ATTACHMENT I TO IPN-93-004

PROPOSED TECHNICAL SPECIFICATION CHANGES

RELATED TO

RADIATION MONITORING SYSTEM CALIBRATION

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

Auxiliary Component Cooling Pumps are provided to deliver cooling water for the two Recirculation Pumps located inside the containment. Each recirculation pump is fed by two Auxiliary Component Cooling Pumps. A single Auxiliary Component Cooling Pump is capable of supplying the necessary cooling water required for a recirculation pump during the recirculation phase following a loss-of-coolant accident.

The control room ventilation is designed to filter the control room atmosphere for intake air and/or for recirculation during control room isolation conditions. The control room system is designed to automatically start upon control room isolation and to maintain the control room pressure to the design positive pressure so that all leakage should be out leakage.

Radiation monitor R-1 is not part of the Control Room Ventilation System. NRC letter dated January 27, 1982 concluded that, at IP3, "radiation monitors for makeup air are not required." NYPA has also demonstrated (calculation dated May 29, 1992) that Central Control Room (CCR) isolation is not required for maintaining radiation exposure within General Design Criteria 19 limits following a fuel handling accident or gas-decay-tank rupture. For a loss of coolant accident, CCR isolation is initiated by the safety injection signal.

The control room is equipped with two independent toxic gas monitoring systems. One system in the control room consists of a channel for oxygen (with two oxygen detectors) and a channel each for ammonia and chlorine. The second system in the control room ventilation intake consists of one channel each for oxygen, ammonia and chlorine. Oxygen detectors are used to indirectly monitor changes in carbon dioxide levels.

These toxic gas monitoring systems are designed to alarm in the control room upon detection of the short term exposure limit (STEL) value. The operability of the toxic gas monitoring systems provides assurance that the control room operators will have adequate time to take protective action in the event of an accidental toxic gas release. Selection of the gases to be monitored are based on the results described in the Indian Point Unit 3 Habitability Study for the Control Room, dated July, 1981. The alarm setpoints will be in accordance with industrial ventilation standards as defined by the American Conference of Governmental Industrial Hygienists.[16]

The OPS has been designed to withstand the effects of the postulated worse case Mass Input (i.e., single safety injection pump) without exceeding the 10 CFR 50, Appendix G curve. Curve III on Figure 3.1.A-3 provides the setpoint curve of the OPS PORVs which is sufficiently below the Appendix G curve such that PORVs overshoots would not exceed the allowable Appendix G pressures. Therefore, only one safety injection pump can be available to feed water into the RCS when the OPS is operable. The other pumps must

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	Q (1) Q (2)	1) Overtemperature - Δ T 2) Overpower - Δ T
5. Reactor Coolant Flow	S	18M	Q	
6. Pressurizer Water Level	S	18M	Q	
7. Pressurizer Pressure	S	18M	Q	High and Low
8. 6.9 KV Voltage & Frequency	N.A.	18M	Q	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	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
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 3 of 6)

Channel Description	Check	Calibrate	Test	
16. Containment Water Level Monitoring System:				
a. Containment Sump	N.A.	18M	N.A.	Narrow Range, Analog
b. Recirculation Sump	N.A.	18M	N.A.	Narrow Range, Analog
c. Containment Water Level	N.A.	18M	N.A.	Wide Range
17. Accumulator Level and Pressure	S***	18M	N.A.	
18. Steam Line Pressure	S	18M	Q	
19. Turbine First Stage Pressure	S	18M	Q	
20. Reactor Protection Relay Logic	N.A.	N.A.	TM	
21. Turbine Trip Low Auto Stop Oil Pressure	N.A.	18M	N.A.	
22. Boron Injection Tank Return Flow	S	18M	N.A.	
23. Temperature Sensor in Auxiliary Boiler Feedwater Pump Building	N.A.	N.A.	18M	
24. Temperature Sensors in Primary Auxiliary Building				
a. Piping Penetration Area	N.A.	N.A.	18M	
b. Mini-Containment Area	N.A.	N.A.	18M	
c. Steam Generator Blowdown Heat Exchanger Room	N.A.	N.A.	18M	

TABLE 4.1-1 (Sheet 4 of 6)

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

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 undervoltage and shunt trip attachments
			18M(2)	2) Independent operation of undervoltage 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
			18M(2)	2) Independent operation of undervoltage and shunt trip from Control Room manual push-button
			18M(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

Table Notation

* By means of the movable incore detector system

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

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

\# These requirements are applicable when specification 3.3.F.5 is in effect only.

S - Each Shift
W - Weekly
P - Prior to each startup if not done previous week
M - Monthly
NA - Not Applicable
Q - Quarterly
D - Daily
18M - At least once per 18 months
TM - At least every two months on a staggered test basis (i.e., one train per month)
24M - At least once per 24 months

TABLE 2.1-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION		
INSTRUMENT	**MINIMUM CHANNELS OPERABLE***	**ACTION**
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE		
a. Liquid Radwaste Effluent Line**	(1)	1
b. Steam Generator Blowdown Effluent Line	(1)	2
2. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE		
a. Service Water System Effluent Line	(1)	3
3. FLOW RATE MEASUREMENT DEVICES		
a. Liquid Radwaste Effluent Line	(1)	4
b. Steam Generator Blowdown Effluent Line	(1)	4

* During release by the pathway, channels shall be operable and in service during such release on a continuous, uninterupted basis. Except that outages are permitted, within the time frame and limitations of the specified action, for the purpose of maintenance of required tests, checks and calibration.

** The condensate polisher regenerative waste release path does not need to be monitored unless a primary to secondary side leak is present.

TABLE 3.1-1

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS				
INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. GROSS RADIOACTIVITY MONITORS PROVIDING ALARM AND AUTOMATIC TERMINATION OF RELEASE				
a. Liquid Radwaste Effluent Line (R-18 and R-61*****)	D*	D*	24M(3)	Q(1)*
b. Steam Generator Blowdown Effluent Line (R-19)	D*	M*	24M(3)	Q(1)*
2. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE				
a. Service Water System Effluent Line (R-16A and R-16B)	D*	M*	24M(3)	Q(2)*
b. Service Water System Effluent Line (R-23)	D*	M*	18M(3)	Q(2)*
3. FLOW RATE MEASUREMENT DEVICES				
a. Liquid Radwaste Effluent Line	D(4)	N.A.	R	Q
b. Steam Generator Blowdown Effluent Line	D(4)	N.A.	R	N.A.
4. RADIOACTIVITY RECORDERS				
a. Liquid Radwaste Effluent Line	D*	N.A.	24M	Q****
b. Steam Generator Blowdown Effluent Line	D*	N.A.	24M	Q****
5. TANK LEVEL INDICATING DEVICES***				
a. Refueling Water Storage Tank	D**	N.A.	R	R
b. Primary Water Storage Tank	D**	N.A.	R	R
c. Monitor Tank #31	D**	N.A.	R	R
d. Monitor Tank #32	D**	N.A.	R	R

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

** During liquid additions to the tank.

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

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

***** The condensate polisher regenerative waste release path does not need to be monitored unless a primary to secondary side leak is present.

TABLE 3.2-1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS					
INSTRUMENT	CHANNEL CHECK	SOURCE CHECK	CHANNEL CHANNEL CALIBRATION	FUNCTIONAL TEST	MODES IN WHICH SURVEILLANCE REQUIRED
1. WASTE GAS HOLDUP SYSTEM					
a. Noble Gas Activity Monitor Providing Alarm (R-20)	D	M	24M(2)	Q(1)***	*
2. WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a. Hydrogen Monitor	D	N.A.	M(3)	N.A.	**
b. Oxygen Monitor	D	N.A.	M(4)	N.A.	**
3. CONDENSER AIR EJECTOR					
a. Noble Gas Activity Monitor (R-15)	D	M	24M(2)	Q(1)***	*
4. ENVIRONMENTAL RELEASE POINTS (PLANT VENT, ADMIN. BUILDING CONTROLLED AREA. VENT, RAD. MACHINE SHOP VENT)					
a. Noble Gas Activity Monitor (R-14, R-27, R-46, and R-59)	D	M	24M(2)	Q(1)***	*
b. Iodine Sampler	W	N.A.	N.A.	N.A.	*
c. Particulate Sampler	W	N.A.	N.A.	N.A.	*
d. Flow Rate Monitor	D	N.A.	R	Q	*
e. Sampler Flow Rate Monitor	D	N.A.	R	N.A.	*
5. CONTAINMENT PURGE SYSTEM					
a. Containment Noble Gas Activity Monitor - Providing Alarm and Automatic Termination of Release (R-12)	D	M	24M(2)	Q(1)***	*

* Surveillance is required at all times except when monitor has been removed from service in accordance with Table 2.2-1.

** During waste gas holdup system operation (treatment for primary system off gases).

*** Will not include operation of automatic control functions.

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TABLE 3.2-1 (CONTINUED)

TABLE NOTATION

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:

1. Instrument indicates measured levels above the alarm setpoint.

2. Instrument controls not set in operate mode.

(2) Radioactive Calibration Standards used for channel calibrations shall be traceable to the National Bureau of Standards or an aliquot of calibration gas shall be analyzed with instrumentation which is calibrated with NBS traceable standards (standards from suppliers which participate in measurement assurance activities with NBS are acceptable).

(3) The CHANNEL CALIBRATION shall include the use of standard gas samples containing:

1. Less than or equal to, two volume percent hydrogen,

and

2. Greater than or equal to four volume percent hydrogen,

(4) The CHANNEL CALIBRATION shall include the use of standard gas samples containing:

1. Less than or equal to, one volume percent oxygen,

and

2. Greater than or equal to four volume percent oxygen.

24M At least once per 24 months.

ATTACHMENT II TO IPN-93-004

SAFETY EVALUATION

RELATED TO

RADIATION MONITORING SYSTEM CALIBRATION

TECHNICAL SPECIFICATION CHANGES

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

SAFETY EVALUATION
RELATED TO
RADIATION MONITORING SYSTEM CALIBRATION
TECHNICAL SPECIFICATION CHANGES

Section I - Description of Changes

This application for amendment to the Indian Point 3 (IP3) Technical Specifications proposes to change calibration requirements for the Radiation Monitoring System to accommodate operation with a 24 month operating cycle.

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

- calibration frequency of process and area radiation monitors (Appendix A Table 4.1-1 and Appendix B Tables 3.1-1 and 3.2-1),
- calibration frequency of radioactivity recorders (Appendix B Table 3.1-1).

Also included are:

- a bases change to Appendix A Section 3.3 to clarify IP3 requirements associated with Central Control Room (CCR) radiation monitoring,
- administrative changes to Appendix A Table 4.1-1 to specify radiation monitors by function and tag number and to incorporate all radiation monitors that have technical specification required surveillance into one item number in the table,
- administrative changes to Appendix B Tables 3.1-1 and 3.2-1 to identify the radiation monitor tag number associated with each monitoring function listed,
- administrative changes to Appendix B Tables 2.1-1 and 3.1-1 to clarify monitoring requirements associated with the condensate polisher waste release path,
- administrative changes to Appendix B Table 3.1-1 to clearly distinguish the surveillance requirement for R-23 as once per 18 months.

Section II - Evaluation of Changes

Starting with cycle nine (August 1992), Indian Point 3 began operating on 24 month cycles instead of the previous 18 month cycles. Technical Specification changes are requested for the Radiation Monitoring System to accommodate the longer operating cycle. Generally, in evaluating the extension of calibration intervals to be consistent with the length of the operating

cycle, the following factors are considered where applicable: the importance of the refueling test (i.e., does on-line testing demonstrate operability, or are failures only being detected during the refueling tests?), past equipment performance, and the burden of performing tests during power operation. Below is an evaluation of the changes proposed by this technical specification submittal.

Calibration of Technical Specification Required Process and Area Radiation Monitors

Based on the Authority's evaluation of the above listed factors, extension of the calibration intervals for Operating License Appendix A and Appendix B radiation monitors is proposed. Extension of the calibration intervals for the following Operating License Appendix A (Technical Specifications) radiation monitors is proposed:

R-5	Fuel Storage Building Area Radiation Monitor
R-11	Vapor Containment Particulate Activity Process Radiation Monitor
R-12	Vapor Containment Gas Activity Process Radiation Monitor
R-27	Wide Range Plant Vent Gas Activity Process Radiation Monitor
R-62A	Main Steam Line Activity Process Radiation Monitor
R-62B	Main Steam Line Activity Process Radiation Monitor
R-62C	Main Steam Line Activity Process Radiation Monitor
R-62D	Main Steam Line Activity Process Radiation Monitor
R-63A	Gross Failed Fuel Detector Process Radiation Monitor
R-63B	Gross Failed Fuel Detector Process Radiation Monitor

Extension of the calibration intervals for the following Operating License Appendix B (Radiological Environmental Technical Specifications - RETS) radiation monitors is proposed:

R-12	Vapor Containment Gas Activity Process Radiation Monitor
R-14	Plant Vent Gas Activity Process Radiation Monitor
R-15	Condenser Air Ejector Exhaust Gas Activity Process Radiation Monitor
R-16A	Fan Cooler and Motor Cooler Service Water Activity Process Radiation Monitor
R-16B	Fan Cooler and Motor Cooler Service Water Activity Process Radiation Monitor
R-18	Waste Disposal Liquid Activity Process Radiation Monitor
R-19	Steam Generator Blowdown Activity Process Radiation Monitor
R-20	Waste Disposal Gas Activity Process Radiation Monitor
R-27	Wide Range Plant Vent Gas Activity Process Radiation Monitor
R-46	Administration Building Particulate Activity Process Radiation Monitor
R-59	Radioactive Machine Shop Effluent Gas Activity Process Radiation Monitor
R-61	Condensate Polisher Overboard Process Radiation Monitor

The remaining Technical Specification or RETS required radiation monitors (R-25 and R-26, Vapor Containment High Radiation Area Monitors, and R-23, Service Water Activity Process Radiation Monitor) do not meet the Authority's acceptance criteria for extended calibration intervals and therefore will remain on an 18 month interval.

Radiation monitor R-1, which is the control room area radiation monitor and switches the CCR air conditioner to 80% emergency mode, is not required per the Technical Specifications or RETS. At IP3, CCR isolation is not required for maintaining radiation exposures within General Design Criteria 19 (GDC-19) limits following a fuel handling accident or a gas-decay-tank rupture (calculation dated May 29, 1992). For a loss of coolant accident, CCR isolation is initiated by the safety injection signal. Therefore, R-1 is not required for Control Room Ventilation System operability. The Authority proposes to add this fact to the bases of the Control Room Ventilation System Technical Specification (Section 3.3) so that the radiation monitoring requirements for the CCR are clearly stated.

Administrative changes to Technical Specification Table 4.1-1 are also proposed. These changes specify radiation monitors by function and tag number and incorporate all radiation monitors that have technical specification required surveillance into one item number.

Similar administrative changes to RETS Tables 3.1-1 and 3.2-1 are proposed to identify the radiation monitor tag number associated with each monitoring function listed.

Additionally, administrative changes are proposed to RETS Tables 2.1-1 and 3.1-1. These proposed changes will clearly state that the condensate polisher waste release path does not need to be monitored unless a primary to secondary side leak is present because, unless a primary to secondary side leak is present, this path is not a radwaste path.

Also, it was necessary to make administrative changes to RETS Table 3.1-1 to clearly distinguish the surveillance requirement for R-23 as once per 18 months (notation 18M in place of R). This type of administrative change was previously described and proposed by the Authority's letter dated October 26, 1992, however, the reformatting of the table proposed by this submittal makes it necessary to supplement the previously proposed changes.

Review of Occurrence Reports

Review of the IP3 Occurrence Reports has demonstrated that on-line testing, alarms, and routine rounds provide an effective means of identifying radiation monitor operability problems in a timely manner. The refueling calibrations are not the primary method of detecting operability problems with radiation monitors. The review of all radiation monitoring system related occurrence reports written over the last five years revealed that only 3 reports were written because the results of a refueling surveillance test revealed that a radiation monitor was out of tolerance. The remaining 97 occurrence reports related to the Radiation Monitoring System can be broken down as follows:

- 24 were discovered by performance of monthly or quarterly surveillance tests,
- 62 were discovered by alarms in the Central Control Room, by operators on routine rounds, or by routine channel checks, and
- 11 were not related to radiation monitor failures.

It is apparent from this review that CCR alarms, routine rounds and channel checks, as well as monthly and quarterly surveillance tests provide an effective means of identifying radiation monitor

operability problems in a timely manner. Furthermore, instrument drift of most of the process radiation monitors is compensated for by an adjustment of the conversion factors in accordance with the Process Radiation Monitor Calibration Factor Verification Program.

Radiation Monitors That Are Part of the Calibration Factor Verification Program

Of the previously listed radiation monitors for which a 24 month surveillance interval is proposed, the calibration factor is periodically verified per the Process Radiation Monitor Calibration Factor Verification Program for each of the following:

R-11	R-20
R-12	R-27
R-14	R-46
R-15	R-59
R-16A	R-61
R-16B	R-63A
R-18	R-63B
R-19	

The Process Radiation Monitor Calibration Factor Verification Program introduces a radioactive sample of known isotopic mixture and activity into each of the above listed process radiation monitors. After the sample is introduced into the monitor, the monitor reading, which is provided in counts per minute (cpm), is noted. Because the radioactive sample itself is of known isotopic mixture and activity, a conversion factor in μCi/cc per cpm can be calculated for each monitor. This procedure is performed at least annually for each of the above listed radiation monitors.

The measurements of radioactivity obtained from the radiation monitors that are part of the Process Radiation Monitor Calibration Factor Verification Program will not be affected by any instrument drift that may occur in the monitor. Any instrument drift that may occur in these monitors would cause a corresponding change to the conversion factor for the monitor. Therefore, all measurements of radioactivity calculated using the reading from the radiation monitor and its corresponding conversion factor are not affected by instrument drift.

Per the Radiation Monitor Setpoint Control Procedure (SOP-RM-10), all of the radiation monitors that are part of the Process Radiation Monitor Calibration Factor Verification Program and have automatic control functions have "variable" setpoints, that are changed in accordance with the latest calculated conversion factor.

Therefore, for the radiation monitors that are part of this program, an accurate indication of the radioactive releases will be obtained regardless of instrument drift. Any instrument drift that may have occurred since the last refueling surveillance was performed, regardless of the length of the refueling surveillance interval, would be compensated for by an appropriate change in the conversion factor and, for radiation monitors with variable setpoints, by an appropriate change to the setpoint.

All the radiation monitors to which the Process Radiation Monitor Calibration Factor Verification Program applies have daily channel checks and quarterly functional tests. All of these tests provide an on-line assessment of operability and serve as a means of detecting failure of a radiation monitor.

Since a sufficient on-line assessment program exists for the radiation monitors that are part of the Process Radiation Monitor Calibration Factor Verification Program, extension of the calibration interval for these monitors will not affect the plant's ability to detect monitor failure. Additionally, the calculation of conversion factors in accordance with the Process Radiation Monitor Calibration Factor Verification Program compensates for any instrument drift that may occur in these monitors. The review of radiation monitor occurrence reports has further demonstrated that, without the use of refueling calibrations, effective means of identifying radiation monitor operability problems in a timely manner exist through CCR alarms, routine rounds and channel checks, as well as monthly and quarterly surveillance tests. Therefore, the calibration requirement for radiation monitors R-11, R-12, R-14, R-15, R-16A, R-16B, R-18, R-19, R-20, R-27, R-46, R-59, R-61, R-63A, and R-63B can be safely extended to once every 24 months.

Radiation Monitors That Are Not Part of the Calibration Factor Verification Program

An evaluation of the radiation monitors that are not part of the Process Radiation Monitor Calibration Factor Verification Program is presented below. Past performance for monitors R-5, R-62A, R-62B, R-62C, and R-62D was determined by a review of the detector source response test. The detector source response test exposes the monitor to a calibrated test source, and confirms that the detector reading is within a given tolerance. Since the monitor detector is the primary source of drift, the detector source response test is considered the best overall indicator of monitor performance.

R-5

Radiation monitor R-5 is the fuel storage building area radiation monitor. The control functions associated with this monitor are: shutdown building supply fans and close dampers, start exhaust fan, divert exhaust through charcoal filters, close truck door and fill gaskets to seal the doors.

Radiation monitor R-5 is a Sorrento monitor with a R2A/10B detector. There are a number of radiation monitors with detectors of this type at IP3, however, R-5 is the only one that is required per the IP3 Technical Specifications. The results of the detector source response test for all radiation monitors of this type, regardless of whether they are part of the IP3 Technical Specifications, were reviewed so an accurate indication of the overall performance of this type of monitor could be presented. Additionally, the results of the source response test for the R-5 monitor were looked at individually to determine if the performance of this particular monitor was in accordance with the overall performance of similar monitors.

The results of the review of the overall performance of this type of monitor show that of seventeen (17) source response test results, three (3) failed to meet the test criteria. However, these overall test results are skewed due to the performance of one monitor, which is not part of the IP3

technical specifications but is of this make and model. Eliminating this one monitor from the overall results, only one (1) failure is found in fifteen (15) source response test results.

The results of the review of the test results for monitor R-5 alone indicate that the monitor has passed the source response test criteria for all three (3) tests that were reviewed. Therefore, the performance of this radiation monitor is in accordance with the overall performance of this type of monitor.

There are two procedures in place which provide an on-line assessment of the operability of the R-5 monitor. The two procedures are the quarterly functional test procedure and the Health Physics Periodic Task Scheduling Procedure.

A functional test for this monitor is performed on a quarterly basis. This quarterly surveillance test provides an on-line assessment of the operability of the monitor and serves as a means of detecting failure.

The Health Physics Periodic Task Scheduling Procedure provides an additional on-line assessment of the operability of the R-5 monitor. Per this procedure, periodic area radiation surveys are performed in all areas of the plant. For those areas where an Area Radiation Monitor exists, the reading recorded by the survey is compared to the corresponding monitor indication. Large discrepancies between the survey and the Area Radiation Monitor reading are evaluated. Therefore, the Health Physics surveys provide an additional on-line assessment of operability and a means of detecting failure for this monitor.

Vendor recommendations associated with this type of monitor were reviewed. The vendor does not specify a maximum calibration interval for this type of monitor. Rather, discussions with vendor representatives indicate that calibration frequency should be based on plant specific performance and application.

The R-5 trip setting is not assumed in the fuel handling accident analyses. Therefore, any postulated increases in drift will not invalidate the FSAR accident analyses assumptions. In the fuel handling accident analyses, all offsite radiation exposures were computed under the assumption that all releases to the atmosphere were unfiltered.

The overall good performance of this monitor in addition to the two procedures that are in place to detect failure of the monitor allow for the safe extension of the calibration interval for this monitor. Any postulated increases in drift will not invalidate the FSAR accident analyses assumptions. Additionally, the review of radiation monitor occurrence reports has demonstrated that, without the use of refueling calibrations, effective means of identifying radiation monitor operability problems in a timely manner exist through CCR alarms, routine rounds and channel checks, as well as monthly and quarterly surveillance tests. Therefore, the calibration requirement for radiation monitor R-5 can be safely extended to once every 24 months.

R-62A, R-62B, R-62C, and R-62D

Radiation Monitors R-62A, R-62B, R-62C, and R-62D monitor for major primary to secondary side leakage. These monitors do not have any control functions.

Radiation Monitors R-62A, R-62B, R-62C, and R-62D are all Sorrento monitors with similar type detectors. There are no additional radiation monitors that have similar detectors at IP3. The results of the detector source response test for all four radiation monitors grouped together were reviewed so an accurate indication of the overall performance of this type of monitor could be presented. Additionally, the results of the source response test for each individual monitor were reviewed to determine if the performance of each monitor was in accordance with the overall performance of this type of monitor.

The results of the review of the overall performance of this type of monitor show that of sixteen (16) source response test results, three (3) failed to meet the test criteria. The results of the review of the test results for monitor R-62A alone indicate that the monitor has passed the source response test criteria for all four (4) tests that were reviewed. The results of the review of the test results for monitors R-62B, R-62C, and R-62D indicate that each monitor passed three (3) of four (4) tests. Therefore, the performance of each individual radiation monitor is in accordance with the overall performance of this type of monitor.

Functional tests of these monitors are performed on a quarterly basis. These quarterly surveillance tests provide on-line assessments of the operability of the monitor and serve as a means of detecting failure.

Vendor recommendations associated with this type of monitor were reviewed. The vendor does not specify a maximum calibration interval for this type of monitor. Rather, discussions with vendor representatives indicate that calibration frequency should be based on plant specific performance and application.

The calibration of radiation monitors R-62A, R-62B, R-62C, and R-62D must be performed during plant shutdown. Therefore, to avoid either an 18 month surveillance outage or an extended mid-cycle outage, changes are required to the calibration test intervals for these monitors.

The overall good performance of these monitors in addition to the quarterly functional test that is in place to detect monitor failure allow for the extension of the calibration interval for these monitors. Additionally, the review of radiation monitor occurrence reports has demonstrated that, without the use of refueling calibrations, effective means of identifying radiation monitor operability problems in a timely manner exist through CCR alarms, routine rounds and channel checks, as well as monthly and quarterly surveillance tests. Therefore, the calibration requirements for radiation monitors R-62A, R-62B, R-62C, and R-62D can be safely extended to once every 24 months.

Calibration of RETS Required Radioactivity Recorders

The Radiological Environmental Technical Specifications (RETS) currently require that the radioactive recorders associated with the liquid radwaste effluent line and the steam generator blowdown effluent line be calibrated on an 18 month interval. This requirement is stated in item 4 of Table 3.1-1. This interval can be safely extended to once every 24 months.

A review of surveillance tests over the last five years for the Liquid Radwaste Radiation Monitor (R-18) and the Steam Generator Blowdown Radiation Monitor (R-19) show that the respective radioactivity recorder as-found readings were always within the required calibration tolerance.

Functional tests of these radioactivity recorders are performed on a quarterly and monthly basis. These surveillance tests provide on-line assessments of the operability of the radioactive recorders and serve as a means of detecting failure.

The overall good performance of these recorders in addition to the quarterly and monthly functional tests that are in place to detect recorder failure allow for the extension of the calibration interval for these recorders from once every 18 months to once every 24 months.

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 administrative changes to Table 4.1-1 of Appendix A and to Tables 2.1-1, 3.1-1 and 3.2-1 of Appendix B to the Operating License allow for improved readability and clarification of the Technical Specifications and RETS. These changes do not affect any probabilities or consequences of any accident previously evaluated because they do not change any current Technical Specification or RETS requirements.

The bases change to section 3.3 does not affect any current Technical Specification requirements and therefore, do not affect the probabilities or consequences of any accident previously evaluated. This bases change clarifies current requirements associated with radiation monitoring of the CCR.

The other changes propose extending the calibration intervals for certain radiation monitors and radioactive recorders to be consistent with the length of the operating cycle (24 months). These changes can not affect the probabilities of any previously analyzed accidents because this instrumentation is not a cause of any previously analyzed accidents. This instrumentation provides indication of a plant malfunction which might

lead to a health hazard or plant damage, and provides indication associated with radioactive releases to the environment.

There is adequate assurance that an appropriate assessment of the operability of the radiation monitors and radioactive recorders will be provided through various functional tests and programs. Since extending the calibration test intervals for this instrumentation does not involve changes in equipment/system functions and does not adversely affect operability, the changes do not involve a significant increase in the consequences of any accident previously evaluated.

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

Response:

The administrative changes to Table 4.1-1 of Appendix A and to Tables 2.1-1, 3.1-1 and 3.2-1 of Appendix B to the Operating License allow for improved readability and clarification of the Technical Specifications and RETS. These changes do not create the possibility of a new or different kind of accident from any previously evaluated because they do not change any current Technical Specification or RETS requirements.

The bases change to section 3.3 does not affect any current Technical Specification requirements and therefore, does not create the possibility of a new or different kind of accident from any previously evaluated. This bases change clarifies current requirements associated with radiation monitoring of the CCR.

The other changes propose extending the calibration intervals for certain radiation monitors and radioactive recorders to be consistent with the length of the operating cycle (24 months). Since these proposed changes do not involve changes in equipment/system functions and do not adversely affect operability, the proposed changes do not create the possibility of a new or different kind of accident from any previously analyzed.

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

Response:

The administrative changes to Table 4.1-1 of Appendix A and to Tables 2.1-1, 3.1-1 and 3.2-1 of Appendix B to the Operating License allow for improved readability and clarification of the Technical Specifications and RETS. These changes do not involve a significant reduction in a margin of safety because they do not change any current Technical Specification or RETS requirements.

The bases change to section 3.3 does not affect any current Technical Specification requirements and therefore, does not involve a reduction in a margin of safety. These

bases changes clarify current requirements associated with radiation monitoring of the CCR.

The other changes propose extending the calibration intervals for certain radiation monitors and radioactive recorders to be consistent with the length of the operating cycle (24 months). These changes will not involve a significant reduction in a margin of safety.

There is adequate assurance that an appropriate assessment of the operability of the radiation monitors and radioactive recorders will be provided through various functional tests and programs. Additionally, the proposed changes to extend the calibration intervals for this instrumentation do not involve changes to established setpoints. Therefore, the proposed amendment does not involve a significant reduction in a margin 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) IP3 SER
2) IP3 FSAR
3) Indian Point 3 - 24 Month Operating Cycle Radiation Monitoring System Surveillance Test Extensions, IP3-RPT-RM-00403, November 1992.