Table 4.1-1

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
10.	Rod Position Bank Counters	S	N.A.	N.A.	With analog rod position
11.	Steam Generator Level	S	R#	Q	
12.	Charging Flow	N.A.	R#	N.A.	
13.	Residual Heat Removal Pump Flow	N.A.	R#	N.A.	
14.	Boric Acid Tank Level	W	R	N.A.	Bubbler tube rodded during calibration
15.	Refueling Water Storage Tank Level	W	R	N.A.	
16.	DELETED				
17.	Volume Control Tank Level	N.A.	R	N.A.	
18a.	Containment Pressure	D	R	Q	Wide Range
18b.	Containment Pressure	S	R	Q	Narrow Range
18c.	Containment Pressure (PT-3300,PT-3301)	M	R	N.A.	High Range
19.	Process Radiation Monitoring System	D	R#	M	
19a.	Area Radiation Monitoring System	D	R#	M	
19b.	Area Radiation Monitoring System (VC)	D	R#	M	

SAFETY ASSESSMENT

LIQUID PROCESS RADIATION MONITOR CALIBRATION
(R-48 & R-54)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

DESCRIPTION OF CHANGE

Technical Specification Table 4.10-2, item 1.a, requires that the liquid radwaste effluent monitors be calibrated at a refueling interval. This Technical Specification pertains to R-48 and R-54. Currently, this surveillance is performed at 18 month (+25%) intervals. It is proposed to change the surveillance interval to 24 months (+25%). This change is being made in accordance with Generic Letter 91-04.

Liquid wastes are directed to the waste holdup tank where preliminary analysis determines whether the liquid is suitable for discharge or whether it needs processing. If it is suitable for discharge, it is pumped to the waste condensate tanks where its activity can be determined for recording by isolation, sampling, and analyzing. When one tank is filled, it is isolated and sampled for analysis while the second tank is in service. If analysis confirms the activity level to be suitable for discharge, the liquid is pumped through a flow meter and a radiation monitor (PRM R-48) to the condenser circulating water discharge. Otherwise, it is returned to the waste holdup tank for processing. A trip valve is provided in the release line to prevent an inadvertent release of high activity fluid.

If the waste holdup tank needs processing, it is pumped to the Indian Point Unit 1 waste collection tanks. From there, the liquid is processed and the distillate produced is collected in the distillate storage tanks. When a distillate storage tank is full, it is isolated and sampled to determine the allowable release rate. If the contents of the tank are unsuitable for release, they are returned to a waste collection tank for reprocessing. If analysis confirms that the activity level is suitable for release, the distillate is discharged to the river. A radiation detector (PRM R-54) and high radiation trip valve are provided in the release line to prevent an inadvertent release of high activity fluid.

Due to the Radiation Monitoring Betterment Program, there was only one completed procedure for each of these monitors. The procedure found R-54 and R-48 to be satisfactory with no equipment discrepancies.

These monitors were calibrated in 1988 using PC-V2 and PC-EM23. These calibrations were reviewed, and all results were satisfactory.

These detectors monitor activity in potentially radioactive liquid discharge pathways. The setpoints of the alarm/trip associated with these detectors is set at a level slightly higher than the expected concentration of the specific discharge. This setpoint is always low enough to provide adequate warning and termination of the discharge before the allowed concentration is reached.

The installed monitoring systems (R-48 and R-54) are not designed to determine the nature and amount of radioactivity in the liquid radwaste effluent, but are designed to detect isotopes of interest. The systems monitor gross activity and are designed to generate an alarm and automatic trip of the trip valves in the event of high activity fluid in the respective release lines. Isotopic identification and concentration are determined by grab sample analysis. The setpoints are not critical to plant operation or safety, and the readings are not used in calculations which required discrete accuracy. Operability is far more important than accuracy for these detectors.

These monitors are subjected to a daily channel check, a source check prior to each discharge, and a quarterly functional test. These checks would detect inoperable conditions. Therefore, based on the above, increasing the time interval from 18 months to 24 months between calibrations would have no significant affect on safety.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The proposed change does not involve a significant hazards consideration since:

1. There is no significant increase in the probability or consequences of an accident.

   These monitors provide a backup function to the grab sample and radiochemical analysis that must be performed prior to discharge of a tank's inventory to the environment. The monitors would only provide a safety function if a major violation of plant procedures occurred. Even then setpoints are established very conservatively with respect to discharge limits such that excessive drift would have to occur to even approach the discharge limit. Accordingly, extending the calibration interval by several months would have minimal impact upon the probability of discharging a tank whose radioactivity content exceeded the discharge limit.

2. The possibility of a new or different kind of accident from any previously analyzed has not been created.

   The primary means of determining whether a tank's inventory is acceptable for discharge is by radiochemical analysis. These monitors provide a backup to the radiochemical analysis.

3. There has been no reduction in the margin of safety.

   The quarterly functional tests and source check at the time of discharge assure there will be a minimal impact upon safety if the operating cycle were extended by several months.

SAFETY ASSESSMENT

LIQUID PROCESS RADIATION MONITOR CALIBRATION
(R-49)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

DESCRIPTION OF CHANGE

Technical Specifications Table 4.10-2, item 1.b, requires that the steam generator blowdown effluent line monitor (R-49) be calibrated at a refueling interval. This assessment applies to monitor R-49. Currently, this surveillance is performed every 18 months (+25%). It is proposed that this surveillance be changed to every 24 months (+25%). This change is being proposed in accordance with the guidance contained in Generic Letter 91-04.

R-49 monitors the liquid blowdown from the secondary side of the steam generators. Radioactivity in this stream would indicate a primary to secondary leak, providing information to back up the condenser air removal gas monitor. Samples from all four steam generators are mixed in a common header and the common sample is monitored. Upon indication of high activity, an interlock from monitor R-49 closes all steam generator blowdown containment isolation valves. Each steam generator is individually sampled to determine the source. The constant flow samples are monitored (after the coolers) by monitors R-55A through R-55D.

Due to the location of monitor R-49, the sample travel time from the sample point to the monitor is 90 seconds to 2 minutes. The sample point is downstream of the steam generator blowdown containment isolation valves which close on a Phase A containment isolation signal. The signal from R-49 is one of the parameters available to the operator to diagnose a steam generator tube rupture, thus backing up the indication from the condenser air ejector monitor. Initiation of safety injection and Phase A isolation, in response to a steam generator tube rupture, could prevent R-49 from detecting the increase in activity resulting from the steam generator tube rupture. R-49 is not a primary indication to the operator of steam generator tube rupture, thus the ability of the operator to respond to steam generator tube rupture will not be adversely affected.

This monitor is hardwired to a chart recorder in the control room and will annunciate in the control room independent of its communication loop through the minicomputer. It is designed to be capable of functioning after a safe shutdown earthquake.

Due to the Radiation Monitor Betterment Program, the steam generator blowdown monitor, R-19, was recently replaced by R-49. Because of this, there was only one completed procedure, PC-EM23, for this detector. This procedure noted that the SAS readings were out of the test tolerance. This discrepancy did not render the monitor inoperable.

The Limiting Conditions for Operation associated with R-49 do not limit operations, but only require grab samples in the event of monitor inoperability. Also, this monitor does not have setpoints which are critical to plant operation or safety, nor are its readings used in calculations which require discrete accuracy. The installed monitoring system is not designed to determine the nature and amount of radioactivity in the blowdown effluents, but is designed to detect the relative changes in the radioactivity level of the stream. The system monitors gross activity and is designed to generate an alarm and automatic closure of all steam generator blowdown containment isolation valves in the event a high

radiation level is detected. Isotopic identification and concentrations are determined by grab sample analysis. The setpoint of the alarm/trip associated with this detector is set at a level slightly higher than the expected concentration of the discharge. This setpoint is low enough to provide adequate warning and termination of the discharge.

The single performance of PC-EM23 and R-49 did not reveal any discrepancies which would render the monitor inoperable. This monitor is subjected to a daily channel check, a monthly source check and a quarterly functional test. These checks would detect instrument malfunction and any inoperable conditions. Therefore, based on the above, increasing the time interval from 18 months to 24 months between calibrations would have no significant affect on safety.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The proposed change does not involve a significant hazards consideration since:

1. There is no significant increase in the probability or consequences of an accident.

   Although, there is limited past data for this instrument, there were no unacceptable test results and the monitor is expected to be reliable. The monitor provides automatic isolation of the steam generator blowdown valves in the event of a steam generator tube leak of sufficient magnitude. However, for small leaks, the primary means of detection is the condenser off-gas radiation monitor. For larger tube leaks ranging to a tube rupture, other plant parameters would respond such as pressurizer level which would result in an overall containment isolation signal.

   R-49 has a setpoint adjusted for the anticipated radioactivity level in the discharge which is considerably less than any limit. This potential drift could be accommodated before any limit would be exceeded. This drift is more than the device has exhibited to date. Malfunction of the instrument would be detected by the daily, monthly or quarterly tests. In the extreme, total failure of the monitor could be tolerated due to the alternate means of isolating blowdown discussed above.

2. The possibility of a new or different kind of accident from any previously analyzed has not been created.

   Based upon limited past test data, and its inherent design features, R-49 has a demonstrated reliability. However, even if excessive drift did develop or the device were to totally fail, alternate means exist to achieve the discharge valve closure caused by R-49. Accordingly, the possibility of creating a new or different kind of accident has not been created.

3. There has been no reduction in the margin of safety.

R-49 is expected to be a reliable device based upon a limited past test data. This fact, together with alternate means of achieving the function provided by R-49, results in minimal impact upon safety by extending the operating cycle several months.

SAFETY ASSESSMENT

AREA RADIATION MONITORS

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

DESCRIPTION OF CHANGE

Technical Specification Table 4.1-1, Item 19a, requires that Area Radiation Monitors (ARM) in accessible areas be calibrated every 18 months (+25%). It is proposed that this surveillance frequency be changed to every 24 months (+25%). This change is being proposed in accordance with the guidance contained in Generic Letter 91-04.

Area radiation monitors are provided at strategic points in the plant to give early warning of plant malfunctions which might lead to a health hazard or plant damage. These instruments detect, compute, and alarm the radiation levels in their respective areas. In the event the radiation level should rise above a desired setpoint, an alarm is initiated in the control room. These monitors do not have setpoints which are used in the safety analyses, but rather provide gross indication of radiation increases. They operate in conjunction with regular and special radiation surveys and with chemical and radiochemical analyses performed by the plant staff. Adequate information and warning is thereby provided for the continued safe operation of the plant and assurance that personnel exposure does not exceed limits.

The control room air filtration system 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. Control room isolation is initiated either by a safety injection signal or by detection of high radioactivity in the ventilation ducts providing outside air to the control room. The radiation monitoring system is conservatively set to alarm and initiate control room isolation at 0.75 mrem/hr.

Test results from three completed tests covering nearly five years were reviewed. A fourth test had been performed during this interval, which was documented as passed. Discrepancies fell into one of two categories. Either the ARM was out of service due to previously identified problems or measured values were found to be out of tolerance. In all cases where measured values were found to be out of tolerance, the instrument was still operational as evidenced by the "as found" source check.

Daily channel checks and a monthly channel test is performed on the control room monitor.

None of the monitors calibrated have Technical Specification limiting conditions for operation associated with them. Their prime function is to provide indication of changing radiation levels. Past tests did not reveal any failures to meet the prime function over the last four tests. All failures were detected by other means. These monitors are subjected to a channel test every 31 days which will detect any gross failures of the instrument. Therefore, based on these factors, increasing the time interval from 18 months to 24 months between inspections would have no significant affect on safety.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The proposed change does not involve a significant hazards consideration since:

1. There is no significant increase in the probability or consequences of an accident.

   The area radiation monitors (with the exception of the CCR ventilation monitors) are not relied upon for the purpose of mitigating an accident described in the FSAR. Furthermore, they are unrelated to accident initiation. Their function is to provide an early alarm to plant personnel in the event of a radiological release within the confines of the plant. Thus, maintaining an alarm within a given setpoint tolerance is not essential; continued operability is important. The CCR monitor is surveilled on a daily and monthly basis.

2. The possibility of a new or different kind of accident from any previously analyzed has not been created.

   With the exception of the CCR ventilation radiation monitors, the area radiation monitors are not relied upon to detect or mitigate an accident. The setpoint for the CCR monitor is based upon exposure of plant personnel in restricted areas per 10 CFR 20.

3. There has been no reduction in the margin of safety.

   All of the radiation monitors are subjected to a monthly test. In addition the CCR monitor is subjected to a daily channel check. These more frequent surveillances would detect gross monitor malfunction for the proposed longer operating cycle.

SAFETY ASSESSMENT

MAIN STEAM LINE RADIATION MONITOR
(R-28, 29, 30 & 31)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

SAFETY ASSESSMENT

SERVICE WATER SYSTEM EFFLUENT LINE MONITORS
(R-46 & R-53)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

DESCRIPTION OF CHANGE

Technical Specification Table 4.10-2, Item 2.a requires that the Service Water System effluent line monitor(s) (R-46 and R-53) be calibrated at a refueling interval. Currently, this is performed on an 18 month (+25%) basis. It is proposed that the surveillance interval be extended to 24 months (+25%). This change is being proposed in accordance with the guidance contained in Generic Letter 91-04.

Two redundant monitors, R-46 and R-53, monitor the service water from all containment fan cooler units. Small bypass flows from each of the heat exchangers and from the fan motor coolers are mixed in a common header and monitored. During a loss of coolant accident, radioactivity at this point would indicate a leak from the containment atmosphere into the Service Water System.

Each of these channels is hardwired to a chart recorder in the control room and also to a control room annunciator, independent of the communications link through the minicomputer. These monitors and connecting piping are designed to be capable of functioning after a safe shutdown earthquake.

Due to the Radiation Monitoring Betterment Program implemented in December of 1988, the service water return from containment fan cooler units monitors (R-16 and R-23) were recently replaced by R-46 and R-53. Because of this, there was only one completed procedure, PC-EM23, for R-53, and two completed procedures for R-46. These were reviewed and all discrepancies except one were found to fall into the category of values measured during the test being out of tolerance. In all cases where measured values were found to be out of tolerance, the instrument was still operational. The exception noted was a degraded detector which was replaced. The "as found" status of the detector would not have rendered the instrument inoperable, but might have caused future erroneous readings.

These monitors were calibrated in 1988 using PC-V2 and PC-EM23. These calibrations were reviewed and all results were satisfactory.

PRM R-46 and PRM R-53 are redundant monitors, and therefore, only one is required to be operable per the Technical Specification Limiting Conditions for Operation associated with them. In the event of a loss of both monitors, grab samples are required every 12 hours, but plant operation is not limited. These monitors do not have setpoints which are critical to plant operation or safety, and their readings are not used in calculations which require discrete accuracy. The prime function of this monitor is to provide an indication of changing radiation levels during a loss of coolant accident which would indicate a leak from the containment atmosphere into the Service Water System. Under these circumstances, grab samples would be used to determine which fan cooling unit was leaking, and that cooler could be isolated. Operability of these monitors is far more important than accuracy.

These monitors are subjected to a daily channel check, a monthly source check, and quarterly functional test. These checks would detect abnormalities and any inoperable conditions. Therefore, based on redundancy and the additional tests performed, increasing the time interval from 18 months to 24 months between calibrations would have no significant affect on safety.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The proposed change does not involve a significant hazards consideration since:

1. There is no significant increase in the probability or consequences of an accident.

   R-46 and R-53 are redundant monitors. Furthermore, no control function is derived from these monitors for the purpose of mitigating an accident. From the viewpoint of safety, detection of a containment breach is of prime importance and continued monitor operability, rather than maintaining a specific setpoint, is the key monitoring task. The setpoints are set sufficiently high (greater than background) to preclude the generation of false alarms.

2. The possibility of a new or different kind of accident from any previously analyzed has not been created.

   Continued operability of the monitors is critical to the detection of a containment boundary breach permitting operator action to isolate the breach. This requirement is met by the provision of two monitors rather than maintaining a specific setpoint.

3. There has been no reduction in the margin of safety.

   The margin of safety is maintained by the provision of two monitors. Gross drift of a setpoint is not critical from the viewpoint of safety. Drift could be experienced by the scintillator and/or photomultiplier; the remainder of the channel is digital and not subject to drift. However, during normal operation radioactivity is not present in the service water system and therefore drift is not anticipated.

SAFETY ASSESSMENT

PROCESS RADIATION MONITORING SYSTEM (R-39 & R-40)

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247

DESCRIPTION OF CHANGE

Technical Specification Table 4.1-1, item 19, requires that the Process Radiation Monitoring Systems be calibrated at a refueling interval. This assessment refers to R-39 and R-40. Currently, this surveillance is performed every 18 months (+25%). It is proposed that this surveillance interval be revised to 24 months (+25%). This change is being proposed in accordance with the guidance contained in Generic Letter 91-04.

Monitors R-39 and R-40 monitor the service water from component cooling heat exchangers 21 and 22 respectively. Radioactivity in these streams would indicate a component cooling heat exchanger leak when there is radioactivity in the component cooling loop. These monitors are wired to a control room annunciator, independent of their communication loop through the minicomputer.

Due to the Radiation Monitoring Betterment Program, monitors (R-39 and R-40) for service water from component cooling heat exchangers 21 and 22 were recently installed. Because of this, there was only one completed procedure, PC-EM23, for each of these monitors. These were reviewed and for the results for R-39, were satisfactory. For R-40, two discrepancies were found. The first was that the setpoints were not retained in memory after a power outage due to a weak battery. This would have been detected at the first monthly test after a power outage. Also, a problem with the scaler board was noted during the calibration. The board was replaced and a work order was issued to repair the instrument. These problems did not render the instrument inoperable. The "as found" data was satisfactory.

Neither R-39 nor R-40 have Technical Specification Limiting Conditions for Operation associated with them. Also, neither of them have setpoints which are critical to plant operation or safety, nor are their readings used in calculations which require discrete accuracy. Their prime function is to provide indication of changing radiation levels in the service water which would indicate a component cooling heat exchanger leak when there is radioactivity in the component cooling loop. If there was radioactivity in the component cooling loop, and a leak into service water from the component cooling heat exchangers, then isotopic identification and concentrations would be determined by grab sample analysis of the effluent discharge.

These instruments are static devices with proven reliability. Abnormal conditions or failures would be detected by the monthly tests.

Based on the above conditions, increasing the time interval from 18 months to 24 months between calibrations would have no significant affect on safety.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

The proposed change does not involve a significant hazards consideration since:

1. There is no significant increase in the probability or consequences of an accident.

   R-39 and R-40 monitor service water to determine whether radioactivity has entered this system. Both monitors are used for gross indication of radioactivity. During normal operation the primary source of radioactivity would be the primary system. Leakage would initially be into the component cooling water system where it would be initially detected by a separate monitor (R-47).

   There is limited historical data for these monitors. However, the data which is available indicates good past performance.

   The setpoints for these devices are not critical to any safety analyses and are set at high levels to preclude false alarms. Drift could be experienced by the scintillator and/or photomultiplier; the remainder of the channel is digital. Due to the negligible level of radiation seen by this monitor the amount of degradation over time is minimal.

   Under these circumstances there would be no significant increase in the probability or consequences of an accident should the operability cycle be extended several months due to an extended surveillance cycle.

2. The possibility of a new or different kind of accident from any previously analyzed has not been created.

   No accident analysis takes credit for these monitors. In addition, during normal plant operation leakage into the component cooling water system must initially occur. This leakage would be detected by a third independent monitor.

3. There has been no reduction in the margin of safety.

   Due to the alternate means of monitoring primary leakage as well as monthly checks of these monitors, increasing the time interval from 18 months to 24 months would have no significant impact on safety.