ATTACHMENT I TO IPN-94-014

PROPOSED TECHNICAL SPECIFICATION CHANGES TO

EXTEND CALIBRATION INTERVALS FOR ENGINEERED SAFETY FEATURES ACTUATION SYSTEMS (ESFAS)/ INDICATING INSTRUMENT CIRCUITS

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

TABLE 3.5-5 (Sheet 1 of 3)

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)	a. Containment Pressure - narrow range b. Containment Pressure - wide range	6 2	2 1	INDICATOR INDICATOR/ RECORDER
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	*	RECORDER
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 (Tc) (Wide Range)	4	1	RECORDER
10)	Hot Leg Temperature (Th) (Wide Range)	4	1	RECORDER
11)	Containment Sump Water level (Narrow Range, Analog)+	2	1	INDICATOR/ RECORDER
12)	Recirculation Sump Water Level (Narrow Range, Analog)+	2	1	INDICATOR/ RECORDER
13)	Temperature Sensors in: a. Piping Penetration Area b. Mini-Containment Area c. Steam Gen. Blowdown Heat Exchanger Room d. Auxiliary Boiler Feedwater Pump Bldg.	2/area	1/area	ALARM

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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	24M	Q(1)	1) Overtemperature ΔT, overpower ΔT, and low T_{avg}
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	

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Channel Description	Check	Calibrate	Test	Remarks
10. Steam Generator Level	S	24M	Q	
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
14a. Containment Pressure - narrow range	S	24M	Q	High and High-High
14b. Containment Pressure - wide range	M	18M	N.A.	
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 3 of 6)

Channel Description	Check	Calibrate	Test	Remarks
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	24M	Q	
19. Turbine First Stage Pressure	S	24M	Q	
20a. Reactor Trip Relay Logic	N.A.	N.A.	TM	
20b. ESF Actuation Relay Logic	N.A.	N.A.	TM	
21. Turbine Trip Low Auto Stop Oil Pressure	N.A.	24M	N.A.	
22. DELETED	DELETED	DELETED	DELETED	
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.	24M	
b. Mini-Containment Area	N.A.	N.A.	24M	
c. Steam Generator Blowdown Heat Exchanger Room	N.A.	N.A.	24M	

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TABLE 4.1-1 (Sheet 4 of 6)

Channel Description	Check	Calibrate	Test	Remarks
25. Level Sensors in Turbine Building	N.A.	N.A.	24M	
26. Volume Control Tank Level	N.A.	18M	N.A.	
27. Boric Acid Makeup Flow Channel	N.A.	18M	N.A.	
28. Auxiliary Feedwater:				
a. Steam Generator Level	S	24M	Q	Low-Low
b. Undervoltage	N.A.	24M	24M	
c. Main Feedwater Pump Trip	N.A.	N.A.	24M	
29. Reactor Coolant System Subcooling Margin Monitor	D	18M	N.A.	
30. PORV Position Indicator	N.A.	N.A.	24M	Limit Switch
31. PORV Position Indicator	D	24M	24M	Acoustic Monitor
32. Safety Valve Position Indicator	D	24M	24M	Acoustic Monitor
33. Auxiliary Feedwater Flow Rate	N.A.	18M	N.A.	
34. Plant Effluent Radioiodine/ Particulate Sampling	N.A.	N.A.	18M	Sample line common with monitor R-13
35. Loss of Power				
a. 480v Bus Undervoltage Relay	N.A.	24M	M	
b. 480v Bus Degraded Voltage Relay	N.A.	18M	M	
c. 480v Safeguards Bus Undervoltage Alarm	N.A.	24M	M	
36. Containment Hydrogen Monitors	D	Q	M	

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ATTACHMENT II TO IPN-94-014

SAFETY EVALUATION FOR

PROPOSED TECHNICAL SPECIFICATION CHANGES TO

EXTEND CALIBRATION INTERVALS FOR THE ENGINEERED SAFETY FEATURES ACTUATION SYSTEMS (ESFAS)/ INDICATING INSTRUMENT CIRCUITS

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
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Section I - Description of Changes

Starting with cycle nine (that began in August 1992), Indian Point 3 began operating on 24 month cycles, instead of the previous 18 month cycles. To accommodate a 24 month operating cycle, this application for amendment to the Indian Point 3 Technical Specifications proposes to change the calibration frequency for many of the Engineered Safety Features Actuation Systems (ESFAS) circuits and the turbine trip low auto stop oil pressure channels listed in Table 4.1-1.

Generally, the proposed changes to Table 4.1-1 are shown as changing the notation "18M" (at least once per 18 months) to "24M" (at least once per 24 months). The instrument channels whose calibration frequency will be changed by this application are:

- reactor coolant temperature (Item 4),
- steam generator level (Items 10 and 28a),
- containment pressure (Item 14),
- steam line pressure (Item 18),
- turbine first stage pressure (Item 19),
- turbine trip low auto stop oil pressure (Item 21), and
- 480V bus undervoltage (Items 28b and 35a) and alarm (Item 35c) relays.

Since some of these instrument channels also perform the additional function of providing control room indication and recording for post accident monitoring (PAM) functions, this application includes evaluations of the post accident monitoring portion of the ESFAS circuits.

Other changes included in this application are: 1) the addition to Table 3.5-5 of limiting conditions for operation (LCO) requirements for the wide range containment pressure variable to ensure consistency with Regulatory Guide (RG) 1.97 commitments and the Indian Point 3 Emergency Operating Procedures (EOPs); 2) the addition of a quarterly functional test surveillance requirement to Item 4 of Table 4.1-1 for the low T_{avg} actuation circuits of the reactor coolant temperature channels; 3) the addition of a second line to Item 14 of Table 4.1-1 to specify surveillance requirements for the wide range containment pressure instrumentation; and 4) the revision of Item 20 to Table 4.1-1 to clarify that both the reactor trip and the engineered safety features (ESF) actuation relay logic channels are functionally tested.

Section II - Evaluation of Changes

Starting with cycle nine, Indian Point 3 began operating on 24 month cycles, instead of the previous 18 month cycles. To avoid either a separate 18 month surveillance outage or an extended mid-cycle outage, extending calibration intervals to be consistent with the length of the operating cycle is desired. This application for amendment to the Indian Point 3 Technical Specifications proposes to extend the calibration intervals for the ESFAS instrumentation channels and the turbine trip low auto stop oil pressure channels from a nominal 18 month interval to a nominal 24 month interval.

In evaluating the extension of calibration intervals for the ESFAS circuits and the turbine trip low auto stop oil pressure channels, the following factors were considered: past equipment performance and the effect on system safety functions, the importance of the calibration procedure in demonstrating equipment operability, and the results of loop accuracy/setpoint calculations.

Input signals to some of the indicators/recorders listed in Indian Point 3 Technical Specification Table 3.5-5 are provided by sensors contained in ESFAS circuits listed in Table 4.1-1. In evaluating the extension of calibration intervals for these circuits, the following additional factors were considered for the analog components in the circuit: RG 1.97 commitments and the effect of the extended calibration interval on EOP settings.

Engineered Safety Features Actuation Systems (ESFAS)

ESF Actuation Systems are designed to trip the reactor in order to prevent or limit fission product release from the core, to limit energy release, to signal containment isolation, and to start ESF equipment. ESFAS signals are actuated on any 2-out-of-3 or 2-out-of-4 channels exceeding a specific plant parameter. The following plant parameter signals are used:

- high steam line flow coincident with low T_{avg} or low steam line pressure,
- low-low steam generator level,
- high containment pressure,
- high-high containment pressure,
- high steam line differential pressure,
- 480V undervoltage,
- low pressurizer pressure, and
- manual signals.

Testing of the ESF actuation logic channels is performed at least every two months on a staggered basis (i.e., one train per month).

Post-Accident Monitoring (PAM)

The ESFAS circuits also provide analog signals to post accident monitoring (PAM) indicators and recorders (referred to as "indicating instruments"). The Authority's PAM instrumentation is provided in accordance with commitments made in response to RG 1.97 guidelines. Reference 3 lists letters providing and updating the Authority's RG 1.97 implementation plan. The plan was approved by NRC Safety Evaluation dated April 3, 1991 and NRC Inspection Report No. 50-286/92-04, dated March 4, 1992.

Extension Program

The NRC staff has determined that licensees should address a number of issues in providing an acceptable basis for extending the calibration interval for instruments that are used to perform safety functions. NRC Generic Letter (GL) 91-04, Enclosure 2 (Reference 4) specifies the licensee actions to be taken to address these issues. These actions include:

1) confirming 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) confirming 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; and providing a summary of the methodology and assumptions used to determine the rate of instrument drift with time based upon historical plant calibration data;

3) confirming 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 and application that performs a safety function; and providing a list of the channels by technical specification section that identifies these instrument applications;

4) confirming that a comparison of the projected instrument drift errors has been made with the values of drift used in the setpoint analysis, providing proposed technical specification changes to update trip setpoints if the comparison indicates the need to revise setpoints to accommodate larger drift errors, and providing a summary of the updated analysis conclusions to confirm that safety limits and safety analysis assumptions are not exceeded;

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

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

7) providing 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.

To satisfy the requirements of Enclosure 2 to Generic Letter 91-04, the general approach taken by the Authority in evaluating the proposed calibration extensions includes the comparison and analysis of actual versus theoretical instrument performance, the statistical projection of actual past drift values to arrive at maximum expected future drift values over a 30 month interval, and the performance of loop accuracy/setpoint and EOP setting calculations. The ESFAS and the indicating component Instrument Drift Analyses (References 5 and 6, respectively) document actual past and predicted future drift calculations used to evaluate actual and expected performance, and address the requirements of GL 91-04, action items 1, 2, and most of 3. The loop accuracy/setpoint and EOP setting calculations address parts of action items 4, 5, and 6. The monitoring program to be established in response to action item 7 is described later in this evaluation. The ESFAS and Indicating Instrument Surveillance Test Extension reports (References 7 and 8, respectively) bring the results of the drift analysis, the loop accuracy/setpoint calculations, and the EOP setting calculations together to complete the requirements of action items 3, 4, 5 and 6. The reports evaluate the results, identify the technical specification changes required, and present/document justification for the proposed extensions.

Instrument Drift Analysis

Plant specific instrument drift analyses (IDAs) were completed for components of the ESFAS and indicating instrument circuits currently calibrated once every 18 months. The purpose of the IDA is to assess extending the calibration intervals from the current 18 months to a maximum of 30 (24 + 25%) months. The analysis 1) compares past instrument performance to acceptance limits (the vendor drift allowance (VDA) or calibration tolerance (CT)), and 2) predicts future drift by statistically extrapolating the derived data to arrive at a value for maximum expected drift over a 30 month interval (MED30).

The Authority submitted proposed Technical Specification changes for extending Reactor Protection System (RPS) calibrations to accommodate a 24 month cycle (Reference 9). Attachment III of that submittal transmitted the RPS IDA, including a summary description of the methodology used in preparing it. The RPS IDA is representative of the drift analyses performed to support the 24 month cycle program, including the IDAs for the ESFAS and PAM components.

Loop Accuracy/Setpoint and EOP Setting Calculations

Enclosure 2 to Generic Letter 91-04 requires the licensee to evaluate the effects of an extended calibration interval on instrument errors in order to confirm that drift will not result in instrument errors that exceed the assumptions of the safety analysis. To meet this requirement, NYPA performs or updates loop accuracy/setpoint and EOP setting calculations using the worst projected value of instrument drift (either vendor specified uncertainties or MED30, unless MED30 is considered unrealistic) to represent calibration uncertainties for the 30 month interval. (MED30 may be considered unrealistic or overly conservative if too few data points are available, resulting in a high statistical multiplier.) The results of these calculations evaluate the effects of the extended calibration interval on safety analysis assumptions. These calculations hold the greatest weight in determining whether a calibration interval can be safely extended. If the calculations show that the safety analysis assumptions are not violated, reasonable assurance exists that the calibration interval may be extended.

Attachment II to Reference 9 described the use of extrapolated drift data in setpoint calculations and Attachment IV to Reference 9 provided sample loop accuracy/setpoint calculations. The same methodology presented in those attachments was applied to ESFAS instrument loops.

For certain ESFAS and PAM components, 30 month uncertainty values were used to update existing EOP setpoint calculations. The existing EOP setpoints were developed for the Authority by Westinghouse. Instrument accuracy calculations were subsequently prepared by the Authority using a modified Westinghouse methodology. To support the longer operating cycle, these calculations were revised using the 30 month uncertainty values determined by the instrument drift evaluation. The affected EOP setpoints will be revised to accommodate the larger uncertainties.

Several of the MED30 values calculated for the ESFAS and PAM components evaluated in this safety evaluation exceeded vendor predicted limits for 30 month intervals. For the components whose calibration intervals are being extended by this application, however, this was found to be acceptable because revised loop accuracy and/or setpoint calculations show that the additional uncertainties can be accommodated without violating safety analysis assumptions. The specific technical specification change evaluations that follow identify when EOP setting changes are required.

Drift Monitoring Program

In accordance with Generic Letter 91-04, a program to monitor future calibration data will be established to assess the effect an extended calibration interval has on instrument drift. The purpose of the program is to confirm that future drift values are within the projected limits calculated in the IDAs. The drift monitoring program was described further in Attachment II to Reference 9.

The Authority's 24 month cycle program, including drift analyses, setpoint calculations, and drift monitoring was discussed at a February 23, 1993 meeting with NRC staff members (see Reference 10).

SPECIFIC TECHNICAL SPECIFICATION CHANGES

Testing of Reactor Trip and ESF Actuation Relay Logic Channels

Table 4.1-1, Item 20, of Appendix A to the Indian Point 3 Technical Specifications currently specifies "Reactor Protection Relay Logic" testing. This item originally specified "Logic Channel Testing" but was revised by Indian Point 3 Technical Specification Amendment 74 (Reference 11) to incorporate changes required by Generic Letter 85-09, "Technical Specifications for Generic Letter 83-28, Item 4.3," dated May 23, 1985. (Item 4.3 of Generic Letter 83-28 established the requirement for automatic actuation of the shunt trip attachment for reactor trip breakers.) The surveillance requirement specified by Item 20 has been interpreted as including on-line testing of both the reactor trip and ESF actuation logic channels, but since the wording change made by Amendment 74 may be confusing, this application proposes to clarify the functional testing requirements. The change is consistent with the current Westinghouse Standard Technical Specifications contained in NUREG-1431 (W STS)(Reference 12).

Calibration and Functional Testing Requirements for Reactor Coolant Loop Temperature Channels

Table 4.1-1, Item 4, of Appendix A to the Indian Point 3 Technical Specifications requires calibration of the reactor coolant (RC) loop temperature instrumentation channels at least once per 18 months. Each reactor coolant loop has a temperature channel consisting of both narrow and wide range temperature instrumentation. Below are evaluations for reactor coolant loop temperature instrumentation used for ESFAS and PAM functions. Reference 9 submitted technical specification changes related to the use of narrow range reactor coolant loop temperature instrumentation for RPS functions. The changes were approved and issued as Amendment 140 (Reference 13) to the Indian Point 3 Technical Specifications.

ESFAS Functions - Narrow Range Reactor Coolant Temperature Instrumentation

ESFAS uses a low T_{avg} signal (sensed by 2-out-of-4 T_{avg} channels), in conjunction with a high steam flow signal, to protect against a postulated steam line break by initiating safety injection (SI) and steam line isolation signals.

Factors considered in evaluating the extension of the calibration interval for the narrow range RC loop temperature instrumentation include the results of the drift analysis, the results of the safety system loop accuracy/setpoint calculations, and the importance of the calibration procedures in demonstrating equipment operability.

An evaluation of the calibration data for the components in the low T_{avg} actuation loop confirms that past performance was consistently within vendor specified uncertainties. The calibration data was used to calculate future drift (MED30) values, and revised loop accuracy calculations verify that sufficient margin exists between the analytical limit and the low T_{avg} trip setpoint to accommodate instrument uncertainties associated with the extended calibration interval. No setpoint changes are required.

In addition to the channel calibration performed each refueling cycle, Technical Specifications require RC loop temperature channel checks once each shift and ESF actuation logic channel functional tests every two months on a staggered basis (i.e., one train per month). The channel check includes monitoring, from the control room, the average RC loop temperature. On-line ESF actuation logic channel functional tests verify operation of the trip relays. Additionally, although not currently specified in Indian Point 3 Technical Specifications (but being added), on-line functional testing of the T_{avg} circuits is performed and demonstrates operability of the low T_{avg} actuation circuits. The above surveillances provide assurance that the temperature instruments in each loop are functioning as required.

On-line functional testing of the T_{avg} circuits on a quarterly basis is being added as a Technical Specification requirement. As discussed above, this test provides assurance that the low T_{avg} actuation circuits are operable. The proposed addition is consistent with W STS.

In summary, there is reasonable assurance that calibration of the narrow range RC loop temperature instrumentation used for ESFAS functions can safely be extended to accommodate the longer operating cycle because:

- past performance was consistently within vendor allowances,
- loop accuracy/setpoint calculations confirm that sufficient margin exists between analytical and field trip settings for low T_{avg} to accommodate instrument uncertainties associated with the extended calibration interval, and
- on-line temperature channel checks, temperature channel functional tests and ESF actuation logic channel functional tests ensure operability of the narrow range RC temperature instruments.

PAM Functions - Wide Range Reactor Coolant Temperature Instrumentation

The wide range temperature instrumentation provides post accident monitoring functions in accordance with the Authority's commitments to RG 1.97. The EOPs rely upon hot (T_H) and cold (T_C) leg temperature readings for accident mitigation.

Factors considered in evaluating the extension of the calibration interval for the wide range RC loop temperature instrumentation used for PAM functions (the instrumentation in all four hot legs and in one of the four cold legs) include the results of the drift analysis and the results of the EOP setting calculations. (Since three of the four cold leg RTDs provide input to the Overpressurization Protection System (OPS), and calibration and testing of the analog components for these three cold legs are performed by OPS procedures, extension of the calibration interval for these three legs was evaluated separately. The surveillance requirements for the OPS are given by Item 41 of Table 4.1-1 and are not being extended to 24M at this time.)

A review of the calibration data for this temperature instrumentation confirms that past performance was within acceptance limits (vendor specified uncertainties or calibration tolerance). The calibration data was used to predict future drift (MED30) values and these values were incorporated by the EOP setting calculations for the reactor coolant system (RCS) T_H and T_C temperature circuits. Based on the revised calculations, the EOP T_C and T_H settings will be revised to accommodate postulated uncertainties associated with the extended calibration interval.

In summary, there is reasonable assurance that calibration of the wide range RC loop temperature instrumentation used for PAM functions can safely be extended to accommodate the longer operating cycle because:

- past performance was consistently within acceptance limits and
- postulated uncertainties associated with the extended calibration interval will be accommodated by changes to the EOP T_C and T_H settings.

Calibration of Steam Generator Level Instrumentation Channels

Table 4.1-1, Items 10 and 28a, of Appendix A to the Indian Point 3 Technical Specifications require calibration of the steam generator (SG) level instrumentation channels at least once per 18 months. Below are evaluations for SG level instrumentation used for ESFAS and PAM functions. Reference 9 submitted technical specification changes related to the use of narrow range SG level instrumentation for RPS functions. The changes were approved and issued as Amendment 140.

ESFAS Functions - Narrow Range Steam Generator Level Instrumentation

Three (3) narrow range level channels are provided for each SG and are arranged in a 2-out-of-3 logic to initiate a SG low-low level trip signal. This signal initiates both the auxiliary feedwater actuation signal and a reactor trip signal to provide the necessary protection against a loss of normal feedwater or a loss of offsite power.

Factors considered in evaluating the extension of the calibration interval for the narrow range SG level transmitters include the results of the drift analysis, the results of the safety system loop accuracy/setpoint calculations, and the importance of the calibration procedure in demonstrating equipment operability. Since the same SG level transmitters are used to perform both ESFAS and RPS functions, the evaluation provided by Reference 9 applies and is not repeated in this application.

The Reference 9 evaluation justifies a maximum 30 month calibration interval for the narrow range SG level transmitters because:

- loop accuracy/setpoint calculations confirm that sufficient margin exists between analytical and field trip settings for low-low SG level to accommodate instrument uncertainties associated with the extended calibration interval and
- on-line SG level channel checks, SG level functional tests, and ESF actuation logic channel functional tests ensure operability of the narrow range SG level transmitters.

PAM Functions - Narrow Range Steam Generator Level Instrumentation

The narrow range SG level instrumentation provides post accident monitoring functions in accordance with the Authority's commitments to RG 1.97. The EOPs rely upon the instrumentation to detect a SG tube rupture and to provide indication of SG water level following a steam line break.

Factors considered in evaluating the extension of the calibration interval for the narrow range SG level instrumentation used for PAM functions include the results of the drift analysis and the results of the EOP setting calculations.

The narrow range level transmitters were evaluated in the RPS instrument drift analysis and the results were summarized in the previous section. A review of past calibration data for the analog components (current repeaters, indicators, and recorders) was also performed. Although past performance of the current repeaters and recorders was not routinely within allowable limits, most of the data was repeatable suggesting that the equipment is reliable and that specified allowances are too limiting. Past performance of the indicators was consistently within the tolerance specified by the calibration procedure.

The field calibration data discussed above was used to predict future drift for each of the analog components. The resulting MED30 values were incorporated by the EOP setting calculations (except in cases where the existing calculation value bound the 30 month projected drift value). Based on the revised calculations, the EOP SG level settings will be revised to accommodate postulated uncertainties associated with the extended calibration interval.

In summary, there is reasonable assurance that calibration of the narrow range SG level instrumentation used for PAM functions can safely be extended to accommodate the longer operating cycle because:

- postulated uncertainties associated with the extended calibration interval will be accommodated by changes to EOP settings.

PAM Functions - Wide Range Steam Generator Level Instrumentation

One wide range level transmitter is provided per SG. These transmitters and the associated analog components provide post accident monitoring functions in accordance with the Authority's commitments to RG 1.97. The EOPs rely upon the instrumentation to maintain reactor heat sink by indicating SG water level following a tube rupture or steam line break.

Factors considered in evaluating the extension of the calibration interval for the wide range SG level instrumentation used for PAM functions include the results of the drift analyses and the results of the EOP setting calculations.

The instrument drift evaluations for the wide range SG level transmitters and analog components (indicators and recorders) show that past performance of the indicators was routinely within the specified calibration tolerance, while past performance of the transmitters and the recorders was not routinely within allowable limits. However, most of the data was repeatable suggesting that the transmitters and recorders are reliable and that specified allowances are too limiting. Future instrument performance was predicted from the calibration data and the resulting MED30 values are considered conservative. The EOP setting calculations were revised using MED30 calibration uncertainties. Based on the revised calculations, the EOP SG level settings will be revised to accommodate postulated uncertainties associated with the extended calibration interval.

In summary, there is reasonable assurance that calibration of the wide range SG level instrumentation used for PAM functions can safely be extended to accommodate the longer operating cycle because:

- postulated uncertainties associated with the extended calibration interval will be accommodated by changes to EOP settings.

Calibration and LCO Requirements for Containment Pressure Channels

Table 4.1-1, Item 14, of Appendix A to the Indian Point 3 Technical Specifications requires calibration of the containment pressure channels at least once per 18 months. The table does not currently make a distinction between narrow and wide range instrumentation because both are calibrated every 18 months. Evaluations for extension of the calibration intervals are presented below. Also, Table 3.5-5 currently specifies the LCO for only the narrow range containment pressure channels. This application proposes to add to Table 3.5-5 LCO requirements for the wide range containment pressure instrumentation.

ESFAS Functions - Narrow Range Containment Pressure Instrumentation

The containment pressure instrumentation initiates safety injection (SI) and associated functions on 2-out-of-3 high containment pressure signals, and containment spray and steamline isolation on 2 sets of 2-out-of-3 high-high containment pressure signals. Additionally, both high and high-high containment pressure signals activate containment isolation.

Factors considered in evaluating the extension of the calibration interval for the narrow range containment pressure instrumentation include the results of the drift analysis, the results of the safety system loop accuracy/setpoint calculations, and the importance of the calibration procedure in demonstrating equipment operability.

A review of the calibration data for the narrow range containment pressure transmitters confirmed that past instrument drift values were consistently within vendor specified uncertainties. The field calibration data was used to predict future instrument drift and the resulting MED30 value was incorporated by loop accuracy/setpoint calculations. The loop accuracy/setpoint calculations verify that sufficient margin exists between analytical and field trip settings to accommodate instrument uncertainties associated with the extended calibration interval, and, therefore, no analytical or field trip setpoint changes are required.

Additionally, Technical Specifications require operability of the containment pressure instruments to be demonstrated by containment pressure channel checks once each shift, containment pressure channel functional tests each quarter, and ESF actuation logic channel functional tests every two months on a staggered basis.

In summary, there is reasonable assurance that calibration of the narrow range containment pressure transmitters can safely be extended to accommodate the longer operating cycle because:

- past performance was consistently within vendor allowances,
- loop accuracy/setpoint calculations confirm that sufficient margin exists between analytical and field trip settings for containment pressure to accommodate instrument uncertainties associated with the extended calibration interval, and
- on-line containment pressure channel checks, containment pressure channel functional tests and ESF actuation logic channel functional tests ensure operability of the narrow range containment pressure instruments.

<u>PAM Functions - Narrow Range Containment Pressure Instrumentation</u>

The narrow range containment pressure analog components (current repeaters and indicators) monitor containment conditions and, in the event of a LOCA, can be used to indicate post-accident containment conditions. NYPA's commitments to RG 1.97 designate the wide range containment pressure instrumentation loops for post accident monitoring. The EOPs, however, do not differentiate between wide and narrow range instrumentation and, therefore, the narrow range instrumentation is evaluated as EOP instrumentation.

Factors considered in evaluating the extension of the calibration interval for the narrow range containment pressure instrumentation used for PAM functions include the results of the drift analysis and the results of the EOP setting calculations.

The narrow range containment pressure transmitters were evaluated in the ESFAS instrument drift analysis and the results were discussed in the previous section. The results of the evaluation determined that the calibration interval for these transmitters could be safely extended.

Instrument drift evaluations for the narrow range containment pressure analog components were performed and show that while past performance of the indicators was routinely within the specified calibration tolerance, past performance of the current repeaters was not routinely within vendor specified uncertainties. However, the drift data for the current repeaters was repeatable suggesting that the equipment is reliable and that vendor specified uncertainties are too limiting. The calibration data was used to predict future instrument drift and the resulting MED30 values were incorporated by revised EOP setting calculations. The calculations show that the narrow range containment pressure instrumentation loops can safely accommodate the postulated conservative increases in drift.

In summary, there is reasonable assurance that calibration of the narrow range containment pressure instrumentation used for PAM functions can safely be extended to accommodate the longer operating cycle because:

- postulated uncertainties associated with the extended calibration interval do not affect EOP settings and accident analyses.

PAM Functions - Wide Range Containment Pressure Instrumentation

As previously mentioned, NYPA's commitments to RG 1.97 designate the wide range containment pressure instrument loops for post accident monitoring. The EOPs rely on containment pressure indication to verify containment integrity. Indian Point 3 Technical Specifications Table 3.5-5, "Table of Indicators and/or Recorders Available to the Operator," currently specifies the LCO for only the narrow range containment pressure channels. This application proposes to revise Table 3.5-5 by adding LCO requirements for the wide range containment pressure instrumentation. The addition is consistent with W STS.

Extension of the calibration interval for the wide range containment pressure instrumentation was evaluated and did not meet the Authority's standards for calibration extension. Therefore, changes are proposed to Table 4.1-1 to split Item 14 into two lines - one for narrow and one for wide range channels. The calibration interval for only the narrow range instrumentation is extended to 24M. The calibration frequency for the wide range instrumentation will remain at 18M. A monthly channel check surveillance requirement is being added to the Indian Point 3 Technical Specifications for the wide range instrumentation. The channel check frequency is consistent with W STS.

Calibration of Steam Line Pressure Channels

Table 4.1-1, Item 18, of Appendix A to the Indian Point 3 Technical Specifications requires calibration of steam line pressure instrumentation at least once per 18 months.

ESFAS Functions - Steam Line Pressure

Steam line pressure measurements are used in two ways to protect against steam line breaks. High differential pressure between any one steam line and any 2 of the other 3 steam lines will initiate a safety injection signal, and high steam line flow coincident with low steam pressure (or low T_{avg}) will initiate a safety injection signal and isolate the main steam isolation valves.

Factors considered in evaluating the extension of the calibration interval for the steam line pressure instrumentation include the results of the drift analysis, the results of the safety system loop accuracy/setpoint calculations, and the importance of the calibration procedure in demonstrating equipment operability.

Twelve (12) steam line pressure channels are used to determine differential steam line pressures; four (4) of these are also used to detect low pressure. All 12 pressure transmitters were replaced with nuclear grade (environmentally qualified) transmitters in May 1989 and, consequently, only one or two drift values were available for each transmitter. The drift analysis for these transmitters shows overall performance was not within vendor projections at the top and bottom of span. However, performance around the actuation points was routinely within vendor allowances.

For the differential pressure function, the drift analysis shows, as mentioned above, that past transmitter performance was routinely within vendor specified uncertainties around the actuation point. This suggests that the equipment is reliable for its required function. The resulting MED30 value was incorporated by the loop accuracy/setpoint calculations for the high differential steam line pressure function, and the calculations confirm that sufficient margin exists between the analytical limit assumed by the safety analysis and the field trip setting to accommodate instrument uncertainties associated with the extended calibration interval. No setpoint changes are required.

For the low steam line pressure function, the drift analysis shows, as previously mentioned, that past transmitter performance was routinely within vendor specified uncertainties around the actuation point. Again, this suggests that the equipment is reliable for its required function. The resulting MED30 value was incorporated by loop accuracy/setpoint calculations for the low steam line pressure function, and the calculations confirm that sufficient margin exists between the analytical limit and the field trip setting to accommodate instrument uncertainties associated with the extended calibration interval. No setpoint changes are required.

Additionally, Technical Specifications require operability of the steam line pressure channels to be demonstrated by steam line pressure channel checks once each shift, steam line pressure channel functional tests each quarter, and ESF actuation logic channel functional tests every two months on a staggered basis.

In summary, there is reasonable assurance that calibration of the steam line pressure transmitters used for ESFAS functions can safely be extended to accommodate the longer operating cycle because:

- past performance was consistently within vendor allowances around the actuation points,
- loop accuracy/setpoint calculations confirm that sufficient margin exists between analytical limits and field trip settings for high differential steam line pressure and low steam line pressure to accommodate instrument uncertainties associated with the extended calibration interval, and
- on-line steam line pressure channel checks, steam line pressure channel functional tests and ESF actuation logic channel functional tests ensure operability of the steam

line pressure instruments.

PAM Functions - Steam Line Pressure

SG pressure provides post accident monitoring functions in accordance with the Authority's commitments to RG 1.97, is used during shutdown and cooldown, and in recovery from SG tube ruptures.

Factors considered in evaluating the extension of the calibration interval for the steam line pressure instrumentation used for PAM functions include the results of the drift analysis and the results of the EOP setting calculations.

The instrument drift analysis for the steam line pressure transmitters shows overall performance was not within vendor projections at the top and bottom of span although performance around the actuation points was routinely within vendor allowances (suggesting that the equipment is reliable as mentioned in the previous section).

Instrument drift evaluations were performed for the analog components (indicators and current repeaters). The calibration data for the indicators and one of the two types of current repeaters shows past performance routinely within the specified calibration tolerance or vendor performance specifications. Drift data for the other type of current repeater was not routinely within vendor performance specifications. However, the data for this component shows repeatable results, suggesting that the equipment is reliable and that vendor allowances are too limiting.

The calibration data was extrapolated to obtain MED30 values for each of the analog components. The EOP setting calculations were revised to include the MED30 values. Based on the revised calculations, the EOP setting corresponding to the saturation pressure at 350°F following an SG tube rupture will be revised to accommodate postulated uncertainties associated with the extended calibration interval.

In summary, there is reasonable assurance that calibration of the steam line pressure instrumentation used for PAM functions can safely be extended to accommodate the longer operating cycle because:

- postulated uncertainties associated with the extended calibration interval will be accommodated by changes to EOP settings.

Calibration of Turbine First Stage Pressure Channels

Table 4.1-1, Item 19, of Appendix A to the Indian Point 3 Technical Specifications requires calibration of the turbine first stage pressure channels at least once per 18 months. Turbine first stage pressure controls the high steam flow bistable setpoint. Steam flow instrumentation protects against a steam line break by initiating safety injection and steam line isolation signals upon a high steam flow signal coincident with either low T_{avg} or low steam line pressure.

Factors considered in evaluating the extension of the calibration interval for the turbine first stage pressure instrumentation used for ESFAS functions include the results of the drift analysis for turbine first stage pressure, the results of the safety system loop accuracy/setpoint calculations, and the importance of the calibration procedures in demonstrating equipment operability.

The calibration data for the turbine first stage pressure transmitters shows past performance routinely within the vendor specified uncertainties. Postulated future drift was calculated from the calibration data and the MED30 value for the pressure transmitters was incorporated by loop accuracy/setpoint calculations. The calculations show that sufficient margin exists between the analytical limit and field trip settings for the high steam flow trip to accommodate the increased instrument inaccuracies associated with the extended calibration interval for the turbine first stage pressure transmitters. No setpoint changes are required.

Additionally, Technical Specifications require operability of the turbine first stage pressure channels to be demonstrated by channel checks once each shift, channel functional tests each quarter, and ESF actuation logic channel functional tests every two months on a staggered basis.

In summary, there is reasonable assurance that calibration of the turbine first stage pressure channels used for ESFAS functions can safely be extended to accommodate the longer operating cycle because:

- past performance was routinely within vendor allowances,
- loop accuracy/setpoint calculations confirm that sufficient margin exists between analytical and field trip settings for the high steam flow trip function (which is dependent upon turbine first stage pressure) to accommodate instrument uncertainties associated with the extended calibration interval, and
- on-line turbine first stage pressure channel checks, turbine first stage pressure channel functional tests and ESF actuation logic channel functional tests ensure operability of the turbine first stage pressure transmitters.

Calibration of Turbine Trip Low Auto Stop Oil Pressure Channels

Table 4.1-1, Item 21, of Appendix A to the Indian Point 3 Technical Specifications requires calibration of the turbine trip low auto stop oil pressure channels at least once per 18 months. A decrease in oil pressure sensed by 2-out-of-3 channels initiates a turbine trip which, in turn, causes a direct reactor trip provided the reactor is operating at or above 10% power. The turbine trip is provided to anticipate plant transients and to avoid the resulting thermal transient. (Although the turbine trip low auto stop oil pressure trip does not actuate ESF equipment nor is it relied upon in the accident analyses, extension of the calibration interval for the associated oil pressure switches is being included in this application for amendment to the Indian Point 3 Technical Specifications and the evaluation is discussed below.)

Factors considered in evaluating the extension of the calibration interval for the turbine trip low auto stop oil pressure channels include the trip's safety function and the results of the safety system loop accuracy/setpoint calculations.

The three pressure switches are checked and calibrated every 18 months. In January 1991, the switches were replaced as part of a routine upgrade of older devices. No work requests have been issued since replacement of the switches and 1992 calibration data shows that the switches have performed well. However, due to the lack of a sufficient number of data points, an instrument drift evaluation was not performed.

Because sufficient field data points were not available, a loop accuracy calculation for the turbine trip pressure channels was performed using vendor specified uncertainties rather than extrapolated field data. The calculation shows that sufficient margin exists between the instrument settings and the analytical limit to accommodate instrument uncertainties associated with the extended calibration interval. No setpoint changes are required.

In summary, there is reasonable assurance that calibration of the turbine trip low auto stop oil pressure channels can safely be extended to accommodate the longer operating cycle because:

- the loop accuracy calculation confirms that sufficient margin exists between the analytical limit and the instrument settings for turbine trip low auto stop oil pressure to accommodate postulated uncertainties associated with the extended calibration interval,
- the pressure switches are new equipment and show good performance as documented by 1992 calibration data, and
- no credit is taken in the accident analyses for the turbine trip low auto stop oil pressure trip.

Calibration of 480V Bus Undervoltage and Undervoltage Alarm Relays

Table 4.1-1 of Appendix A to the Indian Point 3 Technical Specifications requires calibration of the 480V bus undervoltage relays (Items 28b and 35a), the 480V bus degraded voltage relays (Item 35b), and the 480V safeguards bus undervoltage alarm relays (Item 35c) at least once per 18 months. The undervoltage relays provide loss of voltage (LOV) protection. The 480V degraded voltage relays provide degraded grid voltage (DGV) protection. Timing relays, associated with the undervoltage and degraded voltage relays, ensure proper coordination with plant electrical transients. The cumulation of relays discussed above provide the protection functions necessary to ensure availability of power to safety related equipment and prevent equipment damage due to a sustained degraded voltage condition. The undervoltage alarm relays alert the operator of an impending degraded voltage condition. No credit is taken for the alarm (and any subsequent operator action) in the Indian Point 3 degraded voltage studies.

Factors considered in evaluating the extension of the calibration interval for the 480V undervoltage relays and degraded voltage relays include the results of the drift analysis and the results of the safety system loop accuracy/setpoint calculations; for the undervoltage alarm relays, the safety function of the alarm was primarily considered.

The ESFAS instrument drift analysis shows past performance for the undervoltage relays, the associated timing relays, and the degraded voltage relays was routinely within the specified calibration tolerances or vendor specified uncertainties. The calibration data was used to predict future drift values and these values were incorporated by loop accuracy/setpoint calculations.

Loop accuracy/setpoint calculations show that the existing field settings for the undervoltage relays and the associated time delay relays contain sufficient margin to accommodate postulated instrument loop uncertainties associated with the extended calibration interval. Therefore, extension of the calibration interval is proposed and no setpoint changes are required for the 480V undervoltage relays.

However, loop accuracy/setpoint calculations show that the existing degraded voltage trip setting does not provide sufficient margin to accommodate postulated uncertainties for a 30 month period. Therefore, extension of the calibration interval for the 480V bus degraded voltage relays is not proposed at this time.

Alarm relays indicating low voltage on the 480V safeguards busses are calibrated on an 18 month basis. These relays alert the operator of an impending degraded voltage condition. No drift evaluation was completed for the 480V undervoltage alarm relays because they were replaced during the 1992 refueling outage and, therefore, calibration data is not available. However, by inspection, sufficient margin exists between the nominal bus voltage and the alarm setting, and between the degraded voltage setting and the alarm setting. Additionally, undervoltage protection is provided by the LOV and DGV relays without relying on the alarm relays. The Indian Point 3 degraded voltage studies do not take credit for the undervoltage alarm.

In summary, there is a reasonable assurance that calibration of the 480V undervoltage and undervoltage alarm relays can safely be extended to accommodate the longer operating cycle because:

- past performance of the undervoltage relays and associated timing relays were consistently within acceptance limits,
- loop accuracy/setpoint calculations confirm that sufficient margin exists between the nominal bus voltage and the undervoltage trip and associated time delay relay settings to accommodate instrument uncertainties associated with the extended calibration interval, and
- undervoltage protection is provided for the 480V AC equipment by the LOV and DGV relays without relying on the alarm relays.

<u>Calibration Frequencies Remaining at an 18 Month Interval</u>

As a result of instrument drift evaluation findings, extensions of the calibration interval for the following instrument channels are not recommended at this time:

- wide range containment pressure,
- 480V degraded voltage relays, and
- low pressurizer pressure.

Section III - No Significant Hazards Evaluation

Consistent with the criteria 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 evaluated. The proposed changes extend the calibration intervals (given in Table 4.1-1) for the reactor coolant loop temperature instrumentation used for Engineered Safety Features Actuation Systems (ESFAS) and Post Accident Monitoring (PAM) functions, the steam generator (SG) level instrumentation used for ESFAS and PAM functions, the containment pressure instrumentation used for ESFAS and PAM functions, the steam line pressure instrumentation used for ESFAS and PAM functions, the turbine first stage pressure instrumentation used for ESFAS functions, the 480V bus undervoltage and alarm relays used for ESFAS functions, and the turbine trip low auto stop oil pressure instrumentation. These changes are being made to accommodate a 24 month operating cycle. Other changes include: 1) the addition to Table 3.5-5 of limiting conditions for operation (LCO) requirements for the wide range containment pressure channels; 2) the addition of a quarterly functional test surveillance requirement to Item 4 of Table 4.1-1 for the low T_{avg} actuation circuits of the reactor coolant temperature channels; 3) the addition of a second line to Item 14 of Table 4.1-1 to specify the surveillance requirements for the wide range containment pressure channels; and 4) the revision of Item 20 to Table 4.1-1.

Extension of the calibration intervals in question were evaluated and the results documented in the ESFAS and Indicating Instrument Surveillance Test Extension reports (References 7 and 8). ESFAS and indicating instrument drift analyses were performed to evaluate actual past and projected future instrument drift. Revised safety system loop accuracy/setpoint calculations, which include any additional instrument uncertainties resulting from the proposed calibration interval extensions, show that sufficient margin exists between the analytical and field trip settings for the low T_{avg}, the SG low-low level, the high and high-high containment pressure, the high differential steam line pressure, the low steam line pressure, the high steam flow (dependent upon turbine first stage pressure), the turbine trip low auto stop oil pressure, and the 480V bus undervoltage trip functions. Safety analyses are not affected. Additionally, postulated uncertainties associated with the extended calibration intervals for the wide range reactor coolant loop temperature, the narrow and wide range SG level, and the steam line pressure instrumentation will be accommodated by changes to the Emergency Operating Procedure (EOP) settings. Extension of the calibration interval for the narrow range containment pressure instrumentation channels does not affect EOP settings. Safety analyses are not affected by the EOP setting changes.

The results of the changes to: 1) add to Table 3.5-5 LCO requirements for the wide range containment pressure channels, 2) add a quarterly functional test surveillance requirement to Item 4 of Table 4.1-1 for the low T_{avg} actuation circuits of the reactor coolant temperature channels, and 3) add a monthly channel check surveillance requirement to Table 4.1-1 for the wide range containment pressure channels are consistent with Westinghouse Standard Technical Specifications (W STS - Reference 12). The addition of LCO requirements to Table 3.5-5 for the wide range containment pressure instrumentation, the addition of a quarterly functional test requirement to Item 4 of Table 4.1-1 for the low T_{avg} actuation circuits, and the separation of surveillance requirements for the narrow and wide range containment pressure instrumentation into two lines on Table 4.1-1 constitute additional technical specification controls. Changes which constitute additional technical specification limitations and controls are classified by Federal Register dated April 6, 1983 (48 FR 14870, April 6, 1983) as not likely to involve significant hazards considerations. The change to Table 3.5-5 ensures consistency with the Authority's commitment to Regulatory Guide (RG) 1.97 for the containment pressure variable.

The current surveillance requirement specified by Item 20 has been interpreted by Indian Point 3 as including on-line testing of both the reactor trip and engineered safety features (ESF) actuation logic channels, but since the wording may be confusing, this application proposes to change the wording to clarify that both the reactor trip and the ESF actuation logic channels are functionally tested at least every two months on a staggered basis (i.e., one train per month). The change is consistent with W STS and only involves a wording change which strengthens the Technical Specification requirement. The change does not involve hardware, procedural, or operational changes, and, therefore, does not affect safety analyses.

(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 evaluated. Extension of the calibration intervals in question were evaluated and the results documented in the ESFAS and Indicating Instrument Surveillance Test Extension reports. ESFAS and indicating instrument drift analyses were performed to evaluate actual past and projected future instrument drift. Revised safety system loop accuracy/setpoint calculations and EOP setting calculations show that, although some EOP setting changes will be made to accommodate postulated drift associated with the extended calibration intervals, safety analyses are not affected.

The changes to 1) specify LCO and surveillance requirements for the wide range containment pressure instrumentation channels, 2) add a quarterly functional test surveillance requirement to Item 4 of Table 4.1-1 for the low T_{avg} actuation circuits of the reactor coolant temperature channels, and 3) clarify that both reactor trip and ESF actuation logic channels are functionally tested constitute additional technical specification limitations and controls. Additionally, these changes are consistent with W STS.

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

Response:

The proposed changes do not involve significant reductions in margins of safety. Loop accuracy/setpoint calculations show that sufficient margin exists between the analytical and field trip settings for the low T_{avg}, the SG low-low level, the high and high-high containment pressure, the high differential steam line pressure, the low steam line pressure, the high steam flow (dependent upon turbine first stage pressure), the turbine trip low auto stop oil pressure, and the 480V bus undervoltage trip functions to accommodate postulated uncertainties associated with the extended calibration intervals. And, although changes to EOP settings will be made to accommodate the postulated uncertainties associated with the extended calibration intervals for the wide range reactor coolant loop temperature, the narrow and wide range SG level, and the steam line pressure instrumentation, the EOP setting changes do not in any way adversely affect the analytical limits established by safety analyses.

Extension of the calibration intervals in question do not affect safety analyses. The other changes being made in this application involve additional technical specification limitations and controls and are consistent with W STS. None of the changes involve significant reductions in margins of safety.

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) Indian Point 3 SER
2) Indian Point 3 FSAR
3) NYPA letters entitled and dated as follows: "Regulatory Guide 1.97, Revision 2 Implementation Program," dated June 29, 1984; "Regulatory Guide 1.97 Implementation Program," dated January 7, 1986; "Clarification of Regulatory Guide 1.97 Implementation Program," dated December 1, 1986; "Detailed Control Room Design Review," dated June 23, 1989; and "Regulatory Guide 1.97, Revision 3," dated May 9, 1991.
4) NRC Generic Letter 91-04, Enclosure 2, "Guidance for Addressing the Effect of Increased Surveillance Intervals on Instrument Drift and Safety Analysis Assumptions," dated April 2, 1991.
5) Instrument Drift Analysis for Engineered Safety Features Actuation Systems, NYPA document IP3-RPT-ESS-00321, dated July 23, 1992.
6) Instrument Drift Analysis for Indicating Loops, NYPA document IP3-RPT-MULT-00407, dated April 13, 1993.
7) Engineered Safety Features Actuation Systems Surveillance Test Extensions, NYPA document IP3-RPT-ESS-00400, dated May 10, 1993.
8) Indicating Instruments Surveillance Test Extensions, NYPA document IP3-RPT-MULTI-00424, dated May 5, 1993.
9) NYPA letter, "Proposed Changes to Technical Specifications Regarding Extension of Surveillance Test and Calibration Intervals for Reactor Protection System (RPS) to Accommodate a 24 Month Operating Cycle," dated February 18, 1993.
10) NRC Meeting Minutes (dated March 17, 1993) for February 23, 1993, Meeting (with the New York Power Authority) to Discuss Extension of Reactor Protection System Surveillance Intervals Required for a 24 Month Refueling Cycle.
11) Amendment 74 to Facility Operating License No. DPR-64, dated May 27, 1987.
12) NUREG - 1431, Revision 0, "Standard Technical Specifications - Westinghouse Plants," dated September 28, 1992.
13) Amendment 140 to Facility Operating License No. DPR-64, dated December 1, 1993.

ATTACHMENT III TO IPN-94-014

NEW YORK POWER AUTHORITY COMMITMENTS ASSOCIATED WITH

PROPOSED TECHNICAL SPECIFICATION CHANGES TO

EXTEND CALIBRATION INTERVALS FOR ENGINEERED SAFETY FEATURES ACTUATION SYSTEMS (ESFAS)/ INDICATING INSTRUMENT CIRCUITS

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

Commitment Number	Commitment	Due Date
IPN-94-014-1	LCO: Two wide range containment pressure channels will be available (new Item 1b of Table 3.5-5), with one required to be operable (1 channel may be inoperable for up to 7 days). Indication and recording will be provided for the wide range containment pressure variable.	See notes 1 and 2. NEW LCO being added to Technical Specifications.
IPN-94-014-2	Perform instrument channel calibration of the reactor coolant temperature instrumentation used for ESFAS and PAM functions (Item 4 of Table 4.1-1) at least once per 24 months.	See notes 1 and 3. (Instrument channel calibration of the reactor coolant temperature instrumentation used for RPS functions was extended to 24 months by Amendment 140.)
IPN-94-014-3	Perform instrument channel functional test of the reactor protection (Overtemperature (OT) delta T, overpower (OP) delta T, and T_{avg}) circuits of the reactor coolant temperature channels (Item 4 of Table 4.1-1) quarterly.	See note 1 for T_{avg}. T_{avg} functional test being added to Technical Specifications. Due date not applicable for OT delta T and OP delta T because channel functional tests for these circuits are already Technical Specification requirements.
IPN-94-014-4	Perform instrument channel calibration of the steam generator (SG) level instrumentation used for ESFAS and PAM functions (Items 10 and 28a of Table 4.1-1) at least once per 24 months.	See notes 1 and 3. (Instrument channel calibration of the SG level instrumentation used for RPS functions was extended to 24 months by Amendment 140.)

IPN-94-014-5	Perform instrument channel calibration of the narrow range containment pressure channels (Item 14a of Table 4.1-1) at least once per 24 months.	See notes 1, 2 and 3.
IPN-94-014-6	Perform instrument channel calibration of the wide range containment pressure channels (Item 14b of Table 4.1-1) at least once per 18 months.	Due date not applicable. See notes 2 and 3.
IPN-94-014-7	Perform instrument channel check of the wide range containment pressure channels (Item 14b of Table 4.1-1) monthly.	See notes 1 and 2.
IPN-94-014-8	Perform instrument channel calibration of the steam line pressure channels (Item 18 of Table 4.1-1) at least once per 24 months.	See notes 1 and 3.
IPN-94-014-9	Perform instrument channel calibration of the turbine first stage pressure channels (Item 19 of Table 4.1-1) at least once per 24 months.	See notes 1 and 3.
IPN-94-014-10	Perform ESF actuation logic channel functional tests at least once every two months on a staggered test basis (i.e., one train per month).	Due date not applicable. This is a clarification of Technical Specification requirements. Test already performed.
IPN-94-014-11	Perform instrument channel calibration of the undervoltage relays (Items 28b and 35a of Table 4.1-1) at least once per 24 months.	See notes 1 and 3.
IPN-94-014-12	Perform instrument channel calibration of the undervoltage alarm (Item 35c of Table 4.1-1) at least once per 24 months.	See notes 1 and 3.
IPN-94-014-13	Establish Drift Monitoring Program.	March 15, 1994.
IPN-94-014-14	The EOP T_C settings will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.

IPN-94-014-15	The EOP T_H setting corresponding to the saturation temperature of the low head SI pump shut-off pressure will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-16	The EOP T_H setting corresponding to the saturation temperature of the lowest steam line safety valve setting will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-17	The EOP narrow range SG level setting for periods under normal containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-18	The EOP narrow range SG level setting for periods under adverse containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-19	The EOP upper SG tap level setting for periods under normal containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-20	The EOP upper SG tap level setting for periods under adverse containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-21	The EOP wide range SG level setting for periods under normal containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-22	The EOP wide range SG level setting for periods under adverse containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.

IPN-94-014-23	The EOP wide range SG level setting indicating loss of heat sink for periods under normal containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-24	The EOP wide range SG level setting indicating loss of heat sink for periods under adverse containment conditions will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-25	The EOP steam line pressure setting corresponding to the saturation pressure at 350°F following a SG tube rupture will be changed to accommodate additional uncertainties associated with a 24 month operating cycle.	See note 1.
IPN-94-014-26	Perform on-line instrument channel checks of the narrow range reactor coolant (RC) loop temperature, the narrow range SG level, the narrow range containment pressure, the steam line pressure, and the turbine first stage pressure channels each shift to ensure operability of the narrow range RC temperature instruments, the narrow range SG level transmitters, the narrow range containment pressure instruments, the steam line pressure instruments, and the turbine first stage pressure transmitters.	Due date not applicable. These checks are already performed to comply with current Technical Specification requirements.

IPN-94-014-27	Perform on-line instrument channel functional tests of the narrow range RC loop temperature, the narrow range SG level, the narrow range containment pressure, the steam line pressure, and the turbine first stage pressure channels each quarter to ensure operability of the narrow range RC temperature instruments, the narrow range SG level transmitters, the narrow range containment pressure instruments, the steam line pressure instruments, and the turbine first stage pressure transmitters.	Due date not applicable. These tests are already performed to comply with current Technical Specification requirements.
IPN-94-014-28	Perform on-line ESF actuation logic channel functional tests every two months on a staggered basis to ensure operability of the narrow range RC temperature instruments, the narrow range SG level transmitters, the narrow range containment pressure instruments, the steam line pressure instruments, and the turbine first stage pressure transmitters.	Due date not applicable. ESF actuation logic functional test is already performed.
IPN-94-014-29	No credit is taken in the accident analyses for the turbine auto stop oil pressure trip.	Due date not applicable. Current safety analyses assumptions. Not a relaxation of current commitments to testing or maintenance.
IPN-94-014-30	No credit is taken for the undervoltage alarms.	Due date not applicable. Current safety analyses assumptions. Not a relaxation of current commitments to testing or maintenance.

NOTES

1. These commitments will be implemented within 30 days or prior to plant startup from existing outage, whichever is later.

2. LCO and Surveillance requirements for the narrow and wide range containment pressure channels are being distinguished in Indian Point 3 Technical Specification Tables 3.5-5 and 4.1-1.

3. Current Indian Point 3 Technical Specifications require calibration of these channels at least once every 18 months.