ATTACHMENT A

PROPOSED TECHNICAL SPECIFICATION CHANGES

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
OCTOBER, 1993

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	

Table 4.1-1

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
	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#	
33.	PORV Block Valve Position Indicator (Limit Switch)	M*	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#	**	

* Except when block valve operator is deenergized.

** 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.

Table 4.1-1

Minimum Frequencies for Checks, Calibrations and Tests of Instrument Channels

	Channel Description	Check	Calibrate	Test	Remarks
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*#	N.A.	
41.	Containment Hydrogen Monitor	Q	Q**	N.A.	

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

** Calibration will be performed using calibration span gas.

Table 4.1-3

Frequencies for Equipment Tests

		Check	Frequency	Maximum Time Between Tests
1.	Control Rods	Rod drop times of all control rods	Refueling # Interval	*
2.	Control Rods	Movement of at least 10 steps in any one direction of all control rods	Every 31 days during reactor critical operations	*
3.	Pressurizer Safety Valves	Setpoint	Refueling # Interval	*
4.	Main Steam Safety Valves	Setpoint	Refueling Interval	*
5.	Containment Isolation System	Automatic Actuation	Refueling # Interval	*
6.	Refueling System Interlocks	Functioning	Each refueling shutdown prior to refueling operation	Not Applicable
7.	Diesel Fuel Supply	Fuel Inventory	Weekly	10 days
8.	Turbine Steam Stop Control Valves	Closure	Monthly**	45 days**
9.	Cable Tunnel Ventilation Fans	Functioning	Monthly	45 days

* See Specification 1.9.

** This test may be waived during end-of-cycle operation when reactor coolant boron concentration is equal to or less than 150 ppm, due to operational limitations.

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.

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%.

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

4.6 EMERGENCY POWER SYSTEM PERIODIC TESTS

Applicability

Applies to periodic testing and surveillance requirements of the emergency power systems.

Objective

To verify that emergency power systems will respond promptly and properly when required.

Specifications

The following tests and surveillances shall be performed as stated:

A. DIESEL GENERATORS

1. Each month, each diesel generator shall be manually started and synchronized to its bus or buses and shall be allowed to assume the normal bus load.

2. At each Refueling Interval (#), each diesel generator shall be manually started, synchronized and loaded up to its continuous (nameplate) and short term ratings.

3. At each Refueling Interval (#), to assure that each diesel generator will automatically start and assume the required load within 60 seconds after the initial start signal, the following shall be accomplished: by simulating a loss of all normal AC station service power supplies and simultaneously simulating a Safety Injection signal, observations shall verify automatic start of each diesel generator, required bus load shedding and restoration to operation of particular vital equipment. To prevent Safety Injection flow to the core, certain safeguards valves will be closed and made inoperable.

4.8 AUXILIARY FEEDWATER SYSTEM

Applicability

Applies to periodic testing requirements of the Auxiliary Feedwater System.

Objective

To verify the operability of the Auxiliary Feedwater System and its ability to respond properly when required.

Specifications

A. The following surveillance tests shall be performed at least once every Refueling Interval (#):

   1. Verification of proper operation of auxiliary feedwater system components and initiating logic upon receipt of test signals for each mode of automatic initiation.

   2. Verification of the capability of each auxiliary feedwater pump to deliver full flow to the steam generators.

B. The above tests shall be considered satisfactory if control board indication and subsequent visual observation of the equipment demonstrate that all components have operated properly.

ATTACHMENT B

SAFETY ASSESSMENTS

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
INDIAN POINT UNIT NO. 2
DOCKET NO. 50-247
OCTOBER, 1993

SAFETY ASSESSMENT

Volume Control Tank Level
Transmitter

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

DESCRIPTION OF CHANGE

The current Indian Point Unit 2 Technical Specification requires that a channel calibration for the Volume Control Tank Level instrumentation be performed every refueling outage (Table 4.1-1, item #17). Currently this calibration is performed every 18 months (+25%). It is proposed that this calibration frequency be revised to every 24 months (+25%). This change is being made in accordance with the guidance contained in Generic Letter 91-04.

All completed test procedures from 1986 to the present have been evaluated, including any midcycle outage calibrations that may have resulted due to channel failures or modifications and the impact of Measurement and Test Equipment (M&TE) used to record the data. The drift uncertainty used in this analysis is based on "As Left/As Found" data and was used as an input to determine the Channel Statistical Allowance (CSA), using the Westinghouse setpoint methodology. Included in the evaluation, along with instrument drift, was a determination of all other channel uncertainties including Sensor, Rack, M&TE, and Process Effects for normal environmental conditions.

The Volume Control Tank Level Channel was reviewed using the Westinghouse methodology for evaluating channel uncertainties. Each uncertainty term was determined according to the instrument characteristics/specifications. A prediction of drift for the instrumentation over a 30 month period with a 95% probability at a 75% confidence level based on an evaluation of plant recorded "As left / As Found" data taken at the site since 1986 was made. Past cycle calibration data was evaluated to determine how well the instrumentation had performed from one cycle to the next.

This evaluation included a review of any work order data that may have been taken during a midcycle outage or any modifications to the channels. Also, past M&TE accuracies were reviewed by Consolidated Edison to insure that the M&TE used was of an equivalent accuracy such that it would not have biased the data in a non-conservative direction. Based on this evaluation a channel uncertainty was calculated.

There are no limitations or restrictions which would prohibit a 30 month operating cycle.

BASIS FOR NO SIGNIFICANT HAZARDS CONSIDERATION DETERMINATION

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

1. A significant increase in the probability or consequences of an accident previously evaluated will not occur.

   It is proposed that the channel calibration frequency for the volume control tank level instrumentation be changed from every 18 months (+25%) to every 24 months (+25%).

   A statistical analysis of channel uncertainty for a 30 month operating cycle has been performed. Based upon this analysis it has been concluded that sufficient margin exists between the existing Technical Specification limits and the licensing basis Safety Analysis limits to accommodate the channel statistical error resulting from a 30 month operating cycle. The existing margin between the Technical Specification limit and the Safety Analysis limit provides assurance that plant protective actions will occur as required. It is therefore concluded that changing the surveillance interval from 18 months (+25%) to 24 months (+25%) will not result in 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 accident previously evaluated has not been created.

   The proposed change in operating cycle length from a maximum of 22.5 months to 30 months resulting from an increased surveillance interval will not result in a channel statistical allowance which exceeds the current margin between the existing Technical Specification limits and the Safety Analysis limits. Plant equipment, which will be set at (or more conservatively than) Technical Specification limits, will therefore provide protective functions to assure that Safety Analysis limits are not exceeded. This will prevent the possibility of any new or different kind of accident from that previously evaluated from occurring.

3. A significant reduction in a margin of safety is not involved.

   The change in surveillance interval from a maximum of 22.5 months to 30 months resulting from an increased operating cycle will not result in a channel statistical allowance which exceeds the margin which exists between the current Technical Specification limit and the licensing basis Safety Analysis limit. This margin, which is equivalent to the existing margin, is necessary to assure that protective safety functions will occur so that Safety Analysis limits are not exceeded.

SAFETY ASSESSMENT

AUXILIARY FEEDWATER PUMPS AUTOMATIC ACTUATION CIRCUITS

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

DESCRIPTION OF CHANGE

Technical specification 4.8.A.1 requires that the following surveillance test be performed every refueling: Verification of proper operation of auxiliary feedwater system components and initiating logic upon receipt of test signals for each mode of automatic initiation. Currently, this surveillance is performed every 18 months (+25%). It is proposed that this surveillance frequency be revised to every 24 months (+25%). This change is being made in accordance with the guidance contained in Generic Letter 91-04.

The Auxiliary Feedwater System supplies high-pressure feedwater to the steam generators to maintain a water inventory for decay heat removal. The system is used for normal startup and shutdown, as well as for events leading to a loss of main feedwater.

The system consists of three pumps divided into two separate systems. The first system includes a turbine-driven pump which is capable of supplying the required auxiliary feedwater to all four steam generators. The second system includes two motor driven pumps, each capable of supplying the required auxiliary feedwater to two steam generators. The auxiliary feedwater pumps are automatically started on receipt of any of the following signals:

1. Steam driven auxiliary feedwater pump:

    a. Low-low water level in any two of the four steam generators.

    b. Loss of offsite power concurrent with a unit trip and with no safety injection signal present.

    c. AMSAC

2. Motor driven auxiliary feedwater pump:

    a. Low-low water level in any steam generator.

    b. Automatic trip of main feedwater pump(s).

    c. Safety injection signal.

    d. Loss of outside power concurrent with a unit trip.

    e. AMSAC

Testing of Auxiliary Feedwater System automatic actuation logic is performed every refueling.

Completed test procedures were reviewed from the last four refuelings spanning a period in excess of five years. Only in one instance was a deficiency observed which impacted the operation of the Auxiliary Feedwater System. Even in that instance the minimum flow requirements would have been met since the deficiency affected only the diverse steam driven pump. The redundant motor driven pumps met the acceptance criteria of the test. In this test, performed in 1986, a relay did not initially pickup. The relay controls opening of a pressure control valve which supplies steam to the turbine drive pump.

In another test performed in 1991 a breaker related to operation of a motor driven pump failed to close. However, upon evaluation it was determined that the breaker malfunction was due to an incorrect test procedure.

EVALUATION AND CONCLUSION

The test results, listed above, indicate that over a period of five years only one failure occurred which would have impacted the operation of the auxiliary feedwater system, and then only in a peripheral manner. The failure was in the turbine drive pump system, which is not the principal source of auxiliary feedwater, and would not have prevented the auxiliary feedwater system from supplying more than the required amount of feedwater.

Based on the above discussion, extension of the test interval from an 18 month refueling interval to a 24 month refueling interval would have little 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 Technical Specifications require verification of proper operation of auxiliary feedwater system components and initiating logic upon receipt of test signals for each mode of automatic initiation every 18 months (+25%). This surveillance interval is being revised to 24 months (+25%).

   Test results over a period of five years indicate that automatic actuation of the Auxiliary Feedwater System with various simulated transient signals to be reliable. Even with the one failure noted the system would still have been able to deliver the required flow and perform its intended safety function. This is because the design of the system reflects not only redundancy but also diversity. These design features tend to negate the affects of the observed failure which affected only one train. Thus, based upon the test history of the system and its design-in-depth, it is concluded that an extended operating cycle 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.

   Since past test history validates the high reliability of the Auxiliary Feedwater System to auto-start for required transients, the extended operating cycle will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

   Due to the reliable performance of the Auxiliary Feedwater System, as evidenced by past surveillances performed at 18 to 22.5 month frequencies, it is believed that an extended operating cycle will not involve a significant reduction in a margin of safety.

SAFETY ASSESSMENT

CONTAINMENT HIGH RANGE AREA RADIATION MONITORS
(R-25 and R-26)

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 40, requires that the high-range Containment Radiation monitors (R-25 and R-26) be calibrated at a refueling interval. Currently, this surveillance is performed every 18 months (+25%). It is proposed that this surveillance frequency be revised to every 24 months (+25%). This change is being made in accordance with the guidance contained in Generic Letter 91-04.

Two ion chamber type radiation detectors (R-25 and R-26) are installed in Containment. These detectors are wired to receiving units located on the accident assessment panel located in the Control Room. Analog type ratemeters display values from 10^0 to 10^7 rem/hr. These indications are continuously recorded on separate strip chart recorders. Computer outputs are provided, as well as alarm output contacts for annunciation of high radiation inside of the containment building. A check feature is also provided for periodic system verification. Pushbuttons for check initiation and reset are provided on the front of each ratemeter.

One of the high-range radiation detectors is installed at the top of the pressurizer and the other on the steam generator wall in such a way that they can monitor dose rates within the Containment Building. These monitors are intended to provide information about the extent of a breach of a fission-product barrier.

No control features are provided with this system.

Technical Specification Table 3.5-5, item 10, requires that one of the high-range containment radiation monitors (R-25 and R-26) be operable. The action required in the event that both channels are inoperable is to restore one channel to operable status within seven days or initiate an alternate means of high-range radiation monitoring in the Containment.

Test results from four completed tests covering the time period from 1986 through 1991 were reviewed. In no case were both instruments out of calibration at the same time and both monitors were found operable in each test.

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.

   It is proposed that the calibration frequency for the high-range Containment Radiation Monitors (R-25 and R-26) be revised from every 18 months (+25%) to every 24 months (+25%).

   These two monitors are redundant to each other and are used for post accident monitoring purposes. They serve no function during normal plant operation. Furthermore, they serve no purpose in preventing accident initiation or mitigation. They are used for Emergency Planning purposes to indicate a release of radioactivity to containment.

   Review of past test results indicates that the devices have proven reliable during past surveillances and there was no indication that they would not remain operable for an extended operating cycle. In addition, the devices are essentially redundant to each other. Each device would respond to a release of radioactivity to Containment.

   In consideration that the monitors are redundant, and in view of the past test history of the monitors, there would be no significant increase in the probability or consequences of an accident due to an extended operating cycle.

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

   The role of R-25 and R-26 is in the assessment of radiological releases to Containment. In this function it is important that one of the instruments, being high range, respond to a radiological release. Indications from the devices are not used in a quantitative manner. Rather they are used for qualitative purposes. Due to redundancy and past test history, continued operability is expected. In addition, the instruments serve no function in preventing accident initiation or accident mitigation. Therefore, it is concluded that an extended operating cycle for these monitors would not result in the possibility of a new or different kind of accident from any previously analyzed.

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

   Due to the qualitative function served by these two instruments as well as their redundancy and acceptable past test history, no significant reduction in the margin of safety due to an extended operating cycle is expected.

SAFETY ASSESSMENT

SAFETY INJECTION SYSTEM ELECTRICAL LOADING

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

DESCRIPTION OF CHANGE

Technical Specifications 4.6.A.2 and 4.6.A.3 specify the periodic tests which are required to be performed on the diesel generators at each refueling outage.

Technical Specification 4.6.A.2 requires, in part, "..., each diesel generator shall be manually started, synchronized and loaded up to its continuous (nameplate) and short term ratings". Technical Specifications 4.6.A.3. requires, in part, "..., to assure that each diesel generator will automatically start and assume the required load within 60 seconds after the initial start signal, the following shall be accomplished: by simulating a loss of all normal AC station service power supplies and simultaneously simulating a Safety Injection signal, observations shall verify automatic start of each diesel generator, required bus load shedding and restoration to operation of particular vital equipment".

Currently this surveillance is performed every 18 months (+25%). It is proposed that this surveillance frequency be revised to every 24 months (+25%). This change is being made in accordance with the guidance contained in Generic Letter 91-04.

The onsite sources of emergency power are three emergency diesel generator sets, each having a capability of 1750 kw (continuous), 2100 kw for 2 hours in any 24 hour period and 2300 for 1/2 hour. Any two of these units are capable of sequentially starting and supplying the power requirement of one complete set of safeguards equipment. They are capable of starting and initiating load sequencing within 10 seconds after an initial start signal. Although they have the capability of being fully loaded 30 seconds after the initial start signal, actual safeguards sequencing is set such that total loading of the diesel generators occurs in $\leq$ 60 seconds.

Each diesel generator is started on the occurrence of either a safety injection signal or an undervoltage on any 480 volt bus. One emergency diesel generator is connected to bus 5A, one to 6A and the other to buses 2A and 3A.

The transfer from normal supply to EDG supply of 480 volt safeguards buses occur as follows:

1. Safety injection and loss of off-site power

2. Unit trip, no SI and loss of off-site power

3. Degraded voltage on each respective bus (start only; manual transfer)

4. Degraded voltage with a safety injection signal for 10 seconds (start only; manual transfer)

Review of Tests

The results of the completed tests of PT-R14 from the last five refueling outages were reviewed.

PT-R14 is a complex, integrated procedure involving several plant systems. The results of the tests are documented in surveillance test records. It should be noted that practices at Indian Point Unit 2 require the personnel performing the test to document all observed anomalies whether they relate directly to the test or other plant activities. Also, it is the practice of Con Ed to perform such tests consistent with maintenance requirements and activities during the complex refueling outages.

In evaluating the test results a thorough review of all documented test anomalies was completed, regardless of the nature of the item. The first step in this process was to classify the individual anomalies into the three categories described below:

Category 1 - Indication Items

This category included anomalies which were related to indications which have no affect on actual actuation of components. When appraised individually, these items did not affect the ability of the safeguards systems to perform their intended function in an accident situation. In every case where indicators did not function as intended, alternate methods to verify functional operation existed.

Although indicating lights have been included in this assessment for completeness, functioning of the indicating lights is not part of the test acceptance criteria.

Category 2 - Miscellaneous items

This category consisted of routine hardware anomalies which have little or no affect on the effective operation of the safeguards systems in the event of an automatic initiation signal. This category included such things as incorrect timers and problems resetting the safeguards systems.

Category 3 - Potential Test Impacts

This category included component or system observations which could have resulted in a failure to fully initiate the proper safeguards function in the event of an automatic initiation signal. These deficiencies were considered to potentially have an impact on the functionality of the test and so were more carefully evaluated.

Equipment out of service during a test was not classified as a test deficiency. As noted above, this situation is factored into the overall outage plan as a maintenance activity. Equipment so identified during a test is subject to post maintenance testing before it is returned to service.

Summary of Results

Each Test observation has been identified in one of the three categories listed above.

Because the category 3 items could potentially impact the functionality of the tested systems each item will be discussed individually.

Test on 1/18/1986

The 23 motor driven auxiliary feedwater pump did not start on a test signal. The auto-start switch was exercised and alignment checked. The problem did not recur in subsequent tests. No indication of deterioration due to age was noted and this test failure was considered a random failure which would not adversely affect an extension of the surveillance interval to 24 months.

Test on 3/24/89

The 23 CCW pump failed to strip from the bus prior to D/G loading. The failure was caused by a faulty relay. The relay was replaced and the system retested satisfactorily. This failure to strip did not cause the diesel to overload and the test acceptance criteria were met.

Test on 6/13/91

Several problems were encountered in the PT-R14 testing performed in 1991. The first test was performed using stop watches. Several subsequent tests were performed using a visicorder. The visicorder was not installed properly (a resistor bank was not connected) and currents and short circuits were introduced into the controls of the equipment being tested, causing some of the reported failures.

In addition, both the 21 RHR Pump and the 21 ABFW Pump exceeded the one minute load time relay, 27-BA/X14.

Component failures during 1991 were attributed to two causes:

1. Improper installation of test equipment, i.e., the visicorders introduced short circuits in the equipment being tested. Subsequently, the equipment was evaluated and re-tested with satisfactory results.

2. In the case of the RHR Pump and 21 AFBW Pump, the cause of their actuation in excess of the specified 60 second time period has been traced to a faulty relay. As a result of evaluation, it could not be concluded whether the relay functioned improperly or was the result of the incorrect visicorder installation.

In neither case would the identified cause affect the proposed extension to 24 months.

Evaluation

The previous discussion has addressed all observations noted in the completed test procedures. In almost all cases those observations falling into category 1 or 2 were unrelated to the acceptance criteria of the test. These items were recorded as part of the test so that corrective maintenance could be implemented. Items of a more potentially significant nature fell into category three and, therefore, were fully evaluated as discussed above. With the possible exception of the test performed in 1991, the category 3 deficiencies were concluded to be random events and not related to time between tests. The 1991 test observation could have been the result of incorrect installation of test equipment. Otherwise, it also would have fallen into the category of random events. Since a deficiency noted in one year did not repeat itself in subsequent refueling tests, test history tends to support the conclusion that failures were random and not time related.

Because the focus of the above discussion dwells on evaluation of past problem areas, there is no mention of the 1993 refueling test. This test went well with all test acceptance criteria being achieved with no adverse observations.

Since the failures revealed by the test histories appear to be random and show no indication of being time dependent, it is believed that past test data justifies extending the current operating cycle with no significant impact upon 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 test procedure under consideration is one of the more complicated surveillance procedures accomplished at a refueling interval. Considering the vast number of components that are tested it is highly improbable that some deficiencies will not occur. When such problems are encountered it is important to note whether the failure is time dependent and, in addition, whether the corrective maintenance implemented prevents recurrences in the future. In consideration of the evaluation of past test observations it is important to note that the problems which occurred were not time dependent and that maintenance practices have been effective in precluding future failures of the same type. Equally important is whether the emergency power system would have performed its intended safety function if the situation was not a test but represented an actual demand upon the system. Test acceptance criteria are always more stringent than required by accident scenarios to provide margin. As discussed above the two most significant findings were a failure of a CCW pump to strip from the bus during the 1989 test and a relay which did not function within its timing sequence. In the first instance, the diesel generator was not overloaded. In the second instance, the relay did function albeit not within the allotted time. In both cases, safety functions would have been performed.

Thus, it is concluded that an extended period between surveillances 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.

   The deficiencies noted in the test data taken during the last several refueling outage surveillances were not substantial in number and would not have impacted the capability of the the Safety Injection System and its emergency power supply to perform its intended safety function. The effectiveness of maintenance practices, both preventive and corrective, has been proven in that deficiencies noted in one test are not repeated in subsequent tests. The last refueling surveillance test was completely successful where no new test failures were noted. Because past test deficiencies do not appear to be time dependent, extending the surveillance interval by 7.5 months is not expected to create the possibility of a new or different kind of accident from any accident previously created.

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

   Because previous tests indicate that the engineered safety features power supply would have performed its safety function if called upon over the past several years, it is concluded that extending the operating cycle by several months will not involve a significant reduction in a margin of safety.

SAFETY ASSESSMENT

SAFETY INJECTION SYSTEM

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

DESCRIPTION OF CHANGE

Technical Specification 4.1, Table 4.1-3, item 5 requires the performance of an automatic actuation of the containment isolation system each refueling shutdown. Technical Specification 4.5.A.1 requires that a safety injection system test be performed at each reactor refueling interval. Technical Specification 4.5.B.1. requires that the Containment Spray System be tested at each reactor refueling interval. Technical Specification 4.5.E.4.1 requires verification that the Control Room Air filtration system automatically switches into a recirculation mode of operation upon a safety injection signal or a high radiation signal.

All of these requirements are currently demonstrated upon an 18 month (+25%) interval. It is proposed that the surveillance frequency be revised to every 24 months (+25%). This change is proposed in accordance with guidance contained in Generic Letter 91-04.

All of the above requirements are met by the performance of a singular test for the Safety Injection System.

The results of the completed tests from the last five refueling outages have been reviewed. The Safety Injection System test is a complex integrated procedure which involves several plant systems. The results of the tests are documented in surveillance test records. It should be noted that all test anomalies are documented whether they relate directly to the test or other plant activities. Also, it is permissible to perform such tests with non-essential equipment out of service because of scheduled and non-scheduled maintenance requirements; this equipment is subject to testing prior to returning it to service. Test anomalies were documented in all five regular tests. In evaluating the test results, a thorough review of all documented test anomalies was completed regardless of the nature of the item.

A number of observations fall into the categories of indication and equipment being unavailable for testing because it was out of service for maintenance. The items falling into the indication category were dismissed from further consideration as these had no bearing upon the test acceptance criteria. In the second category, as it is customary to perform post maintenance testing on equipment prior to return to service, no further consideration was given. The last category consisted of component or system occurrences which were deemed abnormal and could potentially impact the ability of the Safety Injection System to perform its intended safety function.

A number of problem areas were documented in each test. However, on an overall basis it is evident that the results do not impact the ability of the systems to perform their intended safety functions. In addition none of the anomalies have proven to be time dependent.

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 central safety objective in reactor design and operation is the control of reactor fission products from the fuel. Four methods are used to ensure this objective. Two of these methods are: 1) retention of fission products in the reactor coolant for whatever leakage occurs; and 2) retention of fission products by the containment for operational and accidental releases beyond the reactor coolant boundary. The engineered safety features are the provisions in the plant that embody these two methods to prevent the occurrence or to ameliorate the effects of serious accidents.

   The engineered safety features systems are the containment system, the safety injection system, the containment spray system, the containment air recirculation cooling and filtration system, the isolation valve seal-water system, and the containment penetration and weld channel pressurization system. Each engineered safety feature provides sufficient performance capability to accommodate any single failure of an active component and still function in a manner to avoid undue risk to the health and safety of the public.

   A comprehensive program of plant testing is formulated for all equipment, systems, and system control vital to the functioning of engineered safety features. The program consists, in part, of integrated tests of the systems as a whole and periodic tests of the actuation circuitry and mechanical components.

   An assessment has been performed of the test results from the last five refueling outages, covering a period in excess of seven years. In reviewing the test results particular attention was directed towards those test anomalies which directly impacted test acceptance criteria and, thus, influence the capability of the safety injection system to perform its intended safety function. Although in each test a problem area was identified, the number of such events were minimal. Furthermore, after corrective action these events were not repeated in subsequent system tests. In all instances the problems were not identified to be time dependent. Furthermore, the consequence from a system safety function perspective was minimal. Thus, it is concluded that extending the surveillance interval by several months 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.

The number of problem areas in each test have been few and of minimal to nonexistent safety significance. In 1986, a valve failure occurred which would have been detected by alternate means during an extended operating cycle. In another instance, lack of valve movement could not be repeated in a second test, leading to the conclusion that the valve malfunction was not induced by the system but was the result of the test process. In the last problem area, manual SI initiation, no credit is taken within the FSAR accident analysis for this function. In 1989, a series of containment isolation valves failed to stroke as required. In three instances the valves failed closed, which is the correct position. In the other instances, either the redundant valve did stroke to the correct position or the valve was located in a closed system. In all these events there was minimal impact upon safety. More importantly, after corrective action, these failures were not repeated in the 1991 or 1993 tests. In 1991, one breaker failed to perform within specifications and thus was considered defective. In 1993 there were no major equipment malfunctions, although one containment isolation valve failed to perform as required.

In summary, although there have been anomalies in all of the tests evaluated, none were deemed serious enough to impact the safety function of the safety injection system or to be considered as having a negative affect upon an increased interval of several months between surveillances. Therefore, it has been concluded that an increased operating cycle will not create the possibility of a new or different kind of accident from any accident previously evaluated.

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

The results of the previous five cycles of test data have been evaluated. None of the anomalies observed were sufficiently serious to impact the performance of the Safety Injection System or to weigh against an extended operating cycle. As there are no other changes to the safety analysis parameters which are impacted by an extended interval between surveillances, it is concluded that this change will not involve a significant reduction in the margin of safety.

SAFETY ASSESSMENT

REACTOR COOLANT SYSTEM SUB-COOLING

MARGIN MONITOR

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

DESCRIPTION OF CHANGE

The current Indian Point Unit 2 Technical specifications require that the Reactor Coolant System Sub-cooling Margin Monitor be calibrated every refueling outage (Table 4.1-1, Item 31). The sub-cooling margin monitoring function is implemented by the Core Exit Temperature Monitoring System (CETM). Several test procedures provide for calibration of the inputs to the CETM which are derived from Reactor Coolant System (RCS) wide range pressure, as well as RCS wide range hot leg and cold leg temperature. Data from these other test procedures was also included in this evaluation.

Currently, the surveillance interval for the RCS sub-cooling margin monitor is performed every 18 months (+25%). It is proposed that this surveillance frequency be revised to every 24 months (+25%). This change is being made in accordance with the guidance contained in Generic Letter 91-04.

As part of this evaluation, plant test procedures were reviewed in order to assess the tolerance to which equipment is calibrated, including the accuracy of the measurement and test equipment (M&TE) utilized. In addition, available executed test procedures were reviewed to statistically determine instrumentation drift. The availability of such executed procedures was limited to 3 tests since the CETM System was recently installed to replace the Saturation Meter. The "As Left/As Found" data from these procedures was statistically evaluated to determine projected 30 month drift valves with a 95% probability at a 75% confidence level. Where drift could not be derived from completed procedures, various alternative means were used to establish drift allowances, as follows:

1. Vendor drift values were employed for the Wide Range RCS Pressure transmitters (PC-VIA) since the statistically calculated drift was smaller than vendor specifications.

2. Drift allowances for the wide range RCS RTDs were based on vendor experience with RTD drift derived from cross calibration testing.

3. Wide Range Pressure and Temperature recorder drift allowances were based on a statistical evaluation of data for other similar recorders, since the surveillance data was inconclusive for the Wide Range RCS Pressure recorders and since the Wide Range RCS Temperature recorders have been replaced.

The drift values were used as input to the calculation of Channel Statistical Allowances (CSAs) using the Westinghouse setpoint methodology. In addition to instrument drift, these calculations included allowances for Sensor, Rack, M&TE, Process, and environmental effects for normal and adverse environmental conditions. These other inputs were based on a combination of Westinghouse experience, vendor specifications, Consolidated Edison Engineering calculations, and engineering judgement. In addition, recorder readability was considered to be independent of recorder calibration accuracy.

The results of the evaluation justify an extension of the surveillance interval to 30 months under normal operating conditions.

Separate uncertainties were calculated for "adverse" containment environmental conditions, consistent with the requirements of the Westinghouse Owner's Group Emergency Response Guidelines. The additional uncertainties for adverse conditions are due to transmitter environmental allowances and insulation resistance (IR) degradation of cables, connectors, splices, etc. These uncertainties are being factored into the Emergency Procedures.

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.

   It is proposed that the channel calibration frequency for the volume control tank instrumentation be changed from every 18 months (+25%) to every 24 months (+25%).

   The sub-cooling margin monitoring function is not relied upon during normal operation. There is no reference to its use in the Indian Point Unit 2 standard operating procedures. No credit is taken for this monitoring function within the safety analysis for either the prevention or mitigation of an accident. The increase in "normal" operating uncertainty, due to the longer operating cycle, as well as "adverse" uncertainties, is being incorporated in the EOPs. Therefore, the slight increase in uncertainty associated with a longer operating cycle between surveillances will not cause a significant increase in the probability or consequences of an accident.

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

   The sub-cooling margin serves no purpose during normal operation for prevention of an accident. No credit is taken within the FSAR Safety Analysis for accident mitigation. The sub-cooling margin monitor is relied upon within the Emergency Operating Procedures. Thus, the normal uncertainty due to a 30 month operating cycle, as supplemented by the instrument loop error due to a post-accident harsh environment, is being factored into the Emergency Operation Procedures in accordance with Emergency Response Guidelines. Thus, it is concluded that the possibility of a new or different kind of accident from any previously analyzed has not been created.

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

   Because the sub-cooling margin monitor serves no purpose during normal operation and appropriate measures have been implemented to reflect the additional uncertainty due to a 30 month operating cycle into the EOPs, it is concluded that there will be no significant reduction in a margin of safety.