ATTACHMENT A

PROPOSED TECHNICAL SPECIFICATION CHANGES

RECONCILIATION

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
AUGUST, 1996

Ta[illegible]1-1

<u>Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels</u>

	Channel Description	Check	Calibrate	Test	Remarks
1.	Nuclear Power Range	S	D (1) M (3)[*1]	Q (2)	1) Heat balance calibration 2) Signal to delta T; bistable action (permissive, rod stop, trips) 3) Upper and lower chambers for axial offset.
2.	Nuclear Intermediate Range	S (1)	N.A.	S/U (2)[*2]	1) Once/shift when in service Log level; bistable action (permissive, rod stop, trip)
3.	Nuclear Source Range	S (1)	N.A.	S/U (2)[*2]	1) Once/shift when in service 2) Bistable action (alarm, trip)
4.	Reactor Coolant Temperature	S	R#	Q (1)	1) Overtemperature - delta T 2) Overpower - delta T
5.	Reactor Coolant Flow	S	R#	Q	
6.	Pressurizer Water Level	S	R#	Q	
7.	Pressurizer Pressure (High & Low)	S	R#	Q	
8.	6.9 kV Voltage & Frequency	N.A.	R#	Q	Reactor Protection circuits only
9.	Analog Rod Position	S	R#	M	
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.	

Ta[illegible]1-1

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
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	Q	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	
20.	Boric Acid Make-up Flow Channel	N.A.	R#	N.A.	

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
21a.	Containment Sump and Recirculation Sump Level (Discrete)	S	R#	R#	Discrete Level Indication Systems.
21b.	Containment Sump, Recirculation Sump and Reactor Cavity Level (Continuous)	S	R#	R#	Continuous Level Indication Systems.
21c.	Reactor Cavity Level Alarm	N.A.	R#	R#	Level Alarm System
21d.	Containment Sump Discharge Flow	S	R#	M	Flow Monitor
21e.	Containment Fan Cooler Condensate Flow	S	R#	M[*3]	
22a.	Accumulator Level	S	R#	N.A.	
22b.	Accumulator Pressure	S	R#	N.A.	
23.	Steam Line Pressure	S	R#	Q	
24.	Turbine First Stage Pressure	S	R#	Q	
25.	Reactor Trip Logic Channel Testing	N.A.	N.A.	M[*9]	
26.	Deleted				
27.	Turbine Trip				
	a. Low Auto Stop Oil Pressure	N.A.	R#	N.A.	

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
28.	Control Rod Protection (for use with LOPAR fuel)	N.A.	R#	*4	
29.	Loss of Power				
	a. 480v Emergency Bus Undervoltage (Loss of Voltage)	N.A.	R#	R#	
	b. 480v Emergency Bus Undervoltage (Degraded Voltage)	N.A.	R#	R#	
	c. 480v Emergency Bus Undervoltage (Alarm)	N.A.	R#	M	
30.	Auxiliary Feedwater				
	a. Steam Generator Water Level (Low-Low)	S	R#	R#	
	b. Low-Low Level AFWS Automatic Actuation Logic	N.A.	N.A.	M	Test one logic channel per month on an alternating basis.
	c. Station Blackout (Undervoltage)	N.A.	R#	R#	
	d. Trip of Main Feedwater Pumps	N.A.	N.A.	R#	
31.	Reactor Coolant System Subcooling Margin Monitor	M	R#	N.A.	
32.	PORV Position Indicator (Limit Switch)	M	R#	R#	

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
33.	PORV Block Valve Position Indicator (Limit Switch)	M*5	R#	R#	
34.	Safety Valve Position Indicator (Acoustic Monitor)	M	R#	R#	
35.	Auxiliary Feedwater Flow Rate	M	R#	R#	
36.	PORV Actuation/ Reclosure Setpoints	N.A.	R#	N.A.	
37.	Overpressure Protection System (OPS)	N.A.	R#	*6	
38.	Wide Range Plant Vent Noble Gas Effluent Monitor (R-27)	S	R#	N.A.	
39.	Main Steam Line Radiation Monitor (R-28, R-29, R-30, R-31)	S	R#	N.A.	
40.	High Range Containment Radiation Monitor (R-25, R-26)	S	R#*7	N.A.	
41.	Containment Hydrogen Monitor	Q	Q*8	N.A.	

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
42.	Manual Reactor Trip	N.A.	N.A.	R#	Includes: 1) Independent verification of reactor trip and bypass breakers undervoltage trip circuit operability up to and including matrix contacts of RT-11/RT-12 from both manual trip initiating devices, 2) independent verification of reactor trip and bypass breaker shunt trip circuit operability through trip actuating devices from both manual trip initiating devices.
43.	Reactor Trip Breaker	N.A.	N.A.	M[*9]	Includes independent verification of undervoltage and shunt trip attachment operability.
44.	Reactor Trip Bypass Breaker	N.A.	N.A.	M[*9]	Includes: 1) Automatic undervoltage trip, 2) Manual shunt trip from either the logic test panel or locally at the switchgear prior to placing breaker into service.
45.	Service Water Inlet Temperature Monitoring Instrumentation	S	R#	A	The test shall take place prior to T.S. 3.3.F.b Applicability.

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

Footnotes:

*1 By means of the movable incore detector system.

*2 Prior to each reactor startup if not done previous week.

*3 Monthly visual inspection of condensate weirs only.

*4 Within 31 days prior to entering a condition in which the Control Rod Protection System is required to be operable unless the reactor trip breakers are manually opened during RCS cooldown prior to T_{cold} decreasing below 350°F and the breakers are maintained opened during RCS cooldown when T_{cold} is less than 350°F.

*5 Except when block valve operator is deenergized.

*6 Within 31 days prior to entering a condition in which OPS is required to be operable and at monthly intervals thereafter when OPS is required to be operable.

*7 Acceptable criteria for calibration are provided in Table II.F-13 of NUREG-0737.

*8 Calibration will be performed using calibration span gas.

*9 Each train shall be tested at least every 62 days on a staggered test basis (i.e., one train per month).

4.5 ENGINEERED SAFETY FEATURES

Applicability

Applies to testing of the Safety Injection System, the Containment Spray System, the Hydrogen Recombiner System, and the Air Filtration System.

Objective

To verify that the subject systems will respond promptly and perform their design functions, if required.

Specifications

A. SYSTEM TESTS

1. Safety Injection System

   a. System tests shall be performed at each reactor Refueling Interval (#). With the Reactor Coolant System pressure less than or equal to 350 psig and temperature less than or equal to 350°F, a test safety injection signal will be applied to initiate operation of the system. The safety injection pumps are made inoperable for this test.

   b. The test will be considered satisfactory if control board indication and visual observations indicate that all components have received the safety injection signal in the proper sequence and timing; that is, the appropriate pump breakers shall have opened and closed, and the appropriate valves shall have completed their travel.

   c. Conduct a flow test of the high head safety injection system after any modification is made to either its piping and/or valve arrangement.

d. Verify that the mechanical stops on Valves 856 A, C, D and E are set at the position measured and recorded during the most recent ECCS operational flow test or flow tests performed in accordance with (c) above. This surveillance procedure shall be performed following any maintenance on these valves or their associated motor operators and at a convenient outage if the position of the mechanical stops has not been verified in the preceding three months.

B. CONTAINMENT SPRAY SYSTEM

1. System tests shall be performed at each reactor Refueling Interval (#). The tests shall be performed with the isolation valves in the spray supply lines at the containment and the spray additive tank isolation valves blocked closed. Operation of the system is initiated by tripping the normal actuation instrumentation.

2. The spray nozzles shall be tested for proper functioning at least every five years.

3. The test will be considered satisfactory if visual observations indicate all components have operated satisfactorily.

C. HYDROGEN RECOMBINER SYSTEM

1. A complete recombiner system test shall be performed at each Refueling Interval (#) on each unit. The test shall include verification of ignition and attainment of normal operating temperature.

2. A complete control system test shall be performed at intervals not greater than six months on each unit. The test shall consist of a complete dry run startup using artificially generated signals to simulate light off.

3. The above tests will be considered satisfactory if visual observations and control panel indication indicate that all components have operated satisfactorily.

4. Each recombiner air-supply blower shall be started at least at two-month intervals. Acceptable levels of performance shall be that the blowers start, deliver flow, and operate for at least 15 minutes.

D. CONTAINMENT AIR FILTRATION SYSTEM

Each air filtration unit specified in Specification 3.3.B shall be demonstrated to be operable:

1. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the unit operates for at least 15 minutes.

2. At least once every Refueling Interval (#), or (1) after any structural maintenance on the HEPA filters or charcoal adsorber housings, or (2) at any time painting, fire or chemical releases could alter filter integrity by:

   a. verifying a system flow rate at ambient conditions of 65,600 cfm ±10% during filtration unit operation when tested in accordance with ANSI N510-1975. Verify that the flow rate through the charcoal adsorbers is ≥ 8,000 cfm.

   b. verifying that the HEPA filters and/or charcoal adsorbers satisfy the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a and C.5.c of Regulatory Guide 1.52, Revision 2, March 1978, at ambient conditions and at a flow rate of 65,600 cfm ±10% for the HEPA filters.

   c. verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a (except for Position C.6.a(1)) of Regulatory Guide 1.52, Revision 2, March 1978.

3. After every 720 hours of charcoal adsorber operation, by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of

Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a (except for Position C.6.a(1)) of Regulatory Guide 1.52, Revision 2, March 1978.

4. At least once every Refueling Interval (#) by:

   a. Verifying that the pressure drop across the moisture separator and HEPA filters is less than 6 inches Water Gauge while operating the filtration unit at ambient conditions and at a flow rate of 65,600 cfm ±10%.

   b. Verifying that the unit starts automatically on a Safety Injection Test Signal.

5. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the unit at ambient conditions and at a flow rate of 65,600 cfm ±10%.

6. After each complete or partial replacement of a charcoal adsorber bank, verify that the flow rate through the charcoal adsorbers is ≥ 8,000 cfm when the system is operating at ambient conditions and a flow rate of 65,600 cfm ±10% when tested in accordance with ANSI N510-1975.

E. <u>CONTROL ROOM AIR FILTRATION SYSTEM</u>

The control room air filtration system specified in Specification 3.3.H shall be demonstrated to be operable:

1. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

2. At least once every Refueling Interval(#) or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) at any time painting, fire or chemical releases could alter filter integrity by:

a. verifying a system flow rate, at ambient conditions, of 1840 cfm ±10% during system operation when tested in accordance with ANSI N510-1975.

b. verifying that, with the system operating at ambient conditions and at a flow rate of 1840 CFM ±10% and exhausting through the HEPA filters and charcoal adsorbers, the total bypass flow of the system to the facility vent, including leakage through the system diverting valves, is less than or equal to 1% when the system is tested by admitting cold DOP at the system intake.

c. verifying that the system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, at ambient conditions and at a flow rate of 1840 cfm ±10%.

d. verifying, within 31 days after removal, that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

3. After every 720 hours of charcoal adsorber operation, by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1973, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

4. At least once every Refueling Interval (#) by: |

a. verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches water gauge while operating the system at ambient conditions and at a flow rate of 1840 cfm ±10%.

b. verifying that, on a Safety Injection Test Signal or a high radiation signal in the control room, the system automatically switches into a recirculation mode of operation with flow through the HEPA filters and charcoal adsorber banks.[1]

c. verifying that the system maintains the control room at a neutral or positive pressure relative to the outside atmosphere during system operation.

5. After each complete or partial replacement of an HEPA filter bank, by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 1840 cfm ±10%.

6. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 1840 cfm ±10%.

7. Each toxic gas detection system shall be demonstrated operable by performance of a channel check at least once per day, a channel test at least once per 31 days and a channel calibration at least once each Refueling Interval(#).

F. FUEL STORAGE BUILDING AIR FILTRATION SYSTEM

The fuel storage building air filtration system specified in Specification 3.8 shall be demonstrated operable:

1. At least once per 31 days by initiating, from the control room, flow through the HEPA filters and charcoal adsorbers and verifying that the system operates for at least 15 minutes.

2. At each refueling, prior to refueling operations, or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) at any time painting, fire or chemical releases could alter filter integrity by:

---

1. In this instance Refueling Interval is defined by R#.

a. verifying a system flow rate at ambient conditions of 20,000 cfm ±10% during system operation when tested in accordance with ANSI N510-1975.

b. verifying that the system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, at ambient conditions and at a flow rate of 20,000 cfm ±10%.

c. verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

3. Prior to handling spent fuel which has decayed for less than 35 days, verify within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978. Such an analysis is good for 720 hours of charcoal adsorber operation. After 720 hours of operation, if spent fuel with a decay time of less than 35 days is still being handled, a new sample is required along with a new analysis.

4. At each refueling prior to refueling operations by:

a. verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches water gauge while operating the system at ambient conditions and at a flow rate of 20,000 cfm ±10%.

b. verifying that the system maintains the spent fuel storage pool area at a pressure less than that of the outside atmosphere during system operation.

5. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter banks remove greater than or equal to 99% of

the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 20,000 cfm ±10%.

6. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 20,000 cfm ±10%.

G. POST-ACCIDENT CONTAINMENT VENTING SYSTEM

The post-accident containment venting system shall be demonstrated operable:

1. At least once every Refueling Interval(#), or (1) after any structural maintenance on the HEPA filter or charcoal adsorber housings, or (2) at any time painting, fire or chemical releases could alter filter integrity by:

   a. verifying no flow blockage by passing flow through the filter system.

   b. verifying that the system satisfies the in-place testing acceptance criteria and uses the test procedures of Regulatory Positions C.5.a, C.5.c and C.5.d of Regulatory Guide 1.52, Revision 2, March 1978, at ambient conditions and at a flow rate of 200 cfm ±10%.

   c. at Refueling Intervals(#), verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

2. After every 720 hours of charcoal adsorber operation, by verifying within 31 days after removal that a laboratory analysis of a representative carbon sample obtained in accordance with Regulatory Position C.6.b of Regulatory Guide 1.52, Revision 2, March 1978, meets the laboratory testing criteria of Regulatory Position C.6.a of Regulatory Guide 1.52, Revision 2, March 1978.

3. At least once every Refueling Interval(#) by:

   a. verifying that the pressure drop across the combined HEPA filters and charcoal adsorber banks is less than 6 inches water gauge while operating the system at ambient conditions and at a flow rate of 200 cfm ±10%.

   b. verifying that the system valves can be manually opened.

4. After each complete or partial replacement of a HEPA filter bank, by verifying that the HEPA filter banks remove greater than or equal to 99% of the DOP when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 200 cfm ±10%.

5. After each complete or partial replacement of a charcoal adsorber bank, by verifying that the charcoal adsorbers remove greater than or equal to 99.95% of a halogenated hydrocarbon refrigerant test gas when they are tested in-place in accordance with ANSI N510-1975 while operating the system at ambient conditions and at a flow rate of 200 cfm ±10%.

Basis

The Safety Injection System and the Containment Spray System are principal plant safeguards that are normally inoperative during reactor operation. Complete systems tests cannot be performed when the reactor is operating because a safety injection signal causes reactor trip, main feedwater isolation and containment isolation, and a Containment Spray System test requires the system to be temporarily disabled. The method of assuring operability of these systems is, therefore, to combine systems tests to be performed during plant refueling shutdowns, with more frequent component tests, which can be performed during reactor operation.

The refueling systems tests demonstrate proper automatic operation of the Safety Injection and Containment Spray Systems. With the pumps blocked from starting, a test signal is applied to initiate automatic action and verification made that the components receive the safety injection signal in the proper sequence. The test demonstrates the operation of the valves, pump circuit breakers, and automatic circuitry[(1)].

During reactor operation, the instrumentation which is depended on to initiate safety injection and containment spray is generally checked daily and the initiating circuits are tested monthly (in accordance with Specification 4.1). The testing of the analog channel input is accomplished in the same manner as for the reactor protection system. The engineered safety features logic system is tested by means of test switches to simulate inputs from the analog channels. The test switches interrupt the logic matrix output to the master relay to prevent actuation. Verification that the logic is accomplished is indicated by the matrix test light. Upon completion of the logic checks, verification that the circuit from the logic matrices to the master relay is complete is accomplished by use of an ohm-meter to check continuity.

Other systems that are also important to the emergency cooling function are the accumulators, the Component Cooling System, the Service Water System and the containment fan coolers. The accumulators are a passive safeguard. In accordance with Specification 4.1, the water volume and pressure in the accumulators are checked periodically. The other systems mentioned operate when the reactor is in operation and, by these means, are continuously monitored for satisfactory performance.

For the four flow distribution valves (856 A, C, D and E), verification of the valve mechanical stop adjustments is performed periodically to provide assurance that the high head safety injection flow distribution is in accordance with flow values assumed in the core cooling analysis.

The hydrogen recombiner system is an engineered safety feature which would be used only following a loss-of-coolant accident to control the hydrogen evolved in the containment. The system is not expected to be started until approximately 13 days have elapsed following the accident. At this time the hydrogen concentration in the containment will have reached 2% by volume, which is the design concentration for starting the recombiner system. Actual starting of the system will be based upon containment atmosphere sample analysis. The complete functional tests of each unit at refueling shutdown will demonstrate the proper operation of the recombiner system. More frequent tests of the recombiner control system and air-supply blowers will assure operability of the system. The biannual testing of the containment atmosphere sampling system will demonstrate the availability of this system.

The charcoal portion of the in-containment air recirculation system is a passive safeguard which is isolated from the cooling air flow during normal reactor operation. Hence the charcoal should have a long useful lifetime. The filter frames that house the charcoal are stainless steel and should also last indefinitely. However, the required periodic visual inspections will verify that this is the case. The iodine removal efficiency cannot be measured with the filter cells in place. Therefore, at periodic intervals a representative sample of charcoal is to be removed and tested to verify that the efficiency for removal of methyl iodide is obtained[2]. Such laboratory charcoal sample testing together with the specified in-place testing of the HEPA filters will provide further assurance that the criteria of 10 CFR 100 continue to be met.

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 air filtration system is designed to automatically start upon control room isolation. High-efficiency particulate absolute (HEPA) filters are installed upstream of the charcoal adsorbers to prevent clogging of these adsorbers. The charcoal adsorbers are installed to reduce the potential intake of radioiodine by control room personnel. The required in-place testing and the laboratory charcoal sample testing of the HEPA filters and charcoal adsorbers will provide assurance that Criterion 19 of the General Design Criteria for Nuclear Power Plants, Appendix A to 10 CFR Part 50 continues to be met.

The fuel storage building air filtration system is designed to filter the discharge of the fuel storage building atmosphere to the plant vent. This air filtration system is designed to start automatically upon a high radiation signal. Upon initiation, isolation dampers in the ventilation system are designed to close to redirect air flow through the air treatment system. HEPA filters and charcoal adsorbers are installed to reduce potential releases of radioactive material to the atmosphere. Nevertheless, as required by Specification 3.8.B.6, the fuel storage building air filtration system must be operating whenever spent fuel is being moved unless the spent fuel has had a continuous 35-day decay period. The required in-place testing and the laboratory charcoal sample testing of the HEPA filters and charcoal adsorbers will provide added assurance that the criteria of 10 CFR 100 continue to be met.

The post-accident containment venting system may be used in lieu of hydrogen recombiners for removal of combustible hydrogen from the containment building atmosphere following a design basis accident. As was the case for hydrogen recombiner use, this system is not expected to be needed until approximately 13 days have elapsed following the accident. Use of the system will be based upon containment atmosphere sample analysis and availability of the hydrogen recombiners. When in use, HEPA filters and charcoal adsorbers will filter the containment atmosphere discharge prior to release to the plant vent. The required in-place testing and laboratory charcoal sample testing will verify operability of this venting system and provide further assurance that releases to the environment will be minimized.

As indicated for all four of the previously mentioned engineered safety feature (ESF) air filtration systems, high-efficiency particulate absolute (HEPA) filters are installed upstream of the charcoal adsorbers to prevent clogging of these adsorbers. The charcoal adsorbers are installed to reduce the potential release of radioiodine to the environment. The laboratory charcoal sample testing periodically verifies that the charcoal meets the iodine removal efficiency requirements of Regulatory Guide 1.52, Revision 2. Should the charcoal of any of these filtration systems fail to satisfy the specified test acceptance criteria, the charcoal will be replaced with new charcoal which satisfies the requirements for new charcoal outlined in Regulatory Guide 1.52, Revision 2.

References

(1) UFSAR Section 6.2
(2) UFSAR Section 6.4

Tab[illegible]0-2

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	D*	P	R$^{(3)}$#	Q$^{(1)}$
b. Steam Generator Blowdown Effluent Line	D*	M	R$^{(3)}$#	Q$^{(1)}$
2. GROSS BETA OR GAMMA RADIOACTIVITY MONITORS PROVIDING ALARM BUT NOT PROVIDING AUTOMATIC TERMINATION OF RELEASE				
a. Service Water System Effluent Line	D*	M	R$^{(3)}$#	Q$^{(2)}$
b. Unit 1 Secondary Boiler Blowdown Effluent Line	D*	M	R$^{(3)}$#	Q$^{(2)}$
3. FLOW RATE MEASUREMENTS DEVICES				
a. Liquid Radwaste Effluent Line	D$^{(4)}$	N.A.	R#	Q
b. Steam Generator Blowdown Effluent Line	D$^{(4)}$	N.A.	R#	Q
4. TANK LEVEL INDICATING DEVICES***				
a. 13 Waste Distillate Storage Tank	D**	N.A.	R#	Q
b. 14 Waste Distillate Storage Tank	D**	N.A.	R#	Q
c. Primary Water Storage Tank	D**	N.A.	R#	Q
d. Refueling Water Storage Tank	D**	N.A.	Q	Q

Radioactive Liquid Effluent Monitoring Instrumentation Surveillance Requirements

Table Notation

---

* During releases via this pathway

** 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 overflow and surrounding area drains connected to the liquid radwaste treatment system.

(1) The channel functional test shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occur if the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint.

(2) The channel functional test shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:

1. Instrument indicates measured levels above the alarm setpoint.
2. Instrument controls not set in operate mode.

(3) Radioactive calibration standards used for channel calibrations shall be analyzed with instrumentation which is calibrated with NBS traceable standards. (Standards from suppliers who participate in measurement assurance activities with NBS are acceptable.)

(4) Channel check shall consist of verifying indication of flow during periods of release. Channel check shall be made at least once per 24 hours on days on which continuous, periodic, or batch releases are made.

Table 4.10-4

Radioactive Gaseous Effluent Monitoring Instrumentation Surveillance Requirements

Instrument		Channel Check	Source Check	Channel Calibration	Channel Functional Test	Modes In Which Surveillance Required
1.	WASTE GAS HOLDUP SYSTEM					
a.	Noble Gas Activity Providing Alarm	D	M	R(3)#	Q(2)	*
2.	WASTE GAS HOLDUP SYSTEM EXPLOSIVE GAS MONITORING SYSTEM					
a.	Hydrogen Monitor	D	N.A.	Q(4)	M	**
b.	Hydrogen or Oxygen Monitor	D	N.A.	Q(5)	M	**
3.	CONDENSER EVACUATION SYSTEM					
a.	Noble Gas Activity	D	M	R(3)#	Q(2)	*
4.	PLANT VENT					
a.	Noble Gas Activity Monitor	D	M	R(3)#	Q(2)	*
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#	N.A.	*
e.	Sampler Flow Rate Monitor	D	N.A.	R#	N.A.	*
5.	STACK VENT					
a.	Noble Gas Activity Monitor	D	P	R(3)#	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#	N.A.	*
e.	Sampler Flow Rate Monitor	D	N.A.	R#	N.A.	*

Radioactive Gaseous Effluent Monitoring Instrumentation Surveillance Requirements

Table Notation

* Surveillance is required at all times except when monitor has been removed from service in accordance with Table 3.9-2.

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

(1) The channel functional test shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if the following conditions exist:

1. Instrument indicates measured levels above the alarm/trip setpoint

(2) The channel functional test shall also demonstrate that control room alarm annunciation occurs if any ofthe following conditions exist:

1. Instrument indicates measured levels above the alarm setpoint.
2. Instrument controls not set in operate mode.

(3) 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 who participate in measurement assurance activities with NBS are acceptable).

(4) 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.

(5) The channel calibration shall include the use of standard gas samples containing:

1. less than or equal to two volume percent oxygen, and
2. greater than or equal to two volume percent oxygen.

4.14 FIRE PROTECTION AND DETECTION SYSTEMS

This is a provisional issuance of this Technical Specification pending the implementation of Amendment 186 which deleted this Technical Specification. Upon implementation of Amendment 186 this Technical Specification may be deleted.

Applicability

This specification applies to the surveillance requirements of fire protection and detection systems provided for protection of safe shutdown systems.

Objective

To verify the operability of fire protection and detection systems.

Specifications

A. HIGH-PRESSURE WATER FIRE PROTECTION SYSTEM TESTING

1. Testing Requirements

Item		Frequency
a.	City Water Tank and Fire Water Tank Minimum Water Volume	once/week
b.	Diesel-Pump Starting Battery Bank Operability Verify that the electrolyte level of each battery is above the plates, and the overall battery bank voltage is $\geq$ 24 volts.	once/week
c.	Main Fire Pump Operability Each pump operating for at least 15 minutes.	once/month

d.	<u>Diesel Engine Operability</u> The diesel starts and operates for at least 30 minutes.	once/month
e.	<u>Diesel Fire Pump Fuel Supply</u> Verify that the diesel-driven fire pump fuel storage tank contains at least 50 gallons of fuel.	once/month
f.	<u>Valve Position Check</u> Verification that each valve (manual, power-operated or automatic) in the flow path necessary for proper functioning of any portion of this system required for protection of safe shutdown systems is in its correct position. If the valve has an installed monitoring system, the valve position can be checked via that monitoring system.	once/month
g.	<u>Valve Cycling Test</u> Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
	(i) Valves testable with plant on-line.	once/12 months
	(ii) Valves not testable with plant on-line.	R#
h.	<u>System Functional Test</u> Verification of proper automatic actuation of this system throughout its operating sequence.	R#

i. Main Fire Pump Capacity and System Flow Checks — R#

The motor-driven pumps shall be verified to have a capacity of at least 1500 gpm each at a net pressure of $\geq$ 93 psig. The diesel-driven pump shall be verified to have a capacity of at least 2500 gpm with a discharge pressure of $\geq$ 109 psig.

j. Diesel Engine Inspection — R#

Subject the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for the class of service.

k. Diesel Engine Functional Test — R#

Verification that the diesel starts on the auto-start signal and operates for at least 30 minutes while loaded with the fire pump.

l. Diesel Engine Battery Inspection — R#

Verification that the batteries and battery racks show no visual indication of physical damage or deterioration, and that the battery-to-battery terminal connections are clean, tight, free of corrosion and coated with anti-corrosion material.

m.	<u>System Flow Test</u> Performance of a flow test in accordance with Chapter 5, Section 11 of the <u>Fire Protection Handbook</u>, 14th Edition, published by the National Fire Protection Association for any portion of this system required for protection of safe shutdown systems.	once/3 years

B. ELECTRICAL TUNNEL, DIESEL GENERATOR BUILDING AND CONTAINMENT FAN COOLER FIRE PROTECTION SPRAY SYSTEMS TESTING

1. Testing Requirements:

	Items	Frequency
a.	<u>Valve Cycling Test</u> Exercise each valve necessary for proper functioning of any portion of this system required for protection of safe shutdown systems through at least one complete cycle:	
	(i) Valves testable with plant on-line.	once/12 months
	(ii) Valves not testable with plant on-line.	R#
b.	<u>System Functional Test</u> Includes simulated automatic actuation of spray system and verification that automatic valves in the flow path actuate to their correct position.	R#
c.	<u>Spray Header Visual Inspection</u> To verify integrity.	R#

d. <u>Visual Inspection of Each Spray Nozzle</u> — R#

To verify no blockage.

e. <u>Air Flow Test</u> — once/3 years

Perform air flow test through each spray header and verify each spray nozzle is unobstructed.

2. The requirements of Specification 4.14.B.1 shall not apply to self-actuated type spray nozzles which are capable of only one actuation and cannot be periodically cycled or tested. These self-actuated spray nozzles shall be visually inspected at least once per Refueling Interval (#) to verify that no nozzle damage exists and that the nozzles are unobstructed.

C. PENETRATION FIRE BARRIER INSPECTIONS

1. The penetration fire barriers listed in Specification 3.13.C.1 shall be verified to be functional by visual inspection:

   a. At least once per Refueling Interval(#).

   b. Prior to declaring a fire penetration barrier functional following repairs or maintenance.

D. FIRE DETECTION SYSTEMS TESTING

1. The operability of the fire detection instruments utilized in satisfying the requirements of Specification 3.13.D.1, including the actuation of appropriate alarms (Channel Functional Test), shall be verified as follows:

	Item	Frequency
a.	Smoke Detectors	
(i)	Those testable during plant operation (i.e., all except items 11 and 22 in Table 3.13-1).	once/6 months
(ii)	Those not testable during plant operation (item 11 and 22 in Table 3.13-1)	R# R#
b.	Heat Detectors	
(i)	Those associated with the Diesel Generator Building (item 7 in Table 3.13-1)	once/6 months
(ii)	Those associated with the Electrical Tunnel (item 4 in Table 3.13-1).	once/12 months
(iii)	Those associated with the Containment Fan Cooler Units (item 10 in Table 3.13-1).	R#

E. FIRE HOSE STATION AND HYDRANT TESTING

1. Fire hose stations and hydrants described in Specification 3.13.E.1 shall be demonstrated operable by the following surveillance testing requirements:

	Item	Frequency
a.	Visual Inspection Test Visual inspection of the hose stations and hose houses to assure all required equipment is at the station or hose house.	once/month
b.	Hydrant Inspection	
	1. Visually inspect each hydrant barrel to verify it is drained.	once/year (in the fall)
	2. Flow test each hydrant to demonstrate hydrant and hydrant valve operability.	once/year (in the spring)
c.	Hose Removal Check Removal of the hose for inspection and re- placement of all degraded gaskets in couplings.	R# for interior fire hose; once/year for outside fire hose.
d.	Hose Flow Test Partial opening of each hose station valve to verify valve operability and no flow blockage.	once/3 years
e.	Hose Hydrostatic Test Conduct a hose hydro- static test at a pressure at least 50 psig greater than the maximum pressure available at any hose station.	once/3 years for interior fire hose; once/year for outside fire hose.

F. CABLE SPREADING ROOM HALON SYSTEM

1. The Cable Spreading Room Halon System required operable by Specification 3.13.F.1 shall be demonstrated operable by the following surveillance requirements:

	Item	Frequency
a.	Halon Storage Tanks Verification of charge weight and pressure.	once/6 months
b.	System Functional Test Verification that the system, including ventilation dampers and fans, actuates properly upon receipt of a manual simulated test signal.	R
c.	Air Flow Test Performance of an air flow test through headers and nozzles to verify no blockage.	R

Basis

These specifications establish the surveillance program for fire protection and detection systems provided to protect equipment utilized for safe shutdown of the unit. This surveillance program is intended to verify the operability of these systems and will identify for corrective action any conditions which could prevent any portion of those systems from performing its intended function.

The fire protection and detection systems are described in Revision 1 to "Review of the Indian Point Station Fire Protection Program" submitted to the NRC by letter dated April 15, 1977 and also in the Fire Protection Safety Evaluation Report issued by the NRC Regulatory Staff in conjunction with Amendment No. 46 to DPR-26 on January 31, 1979.

accomplished in the preceding 9 months, and prior to returning the valve to service after maintenance, repair or replacement work is performed.

B. A test shall be performed, whenever the RCS pressure decreases to 700 psig (i.e. within 100 psig of the RHR design pressure) or whenever the RHR is secured to go to hot shutdown, to check for leakage through SIS low head injection line check valves 897A-D and RHR check valves 838A-D.

C. The containment sump pumps required to be operable by Specification 3.1.F.1.a(1) shall be demonstrated to be operable by performance of the following surveillance program:

1. At monthly intervals, each sump pump shall be started and a discharge flow of at least 25 gpm verified.

2. At Refueling Intervals(#), each sump pump shall be operated under visual observation to verify that the pumps start and stop at the appropriate setpoints and that the discharge flow is at least 25 gpm per pump.

Basis

Specifications 4.16.A and 4.16.C establish the surveillance program for monitoring reactor coolant system leakage and leakage into the containment free volume during plant operation and ensure compliance with Specification 3.1.F. These specifications also establish surveillance requirements for the containment sump pumps. Surveillance requirements for the various leakage detection instrumentation systems are contained in Table 4.1-1 of these specifications.

Specification 4.16.B was added to the Technical Specifications in response to NRC's July 5, 1985 rescission of our February 11, 1980 Confirmatory Order Item A.5. Item A.5 was developed to address the intersystem loss-of-coolant accident (Event V) identified in WASH-1400[1,2]. The RHR system design pressure is 600 psig.

References

(1) NRC letters to Con Edison dated July 5, 1985, and February 11, 1980
(2) Con Edison letter to NRC dated March 14, 1980

ATTACHMENT B

SAFETY ASSESSMENT

ELECTRICAL TUNNEL, DIESEL GENERATOR BUILDNG, AND CONTAINMENT FAN COOLER FIRE PROTECTION SPRAY SYSTEMS

(A) SYSTEM FUNCTIONAL TEST

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
AUGUST, 1996

DESCRIPTION OF CHANGE

Technical Specification 4.14.B.1.b requires a simulated automatic actuation of the spray system and verification that automatic valves actuate for the Electrical Tunnel, Diesel Generator Building and Containment Fan Cooler Fire Protection Systems. Currently, this test is performed every 18 months (+25%). It is proposed that this test frequency be revised to every 24 months (+25%) . The proposed change is being made in accordance with the guidance in Generic Letter 91-04.

As stated above, this Technical Specification provision covers more than one system. Only one system is inaccessible during normal plant operation, the Fan Cooler Fire Protection System, and the Technical Specification exists to ensure that this system is surveilled during refueling when the Fan Cooler Fire Protection System is accessible. With respect to the Electrical Tunnel and Diesel Generator Building Fire Protection Systems, which are accessible during normal plant operation, other Technical Specifications (4.14.A.l.g.(i) and 4.14.B.l.a.(i)) require that the same surveillance be performed on an annual (12 month) basis.

Test data from 1986 through 1993 was reviewed which encompasses five refueling outages. Only minor observations were noted in one instance during 1989. These observations were not repeated in future surveillance.

The Containment Fan Cooler Fire Protection System is a static system which is normally not required to operate. The tests and inspections verify system integrity and continued operability in the unlikely event that it is needed. The minor observations noted in past surveillance would have had negligible effect on actual operation of the system if it had been required to operate. Under these circumstances, for a static system with proven reliability, increasing the time interval between surveillance would have negligible impact upon operability of the system.

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.

    (a) It is proposed that the functional test surveillance interval for the Electrical Tunnel, Diesel Generator Building and Containment Fan Cooler Fire Protection Spray Systems be changed from every 18 months (+25%) to every 24 months (+25%).

    Extension of the surveillance interval for the Electrical Tunnel and Diesel Generator Building Fire Protection System functional tests will have virtually no impact upon the operability of these systems. These systems are accessible during normal operation and other sections of the Technical Specifications (4.14.A.l.g.(i) and 4.14.B.l.a(i)) require that the system valve tests be conducted on an annual (12 month) basis. These annual tests would reveal any system deterioration prior to the conclusion of the proposed extended surveillance interval.

For the Fan Cooler Fire Protection System, evaluation of surveillance data from the past five refueling outages indicates minor discrepancies which would not have impaired system operability.

It is therefore concluded that extension of the proposed surveillance interval will not involve a significant increase in the probability or consequences of an accident previously evaluated.

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

For the Electrical Tunnel and Diesel Generator Building, extension of the surveillance interval will have a negligible affect as other portions of the Technical Specifications require the same surveillance on an annual basis. For the Fan Cooler Fire Protection System, historical surveillance data validates operability over an 18 month (+25%) interval which lends confidence to conclude that operability will be maintained over a 24 month (+25%) interval. It is therefore concluded that the possibility of a new or different kind of accident from any accident previously evaluated has not been introduced.

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

Extension of the surveillance for two systems will have minimal impact as the Technical Specifications impose more frequent testing for system valves on an annual basis. For the Fan Cooler Fire Protection System, as well as the fire protection system for the Diesel Generator Building and Electrical Tunnel, it can be stated that these systems are static, existing mainly in a standby capacity under which little deterioration would be expected. Past surveillance data validates system reliability. It is therefore concluded that increasing the time interval between inspections would not involve a significant reduction in the margin of safety.

Table 1

Major Plant Parameter Assumptions Used In the BE LOCA Analysis For IP2 And Where They are Documented

PARAMETER	DOCUMENTATION
Plant Physical Description	UFSAR Sections 3.2, 4.2, 6.2
Plant Initial Operating Conditions	
Reactor Power	UFSAR Section 14.3.3.2
Peaking Factors	UFSAR Section 14.3.3.2
Axial Power Distribution	UFSAR Section 14.3.3.2
Maximum Lead Fuel Rod Burnup	UFSAR Section 3.2.1
Fluids Conditions	
T_{avg}	TECHNICAL SPECIFICATION 2.3.1
Pressurizer Pressure	UFSAR Section 14.3.3.2
Reactor Coolant Flow	UFSAR Section 3.2.2
Pressurizer Level	UFSAR Section 14.3.3.2
Accumulator Temperature	UFSAR Section 14.3.3.2
Accumulator Pressure	PROPOSED TECHNICAL SPECIFICATION 3.3.A.1.C
Accumulator Volume	PROPOSED TECHNICAL SPECIFICATION 3.3.A.1.C
Accident Boundary Conditions	
Single Failure Assumptions	UFSAR Section 7.2.1.10, UFSAR Section 14.3.3.2
Safety Injection Flow	UFSAR Section 14.3.3.2
Safety Injection Temperature	UFSAR Section 14.3.3.2
Diesel Generator Delay Time	UFSAR Section 14.3.3.2
Containment Pressure	UFSAR Section 14.3.3.2
Containment Temperature	UFSAR Table 14.3-2
Transient Results	
Peak Clad Temperature versus Time For Base Case	UFSAR Section 14.3.3.3
Sequence of Events For Base Case	UFSAR Table 14.3-4

Table 2

BEST ESTIMATE LARGE BREAK LOCA RESULTS

	Value	Criteria
50th Percentile PCT (°F)	1850	Not Applicable
95th Percentile PCT (°F)	<2150	2200
Maximum Cladding Oxidation (%)	<10	17
Maximum Hydrogen Generation (%)	<0.25	1
Coolable Geometry	Core Remains Coolable	Core Remains Coolable
Long Term Cooling	Core Remains Cool in Long Term	Core Remains Cool In Long Term