ATTACHMENT A

Technical Specification
Page Revisions

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
August, 1985

3.17 Alternate Safe Shutdown System

Applicability

This specification applies to the operability of the alternate safe shutdown system instrumentation and power distribution and control.

Objective

To assure the operability of the alternate safe shutdown system components.

Specification

1. Except as modified by 3.17.2 below, the reactor coolant system shall not be brought above HOT SHUTDOWN unless the alternate safe shutdown instrumentation, power distribution and control components shown in Tables 3.17-1 and 3.17-2 are OPERABLE.

2. The requirements of 3.17.1 may be modified as follows:

   a. With the number of OPERABLE instruments less than required by Table 3.17-1, either install another instrument or restore the inoperable channel(s) to OPERABLE status within 60 days, or the reactor coolant system shall be placed below 350°F within the next 36 hours.

   b. With one or more of the required power distribution and control components shown on Table 3.17-2 inoperable, either provide a standby connection or restore the inoperable component(s) to OPERABLE status within 60 days, or the reactor coolant system shall be placed below 350°F within the next 36 hours.

Basis

The Indian Point Unit 2 design employs an Alternate Safe Shutdown System (ASSS) that ensures the following safety functions are satisfied; reactor subcriticality, core cooling, reactor coolant system integrity, secondary side heat sink and reactor coolant system inventory.

In the unlikely event of a major fire or other external event affecting redundant cabling or equipment in certain plant areas, electrical power could be disrupted to safe shutdown components and systems. However, following the unlikely loss of normal and preferred alternate power, additional independent and separate power supplies from the Indian Point Unit 1 440-V switchgear are provided for a number of Unit 2 safe shutdown components. Independent power supplies from Indian Point Unit 1 auxiliaries are hardwired to manually operated transfer switches to power a component cooling pump, an auxiliary feedwater pump, two service water pumps, a charging pump, and through the use of standby feeder cables to connect MCC 27, a residual heat removal pump or a safety injection pump.

The ASSS includes the following instrumentation which is either pneumatic, mechanical or powered from the IP-1 power sources:

- RCS Hot Leg temperature
- RCS Cold Leg temperature
- Source range flux
- Pressurizer pressure
- Pressurizer level
- Steam generator pressure
- Steam generator level
- Condensate storage tank level
- Refueling water storage tank level
- Auxiliary feedwater pump suction and discharge pressure
- Service water pressure at the intake to the component cooling water heat exchangers
- Flow indicators for component cooling water flow to the charging pumps and RHR pumps.

Control of the ASSS components is by local manual operation of transfer switches, circuit breakers, pneumatic supplies, motor and air operated valves and hand held radio communications. Once an ASSS pump is placed into service its flow path, which is normally in the proper alignment, is verified and any re-alignment due to fire induced maloperation is done manually. ASSS instrumentation, some of which requires manual alignment of pneumatic supplies, is then observed to assure that the desired plant condition is being achieved during the controlled shutdown. Local manual operation of existing IP-2 components, and IP-1 power supplies comprising the ASSS relies on the use of procedures and actions at remote shutdown panels or locally at the equipment. Local gauges will require only calibration at 24 month intervals.

References:

FSAR-Section 8.3

FSAR-Section 9.6.2.4

NRC Generic Letter 81-12 dated February 20, 1981

Indian Point Probabilistic Safety Study - Section 7.3

Letter from J. D. O'Toole, Con Edison, to D. G. Eisenhut, NRC, Subject: Indian Point Unit 2; Alternate Shutdown System Modifications, Enclosure B, dated January 10, 1983.

Letter from J. D. O'Toole, Con Edison, to D. G. Eisenhut, NRC, Subject: Evaluation of the Indian Point Unit 2 Fire Protection Program, dated July 13, 1983.

Letter from S. A. Varga, NRC, to J. D. O'Toole, Con Edison, Subject: Safety Evaluation Report - Appendix R to 10 CFR 50, Items III.G and III.L - Indian Point Unit 2, dated August 22, 1983.

Letter from J. D. O'Toole, Con Edison, to D. G. Eisenhut, NRC, Subject: Additional Information Relative to Appendix R Exemption Requests, dated September 9, 1983.

Letter from S. A. Varga, NRC, to J. D. O'Toole, Con Edison, Subject: Supplemental Safety Evalution for Appendix R to 10 CFR 50, Items III.G and III.L, dated March 30, 1984.

Letter from D. G. Eisenhut, NRC, to J. D. O'Toole, Con Edison, Subject: Technical Exemption from the Requirements of 10 CFR 50, Appendix R, dated October 16, 1984.

Letter from J. D. O'Toole, Con Edison, to D. G. Eisenhut, NRC, Subject: Emergency Lighting for Appendix R, dated January 31, 1985.

Letter from J. D. O'Toole, Con Edison, to H. L. Thompson, NRC, Subject: Supporting Information on the Exemption from the Requirements of 10 CFR 50, Appendix R, dated February 20, 1985.

TABLE 3.17-1 (1 of 4)

Alternate Safe Shutdown System

A) INSTRUMENTATION	READOUT LOCATION	MINIMUM CHANNELS OPERABLE
1. Pressurizer		
a.i) Pressure (PI-3105-1)**	Fan House, 90', elev	1
OR		
ii) Pressure (PI-3105)	Containment, 78' elev.	1
AND		
b.i) Level (LI-3101-1)**	Fan House, 90' elev.	1
OR		
ii) Level (LI-3101)	Containment, 78' elev.	1
2. Source Range Flux (NI-5143)*	Fan House, 90' elev.	1
3. Refueling Water Storage Tank Level (LIC-921)	RWST	1
4. Condensate Storage Tank		
a. Level (LIC-1102A)	CST	1
OR		
b. Level (LIC-1102)	CST	1
5. Component Cooling Water flow to Charging Pumps (FI-637)	Charging Pump Space, Elev. 80' PAB	1
6. Steam Generators		
a.Steam Generator 21		
a.i) S/G 21 Pressure (PI-1353)	Aux. Feed Bldg., 15' elev.	1
and		
a.ii.1)S/G 21 Level (LI-5001-1)**	Fan House, 90' elev.	1
or		

TABLE 3.17-1 (2 of 4)

Alternate Safe Shutdown System

INSTRUMENTATION	READOUT LOCATION	MINIMUM CHANNELS OPERABLE
a.ii.2)Level (LI-5001)	Containment, 78' elev.	1
OR		
b. Steam Generator 22		
b.i) Pressure (PI-1354)	Aux. Feed. Bldg., 15' elev.	1
and		
b.ii.1)Level (LI-5002-1)**	Fan House, 90' elev.	1
or		
b.ii.2)Level (LI-5002)	Containment, 78' elev.	1
7. Component Cooling Water		
a) CCW flow to 21 Residual Heat Removal Pump (FIC-645)	RHR Pump 21 Cubicle, 15' elev. PAB	1
OR		
b) CCW flow to 22 Residual Heat Removal Pump (FIC-646)	RHR Pump 22 Cubicle 15' elev. PAB	1

Notes

* Normally deenergized, fed from breaker 2B on 12FD3.

** The containment isolation valves for these instruments are normally locked closed at Penetration Z in the Pipe Pen. Area.

TABLE 3.17-1 (3 of 4)

INSTRUMENTATION	READOUT LOCATION	MINIMUM CHANNELS OPERABLE
8. Auxiliary Feedwater		
a.i) AFW pump 21 suction pressure***	Aux. Feed Bldg., 15' elev.	1
and		
ii) AFW pump 21 discharge pressure***	Aux. Feed Bldg., 15' elev.	1
OR		
b.i) AFW pump 22 suction pressure***	Aux. Feed Bldg., 15' elev.	1
and		
ii) AFW pump 22 discharge pressure***	Aux. Feed Bldg., 15' elev.	1
9. Service Water		
a. SW pressure at CCW heat exchanger inlet (PI-1276)	PAB, 80' elev.	1
OR		
b. SW pressure at CCW heat exchanger inlet (PI-1277)	PAB, 80' elev.	1

Notes

*** Local mechanical gauge at pump suction and/or discharge.

TABLE 3.17-1 (4 of 4)

INSTRUMENTATION	READOUT LOCATION	MINIMUM CHANNELS OPERABLE
10. RCS Temperature		
a.i) Loop 21 hot leg (TI-5139)*	Fan House, 90' elev.	1
and		
ii) Loop 21 cold leg (TI-5140)*	Fan House, 90' elev.	1
OR		
b.i) Loop 22 hot leg (TI-5141)*	Fan House, 90' elev.	1
and		
ii) Loop 22 cold leg (TI-5142)*	Fan House, 90' elev.	1

Notes

* Normally deenergized, fed from breaker 2B on Switchgear 12FD3.

TABLE 3.17-2 (1 of 2)

	EQUIPMENT LOCATION
B) POWER DISTRIBUTION AND CONTROL	
1. Alternate A/C Power Supplies*	
a. Switchgear 12FD3 and the following associated circuit breakers:	Unit 1 Superheater Building, 33' elev.
i) Breaker 1B	
ii) Breaker 2B	
iii) Breaker 1T	
b. Switchgear 12RW3 and the following associated circuit breaker(s) and transfer switches:**	Unit 1 Screenwell House Roof
i) Breaker 1M	Unit 1 Screenwell House Roof
and	
Transfer Switch EDG3	IP-2 Intake Structure
OR	
ii) Breaker 3M	Unit 1 Screenwell House Roof
and	
Transfer Switch EDG4	IP-2 Intake Structure
c. Unit 1 125V DC battery control power for Switchgear 12FD 3 and 12RW 3 and its distribution system to ASSS switchgear.	Unit 1 Superheater Building, 33' elev.
2. Auxiliary Feedwater	
Transfer switch EDC5	Aux. Feed. Bldg. 15' elev.

Notes

* These A/C power supplies are normally deenergized. The offsite Unit 1 supplies are backed up by Gas Turbines whose operability is required by Technical Specification 3.7.C.

** This provides the service water function to the component cooling system. If the service water pump on the non-essential header is not operable, the pump on the essential header can be alinged to the non-essential header to perform an alternate safe shutdown.

TABLE 3.17-2 (2 of 2)

	EQUIPMENT LOCATION
B) POWER DISTRIBUTION AND CONTROL	
3. RCS Makeup	
a) Breaker 1M on Switchgear 12FD3	Unit 1 Superheater Building, 33' elev.
and	
Transfer switch EDC4,	PAB, 80' elev.
OR	
b) Splice Box EZH1*	PAB, 59' elev.
4. Component Cooling	
Transfer switch EDF9	PAB, 80' elev.
5. Residual Heat Removal	
a) Transfer switch EDC3**	PAB, 80' elev.
and	
b) Transfer switch EDG1**	PAB, 80' elev.
and	
c) Splice Box EZG4*	PAB, 15' elev.

Notes:

* The splice boxes are normally deenergized.
** These transfer switches can also supply alternative RCS makeup via 21 SI pump or supply MCC27.

4.21 Alternate Safe Shutdown System

Applicability

This specification applies to the testing of the alternate safe shutdown system instrumentation and power distribution and control.

Objective

To verify that the alternate safe shutdown system components will perform their intended design functions.

Specification

1. Each alternate safe shutdown instrument shown in Table 4.21-1 shall be demonstrated OPERABLE by performance of a Channel Check and Instrument Calibration at the specified frequencies.

2. Each power distribution and control component shown in Table 4.21-2 shall be demonstrated OPERABLE, at least once every 24 month interval, by operating the hardwired pumps and instruments from the associated alternate power distribution and control components.

3. The standby feeder cables, transfer switches and splice boxes shown in Table 4.21-3 shall be demonstrated OPERABLE at least once every 24 month interval, by performance of continuity and megger checks.

4. The portable exhaust blower located in the Fire Protection Cage on 34' elevation in the Turbine Hall shall be demonstrated OPERABLE at least once every 24 month interval, by operating the blower in the exhaust mode.

Table 4.21-1 (1 of 3)
Alternate Safe Shutdown System

	INSTRUMENTATION	CHANNEL CHECK	INSTRUMENT CALIBRATION
1.	Pressurizer		
	a.i) Pressure (PI-3105-1)**	Q	once/24 months
	ii) Pressure (PI-3105)	Q	once/24 months
	b.i) Level (LI-3101-1)**	Q	once/24 months
	ii) Level (LI-3101)	Q	once/24 months
2.	Source Range Flux (NI-5143)	Q*	once/24 months
3.	Refueling Water Storage Tank Level (LIC-921)	Q	once/24 months
4.	Condensate Storage Tank		
	a. Level (LIC-1102A)	Q	once/24 months
	b. Level (LIC-1102)	Q	once/24 months
5.	Component Cooling Water flow to Charging Pumps (FI-637)	N/A	once/24 months
6.	Steam Generators		
	a. Steam Generators 21		
	i) Pressure (PI-1353)	Q	once/24 months
	ii.1) Level (LI-5001-1)**	Q	once/24 months
	ii.2) Level (LI-5001)	Q	once/24 months

Notes

* This excludes the detector which can not be energized at power.
** The containment isolation valves for these instruments are normally closed at Penetration Z in the Pipe Pen. Area.

Table 4.21-1 (2 of 3)
Alternate Safe Shutdown System

INSTRUMENTATION	CHANNEL CHECK	INSTRUMENT CALIBRATION
b. Steam Generator 22		
i) Pressure (PI-1354)	Q	once/24 months
ii.1) Level (LI-5002-1)**	Q	once/24 months
ii.2) Level (LI-5002)	Q	once/24 months
7. Component Cooling Water		
a) CCW flow to 21 Residual Heat Removal Pump (FIC-645)	N/A	once/24 months
b) CCW flow to 22 Residual Heat Removal Pump (FIC-646)	N/A	once/24 months
8. Auxiliary Feedwater		
a.i) AFW pump 21 suction pressure***	N/A	once/24 months
ii) AFW pump 21 discharge pressure***	N/A	once/24 months
b.i) AFW pump 22 suction pressure***	N/A	once/24 months
ii) AFW pump 22 discharge pressure***	N/A	once/24 months

Notes

** The containment isolation valves for these instruments are normally locked closed at Penetration Z in the Pipe Pen. Area.

*** Local mechanical gauge at pump suction/discharge.

Table 4.21-1 (3 of 3)
Alternate Safe Shutdown System

INSTRUMENTATION	CHANNEL CHECK	INSTRUMENT CALIBRATION
9. Service Water		
a. SSW pressre at CCW heat exchanger inlet (PI-1276)	N/A	once/24 months
b. SSW pressure at CCW heat exchanger inlet (PI-1277)	N/A	once/24 months
10. RCS Temperature		
a.i) Loop 21 hot leg (TI-5139)*	Q	once/24 months
ii) Loop 21 cold leg (TI-5140)*	Q	once/24 months
b.i) Loop 22 hot leg (TI-5141)*	Q	once/24 months
ii) Loop 22 cold leg (TI-5142)*	Q	once/24 months

Notes

* Normally deenergized, fed from breaker 2B on switchgear 12FD3.

Table 4.21-2 (1 of 2)

POWER DISTRIBUTION AND CONTROL

		FREQUENCY
1.	Alternate A/C Power Supplies	
	a. Switchgear 12FD3 and the following associated circuit breakers:	once/24 months
	i) Breaker 1B	once/24 months
	ii) Breaker 2B	once/24 months
	iii) Breaker 1T	once/24 months
	b. Switchgear 12RW3 and the following associated circuit breaker(s) and transfer switch(s):	once/24 months
	i) Breaker 1M	once/24 months
	and	
	Transfer switch EDG3	once/24 months
	AND	
	ii) Breaker 3M	once/24 months
	and	
	Transfer switch EDG4	once/24 months
	c. Unit 1 125V DC battery control power supplies for Switchgear 12FD3 and 12RW3 and its distribution system for ASSS Switchgear.	once/24 months
2.	Auxiliary Feedwater	
	Transfer switch EDC5	once/24 months

Table 4.21-2 (2 of 2)

POWER DISTRIBUTION AND CONTROL

		FREQUENCY
3.	RCS Makeup	
	Breaker 1M on Switchgear 12FD3	once/24 months
	AND	
	Transfer switch EDC4	once/24 months
4.	Component Cooling	
	Transfer switch EDF9	once/24 months

Table 4.21-3

POWER DISTRIBUTION AND CONTROL	FREQUENCY
1. Residual Heat Removal and MCC27	
a) Transfer switch EDC3	once/24 months
AND	
b) Transfer switch EDG1	once/24 months
AND	
c) Splice Box EZG4	once/24 months
2. Backup RCS Makeup (21 SIS Pump)	
Splice Box EZH1	once/24 months
3. Standby Feeder Cables	
a) Long (98' elev. PAB)	once/24 months
AND	
b) Short (SIS Pump Room)	once/24 months

ATTACHMENT B

Safety Assessment

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
August, 1985

Safety Assessment

The Indian Point Unit 2 design employs an Alternate Safe Shutdown System (ASSS) that ensures the following safety functions are satisified; reactor subcriticality, core cooling, reactor coolant system integrity, secondary side heat sink and reactor coolant system inventory.

In the unlikely event of a major fire or other external event affecting redundant cabling or equipment in certain plant areas, electrical power could be disrupted to safe shutdown components and systems. However, following the unlikely loss of normal and preferred alternate power, additional independent and separate power supplies from the Indian Point Unit 1 440-V switchgear are provided for a number of Unit 2 safe shutdown components. Independent power supplies from Indian Point Unit 1 auxiliaries are hardwired to manually operated transfer switches to power one train of the following safe shutdown components to maintain the above safety functions:

1. Component cooling pump 23.
2. Auxiliary boiler feed pump 21.
3. Service water pump 23.
4. Service water pump 24.
5. Charging pump 23.
6. Through use of casualty cables to connect MCC 27, RHR pump 21 or SI pump 21.

The ASSS includes the following instrumentation which is either pneumatic, mechanical or powered from the IP-1 power sources:

- RCS Hot Leg temperature
- RCS Cold Leg temperature
- Source range flux
- Pressurizer pressure
- Pressurizer level
- Steam generator pressure
- Steam generator level
- Condensate storage tank level
- Refueling water storage tank level
- Auxiliary feedwater pump suction and discharge pressure

- Service water pressure at the intake to the component cooling water heat exchangers

- Flow indicators for component cooling water flow to the charging pumps and RHR pumps.

Control of the ASSS components is by local manual operation of transfer switches, circuit breakers, pneumatic supplies, motor and air operated valves and hand held radio communications. Once an ASSS pump is placed into service its flow path, which is normally in the proper alignment, is verified and any re-alignment due to fire induced maloperation is done manually. ASSS instrumentation, some of which requires manual alignment of pneumatic supplies, is then observed to assure that the desired plant condition is being achieved during the controlled shutdown. Local manual operation of existing IP-2 components, and IP-1 power supplies comprising the ASSS relies on the use of procedures and actions at remote shutdown panels or locally at the equipment.

By letter dated August 22, 1983, as supplemented by letter dated March 30, 1984, the NRC issued their Safety Evaluation Report concluding that the IP-2 ASSS meets the performance goals set forth in Appendix R to 10 CFR 50. Therefore, Con Edison now considers the ASSS (as described above) to be completed and accepted by the NRC. As such, the ASSS is suitable to have its limiting conditions of operation and surveillance requirements incorporated into the IP-2 technical specifications as prescribed by 10 CFR 50.36.

Generic Letter 81-12 issued by the NRC on February 20, 1981 requested additional information from all reactor licensees regarding compliance of fire protection programs with the requirements of Appendix R to 10 CFR Part 50. Staff Position 8.(j) as contained therein requested the submittal of proposed technical specifications for equipment installed as part of an alternate shutdown system. In response to Staff Position 8.(j) Con Edison proposed technical specifications for the ASSS by letter dated August 7, 1981.

In Enclosure 4 to their August 10, 1982 letter the NRC requested that we make certain planned modifications to IP-2 which would enhance the ASSS and reduce the risk of fire induced core damage from that found in the Indian Point Probabilitic Safety Study (IPPSS). Those modifications consisted of installing additional hard-wired transfer switches and relocation of pneumatic instrumentation, were made to the ASSS during the 1982 refueling outage and confirmed by NRC letter of December 23, 1982. Further, in item 1 of Attachment 1 of Enclosure 2 to the August 10, 1982 letter, Con Edison was requested to submit revised technical specifications for the modified ASSS. As a result of our Appendix R reassessment, Con Edison installed, during the 1984 refueling outage, additional ASSS instrumentation to monitor source range neutron flux, hot and cold leg Reactor Coolant System temperatures. Con Edison performed a reassessment of fire protection for safe shutdown capability in accordance with Section III.G of Appendix R to 10 CFR 50 and reported its

plans to NRC in the January 10, 1983 submittal. Due to the above noted requests from the NRC and the additions and modifications made to the ASSS in 1982 and 1984, the technical specifications proposed in Con Edison's August 7, 1981 submittal are no longer applicable and are being resubmitted as requested in a November 15, 1983 letter from NRC (S.A. Varga to J. D. O'Toole).

Attachment A to this Application proposes changes to the technical specifications which would establish limiting conditions for operation and surveillance requirements for the IP-2 ASSS. These proposed technical specification changes are in accordance with the NRC request in Generic Letter 81-12, and Attachment 1 of Enclosure 2 to the August 10, 1982 NRC letter. Specifically, these proposed changes address the alternate power sources, transfer switches, alternate electronic and pneumatic instrumentation and casualty cables comprising the ASSS. Since the ASSS utilizes in-place IP-2 safe shutdown components (previously discussed), their operability is already addressed in the existing technical specifications and no additional requirements are proposed for them.

Basis for no significant hazards consideration determination

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870). Example (ii) of those involving no significant hazards considerations discusses a change that consistutes additional limitations not presently included in the technical specifications. The proposed limiting conditions for operation and surveillance requirements are additional limitations not presently included in the technical specifications. The inclusion of the alternate power sources, transfer switches, alternate electronic and pneumatic instrumentation and casualty cables compromising IP-2's ASSS is consistent with example (ii) and thus does not constitute a significant hazards consideration. Operation of IP-2 with the proposed amendment will not (a) increase the probability or consequences of an accident previously evaluated, (b) create the possibility of a new or different kind of accident from any previously evaluated, or (c) reduce the margin of safety.

Therefore, since this application for amendment involves proposed changes that satisfy the Commission's criteria for a determination of no significant hazards consideration or are otherwise consistent with examples of changes for which no significant hazards consideration exists, we have determined that this application involves no significant hazards consideration.

The proposed changes have been reviewed by both the Nuclear Power Station Nuclear Safety Committee and the Consolidated Edison Nuclear Facilities Safety Committee. Both Committees concur that the proposed changes do not represent a significant hazards consideration and will not cause any change in types or an increase in the amounts of effluents or any change in the authorized power level of the facility.