 month (30 month maximum) operating cycle. In addition, the licensee has stated that shift channel checks and on-line functional tests readily detect potential instrument failures.

Based on the information provided by the licensee, the staff finds the proposed change to extend the reactor coolant loop flow instrumentation channels calibration interval to 24 months is acceptable.

2.3 Calibration of 6.9 kV Underfrequency Relays

The licensee has proposed to extend the calibration interval for the 6.9 kV underfrequency relays from 18 to 24 months. The reactor coolant pump underfrequency trip protects against low reactor coolant flow caused by a loss of pump power. The 6.9 kV underfrequency relays sense underfrequency conditions on their respective reactor coolant pump buses. A reactor trip is generated when the frequency on any 2-out-of-4 buses drops below the trip setting of 57.5 Hz for a specified time delay.

The IDA results for the 6.9 kV underfrequency relays confirm that past instrument drift is within the calibration tolerances specified in the calibration procedure for both the relay trip and the time delay requirements. However, the MED30 for the 6.9 kV underfrequency relays exceeded the calibration tolerance. The licensee confirmed that this was due to a low number of past drift data points which resulted in an overly conservative and unrealistic MED30 value.

The loop accuracy/setpoint calculations confirmed that sufficient margin exists for the existing 6.9 kV underfrequency relay trip setpoint and time delay trip setpoint to insure that a channel trip occurs within the analytical limit considering additional drift and uncertainties for the 24 month (30-month maximum) operating cycle. The highly conservative MED30 value was used in the loop accuracy/setpoint calculations to represent the additional drift due to the extended calibration interval. The loop accuracy/setpoint calculation results also indicated that the TS minimum reactor coolant pump low frequency trip setting should be increased. This is discussed in the next section of this report. In addition, the licensee has stated that shift channel checks and on-line functional tests readily detect potential instrument failures.

Based on the information provided by the licensee, the staff finds the proposed change to extend the 6.9 kV underfrequency relays calibration interval to 24 months is acceptable. The licensee will closely monitor the future performance of the 6.9 kV underfrequency relays in accordance with the drift monitoring program.

2.4 Reactor Coolant Pump Low Frequency Minimum Trip Setting

The licensee has requested to change TS 2.3.1.B(6)(b) by increasing the minimum reactor coolant pump low frequency trip setting (allowable value) from 55 Hz to 57.2 Hz. The proposed increase of the minimum trip setting to 57.2 Hz ensures that sufficient margin is maintained above the analytical limit to account for instrument inaccuracies. The value of 57.2 Hz represents the allowable value for the underfrequency trip setpoint as derived in the instrument loop accuracy/setpoint calculation.

The staff finds that the proposed change is conservative and provides sufficient margin to ensure that a channel trip will occur within the analytical limit of 55 Hz. The trip setpoint will remain 57.5 Hz. Based on this information, the staff finds the proposed change acceptable.

2.5 Calibration of Steam Generator Level Instrumentation Channels

The licensee has proposed to extend the calibration interval for the steam generator level transmitters from 18 to 24 months. A low-low steam generator level trip signal is initiated when 2-out-of-3 of the steam generator narrow range level channels for any one steam generator sense a level of 8 percent. This signal initiates a reactor trip as well as auxiliary feedwater actuation.

The IDA results show past performance of the steam generator level transmitters has been unacceptable for three calibration intervals between August 1985 and September 1990. This was attributed to poor steam generator cleaning methods that resulted in sediment buildup in the transmitters' reference legs. However, the steam generators were replaced and IP3 improved the steam generator cleaning techniques, and, as a result, the 1992 calibration data show drift values to be within the VDA. The licensee has stated that the MED30 still exceeds the VDA30, but this is attributed to the low number of 1992 drift data points that resulted in an overly conservative and unrealistic MED30 value.

The loop accuracy/setpoint calculations confirmed that sufficient margin exists for the existing low-low steam generator level trip setpoint to ensure that a channel trip occurs within the analytical limit considering additional drift and uncertainties for the 24 month (30-month maximum) operating cycle. The vendor specified drift allowance was used to represent the additional drift due to the extended calibration interval. The licensee has confirmed that the margin can also accommodate the unrealistic MED30 value in the channel uncertainty calculation without creating a safety concern. In addition, the licensee has stated that shift channel checks and on-line functional tests readily detect potential instrument failures.

Based on the information provided by the licensee, the staff finds the proposed change to extend the steam generator level transmitters calibration interval to 24 months is acceptable. These changes apply to the reactor protection circuits only. The calibration interval for the indicating circuits will remain at least once per 18 months. The licensee will closely monitor the future performance of the steam generator level transmitters in accordance with the drift monitoring program.

2.6 Testing of Reactor Trip and Reactor Trip Bypass Breakers

The licensee has proposed to extend the testing intervals for the reactor trip and reactor trip bypass breakers to 24 months. These surveillance tests verify independent operation of the reactor trip and reactor trip bypass breaker's undervoltage and shunt trip mechanisms when activated from the

control room manual trip pushbutton, and automatic operation of the undervoltage trip for the reactor trip bypass breakers. The test also verifies that the breaker trip response times are less than 0.15 seconds.

The licensee has confirmed that a review of reactor trip and reactor trip bypass breaker surveillance test data shows satisfactory results for the past three refueling outages. IP3's review of the reactor trip breaker operating experience as documented in the Nuclear Plant Reliability Data System and Licensee Event Reports showed increased reactor trip breaker reliability due to equipment and procedures changes that were made following the Salem's anticipated transient without scram event. A review of operational occurrence reports dating back to September 1987 documented only one failure of the undervoltage trip mechanism. No concurrent failures of the undervoltage and shunt trip mechanisms have occurred.

The licensee has stated that potential reactor trip and reactor trip bypass breaker operability problems can be detected during on-line surveillance testing. A separate surveillance test that verifies independent operation of undervoltage and shunt trip attachments and breaker trip response times will continue to be performed at least every 2 months on a staggered test basis (i.e., one train per month).

Based on the licensee's review of historical plant surveillance data, the staff has confirmed that the refueling surveillance tests are not being relied upon to detect failures of the reactor trip and bypass breakers. Based on the above information the staff finds the proposed 24-month surveillance interval to be acceptable.

2.7 Summary

Based on the above the staff finds the proposed TS changes to increase the calibration surveillance interval from 18 to 24 months (30 months with grace period) for reactor coolant loop temperature channels, reactor coolant loop flow instrumentation, 6.9 kV underfrequency relays, and steam generator level transmitters as proposed in the licensee submittal to be acceptable. In addition, the proposed TS changes to increase the testing frequency of the reactor trip and reactor trip bypass breakers from 18 to 24 months and to increase the minimum reactor coolant loop flow trip setting to 57.2 Hz are acceptable. The licensee has evaluated the proposed changes in accordance with the guidance contained in GL 91-04. Its evaluation has concluded that the net effect on safety is small, that historical plant maintenance and surveillance data support the proposed extended surveillance intervals, and that the assumptions in the plant licensing basis are still bounding with the incorporation of a 24-month surveillance interval. The loop accuracy/setpoint calculations have shown that sufficient margin exists between the analytical limits and the corresponding TS trip setpoints and that the assumptions of the

safety analysis are not violated. A drift monitoring program will be established to assess the effect of a longer calibration interval on instrument drift. The licensee will evaluate and monitor any component showing as-found conditions beyond the specified acceptance criterion.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the New York State official was notified of the proposed issuance of the amendment. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendment changes a requirement with respect to installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 and changes surveillance requirements. The NRC staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendment involves no significant hazards consideration, and there has been no public comment on such finding (58 FR 16230). Accordingly, the amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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