Attachment A

Technical Specification Page Revisions

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
July, 1989

a. One of the two operable component cooling pumps may be out of service provided the pump is restored to operable status within 24 hours.

b. One auxiliary component cooling pump may be out of service provided the pump is restored to operable status within 24 hours and the other pump is demonstrated to be operable.

c. One component cooling heat exchanger or other passive component may be out of service for a period not to exceed 48 hours provided the system may still operate at design accident capability.

F. <u>Service Water System</u>

1. DESIGNATED ESSENTIAL HEADER

a. The reactor shall not be above 350°F unless three service water pumps with their associated piping and valves are operable on the designated essential header.

b. When the reactor is above 350°F and one of the three service water pumps or any of its associated piping or valves is found inoperable, and an essential service water header that meets the requirements of 3.3.F.1.a. cannot be restored within 12 hours, the reactor shall be placed in the hot shutdown condition within the next 6 hours and subsequently cooled below 350°F using normal operating procedures.

2. DESIGNATED NON-ESSENTIAL HEADER

a. The reactor shall not be above 350°F unless two service water pumps with their associated piping and valves are operable on the designated non-essential header.

b. When the reactor is above 350°F and one of the two service water pumps or any of its associated piping or valves is found inoperable, and a non-essential service water header that meets the requirements of 3.3.F.2.a cannot be restored within 24 hours, the reactor shall be placed in the hot shutdown condition within the next 6 hours and subsequently cooled below 350°F using normal operating procedures.

3. INTERCONNECTION OF HEADERS

Isolation shall be maintained between the essential and non-essential headers at all times when the reactor is above 350°F except for a period of up to 8 hours when the headers may be connected to facilitate safety-related activities.

4. SERVICE WATER INLET TEMPERATURE

a. The reactor shall not be above 350°F unless the service water inlet temperature is less than or equal to 95°F, or

b. When the reactor is above 350°F and the service water inlet temperature exceeds 95°F, the reactor shall be placed in the hot shutdown condition within the next 7 hours and subsequently cooled below 350°F using normal operating procedures.

c. The provisions of Specification 3.0.1 do not apply.

5. SERVICE WATER INLET TEMPERATURE MONITORING INSTRUMENTATION

a. The service water inlet temperature monitoring instrumentation shall measure the Hudson River water temperature at the Indian Point Unit No. 2 intake structure,

b. The service water inlet temperature monitoring instrumentation shall be operable when intake water temperature, averaged over a 24 hour period, reaches 80°F, and when the reactor is above 350°F,

c. When the requirements of Specification 3.3.F.5.b apply, temperature measurements shall be taken every 4 hours up to and including a service water inlet temperature of 90°F; when the service water inlet temperature exceeds 90°F, temperature measurements shall be taken once an hour,

d. If the service water inlet temperature monitoring instrumentation is declared inoperable; it shall be either restored to operable status or alternative measurements shall be taken with a calibrated portable instrument within the applicable measurement time frame requirements of Specification 3.3.F.5.c, and

e. If the requirements of Specification 3.3.F.5.d cannot be met, the reactor shall be placed in the hot shutdown condition within the next 7 hours and subsequently cooled below 350°F using normal operating procedures.

The requirement regarding the maximum number of SI pumps that can be energized when RCS temperature is less than or equal to 295°F is discussed under specification 3.1.A.

The containment cooling and iodine removal functions are provided by two independent systems: (a) fan-coolers plus charcoal filters and (b) containment spray with sodium hydroxide addition. During normal power operation, the five fan-coolers are required to remove heat lost from equipment and piping within containment at design conditions (with a cooling water temperature of 95°F).(12) In the event of a Design Basis Accident, any one of the following combinations will provide sufficient cooling to reduce containment pressure at a rate consistent with limiting off-site doses to acceptable values: (1) five fan-cooler units, (2) two containment spray pumps, (3) three fan-cooler units and one spray pump. Also in the event of a Design Basis Accident, three charcoal filters (and their associated recirculation fans) in operation, along with one containment spray pump and sodium hydroxide addition, will reduce airborne organic and molecular iodine activities sufficiently to limit off-site doses to acceptable values. These constitute the minimum safeguards for iodine removal, and are capable of being operated on emergency power with one diesel generator inoperable.

If off-site power is available or all diesel generators are operating to provide emergency power, the remaining installed iodine removal equipment (two charcoal filters and their associated fans, and one containment spray pump and sodium hydroxide addition) can be operated to provide iodine removal in excess of the minimum requirements. Adequate power for operation of the redundant containment heat removal systems (i.e., five fan-cooler units or two containment spray pumps) is assured by the availability of off-site power or operation of all emergency diesel generators.

One of the five fan cooler units is permitted to be inoperable during power operation. This is an abnormal operating situation, in that the normal plant operating procedures require that an inoperable fan-cooler be repaired as soon as practical.

However, because of the difficulty of access to make repairs, it is important on occasion to be able to operate temporarily without at least one fan-cooler. Compensation for this mode of operation, is provided by the high degree of redundancy of containment cooling systems during a Design Basis Accident.

The Component Cooling System is different from the system discussed above in that the pumps are so located in the Auxiliary Building as to be accessible for repair after a loss-of-coolant accident.[6] During the recirculation phase following a loss-of-coolant accident, only one of the three component cooling pumps is required for minimum safeguards.[7]

A total of six service water pumps are installed, only two of the set of three service water pumps on the header designated the essential header are required immediately following a postulated loss-of-coolant accident.[8] The limit on the service water maximum inlet temperature assures that the service water and component cooling water systems will be able to dissipate the heat loads generated in the limiting design basis accident.[12]

During the second phase of the accident, one additional service water pump on the non-essential header will be manually started to supply the minimum cooling water requirements for the component cooling loop.

The limits for the accumulators, and their pressure and volume assure the required amount of water injection following a loss-of-coolant accident, and are based on the values used for the accident analysis.[9]

Two independent diverse systems are provided for removal of combustible hydrogen from the containment building atmosphere: (a) the hydrogen recombiners, and (b) the post accident containment venting system. Either of the two (2) hydrogen recombiners or the post accident containment venting system are capable of wholly providing this function in the event of a design basis accident.

Two full rated hydrogen recombination systems are provided in order to control the hydrogen evolved in the containment following a loss-of-coolant accident. Either system is capable of preventing the hydrogen concentration from exceeding 2% by volume within the containment. Each of the systems is separate from the other and is provided with redundant features. Power supplies for the blowers and ignitors are separate, so that loss of one power supply will not affect the remaining system. Hydrogen gas is used as the externally supplied fuel. Oxygen gas is added to the containment atmosphere through a separate containment feed to prevent depletion of oxygen in the air below the concentration required for stable operation of the combustor (12%). The containment atmosphere sampling system consists of a sample line which originates in each of the containment fan cooler units. The fan and sampling pump head together are sufficient to pump containment air in a loop from the fan cooler through a containment penetration to a sample vessel outside the containment, and then through a second penetration to the sample termination inside the containment. The design hydrogen concentration for operating the recombiner is established at 2% by volume. Conservative calculations indicate that the hydrogen content within the containment will not reach 2% by volume until 13 days after a loss-of-coolant accident. There is therefore no need for immediate operation of the recombiner following an accident, and the quantity of hydrogen fuel stored at the site will be only for periodic testing of the recombiners.

The Post Accident Containment Venting System consists of a common penetration line which acts as a supply line through which hydrogen free air can be admitted to the containment, and an exhaust line, with parallel valving and piping, through which hydrogen bearing gases from containment may be vented through a filtration system.

The seven day out of service period for the Weld Channel and Penetration Pressurization System and the Isolation Valve Seal Water System is allowed because no credit has been taken for operation of these systems in the calculation of off-site accident doses should an accident occur. No other safeguards systems are dependent on operation of these systems.(11) The minimum pressure settings for the IVSWS and WC & PPS during operation assures effective performance of these systems and assures that the containment design pressure of 47 psig is not exceeded.

References

(1) FSAR Section 9
(2) FSAR Section 6.2
(3) FSAR Section 6.2
(4) FSAR Section 6.3
(5) FSAR Section 14.3.5
(6) FSAR Section 1.2
(7) FSAR Section 8.2
(8) FSAR Section 9.6.1
(9) FSAR Section 14.3

(10) Indian Point Unit No. 2 FSAR Sections 6.2 and 6.3 and the Safety Evaluation accompanying "Application for Amendment to Operating License" sworn to by Mr. William J. Cahill, Jr. on March 28, 1977.

(11) FSAR Sections 6.5 and 6.6.

(12) WCAP-12312, "Safety Evaluation for An Ultimate Heat Sink Temperature to 95°F at Indian Point Unit 2", July, 1989.

	Channel Description	Check	Calibrate	Test	Remarks
45	Service Water Inlet Temperature Monitoring Instrumentation	S	R	A	The test shall take place prior to T.S. 3.3.F.5.b applicability

b. Visual inspection shall be made for excessive leakage during these tests from components of the system. Any significant leakage shall be measured by collection and weighing or by another equivalent method.

2. Acceptance Criterion

The maximum allowable leakage from the Residual Heat Removal System components located outside of the containment shall not exceed two gallons per hour.

3. Corrective Action

Repairs or isolation shall be made as required to maintain leakage within the acceptance criterion.

4. Test Frequency

Tests of the Residual Heat Removal System shall be conducted at every refueling.

The containment is designed for a calculated peak accident pressure of 47 psig.(1) While the reactor is operating, the internal environment of the containment will be air at essentially atmospheric pressure and an average maximum temperature of approximately 130°F. With these initial conditions, the peak accident pressure and temperature of the steam-air mixture will not exceed the containment design pressure and temperature of 47 psig and 271°F.

Prior to initial operation, the containment was strength-tested at 54 psig and was leak-tested. The acceptance criterion for this preoperational leakage rate test was established as 0.10 w/o (L_a) per 24 hours at 47 psig and 271°F, which are the peak accident pressure and temperature conditions. This leakage rate is consistent with the construction of the containment,(2) which is equipped with a Weld Channel and Penetration Pressurization System for

2. The automatic Phase A containment isolation (trip) valves are actuated to the closed position either manually or by an automatically derived safety injection signal. The automatic Phase B containment isolation valves are tripped closed by automatic or manual containment spray actuation. The actuation system is designed such that no single component failure will prevent containment isolation if required.

C. Containment Systems

1. The containment vessel has an internal spray system which is capable of providing a distributed borated water spray of at least 2200 gpm. During the initial period of spray operation, sodium hydroxide would be added to the spray water to increase the removal of iodine from the containment atmosphere.[3]

2. The containment vessel has an internal recirculation system which includes five fan cooler units (centrifugal fans and water cooled heat exchangers), with a total heat removal capability of at least 308.5 MBTU/Hr. under conditions following a loss of coolant accident and at service water temperature of 95°F.[4] All of the fan cooler units are equipped with activated charcoal filters to remove volatile iodine following an accident.

References

(1) FSAR Section 5.1
(2) FSAR Section 5.1.2.7
(3) FSAR Section 6.3
(4) FSAR Section 6.4

Amendment No.

Attachment B

Safety Assessment

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
July, 1989

1.0 Description of Change

The proposed changes to Technical Specification 3.3.F allow Indian Point 2 to operate up to a Service Water System (SWS) inlet temperature of 95°F. New Limiting Conditions for Operations (LCOs) 3.3.F.4 and 3.3.F.5 are proposed for Service Water inlet temperature and associated monitoring instrumentation. Additionally, there are proposed editorial changes to Technical Specifications 3.3.F.1b and 3.3.F.2b to make the actions and wording consistent with other 350°F LCOs contained throughout the Technical Specifications. New surveillance requirements are proposed for the service water inlet temperature monitoring instrumentation in Technical Specification Table 4.1-1. There are also proposed changes to Technical Specification Basis 3.3 and to Technical Specification 5.2.C with respect to the proposed limit of 95°F for the SWS. The SWS inlet temperature change also requires a proposed change to Technical Specification Basis 4.4 to the maximum containment temperature (i.e., to 130°F). Finally, there are proposed editorial changes made to Technical Specification Bases 3.3 and 4.4 with respect to discussion on peak accident temperature and pressure. These proposed changes reflect that 47 psig and 271°F are the containment design pressure and temperature, and that the postulated peak accident pressure and temperature are less than these values.

2.0 Background

The Indian Point Unit 2 SWS draws water from the Hudson River (i.e., the Ultimate Heat Sink), and uses this water to cool various plant components. The warmed water is subsequently returned to the river. The design of the SWS is currently based on the inlet river water not exceeding 85°F. Based on the 1988 meteorological conditions, two temporary Emergency Technical Specification changes were issued to allow continued operation of IP-2 with SWS inlet temperatures up to 87°F and 90°F. It has been determined that the Ultimate Heat Sink temperature may become challenged during future summers. To address this issue in a systematic manner, analyses were performed at an assumed power level of 3083.4 MWt to determine whether it would be appropriate to increase the design basis temperature of the Ultimate Heat Sink to 95°F.

Adequate SWS cooling must be provided to safety-related plant equipment to ensure equipment operability and adequate cooling performance, to remove component and decay heat, and to support safe plant operation, shutdown and mitigation of postulated design basis accidents.

Normal Operations

Normal, safe plant operation is defined for this evaluation to be the ability to cool equipment, whose sudden failure could cause a design basis transient analyzed in FSAR Chapter 14, or whose operability is required to ensure that initial conditions assumed in the accident analyses are not exceeded. This includes cooling the containment atmosphere via the reactor containment fan coolers and cooling the instrument air compressors. In addition, the SWS provides cooling to the Component Cooling Water System (CCWS), which in turn cools the following equipment needed for normal, safe plant operations: the spent fuel pit heat exchanger, the reactor coolant pumps, the charging pumps, various sample coolers, and the reactor vessel support cooling blocks. Enclosure 1 to this Attachment presents the analytical basis for these components to operate at a maximum SWS inlet temperature of 95°F.

Abnormal Operations

The SWS and the CCWS provide the required cooling to support plant cooldown via the Residual Heat Removal (RHR) heat exchangers under off-normal and postulated accident conditions. Also, the SWS provides cooling to the emergency diesel generators. Enclosure 1 to this Attachment presents the analytical basis for these safety related components to operate and support safe shutdown at a maximum SWS inlet temperature of 95°F.

Under abnormal conditions it is also necessary to determine that the containment integrity would not be affected by this change in SWS inlet temperature. Enclosure 2 to this Attachment presents the analytical basis for containment integrity assuming worst case accident conditions consistent with the current FSAR with a maximum initial temperature of 130°F and an SWS inlet temperature of 95°F.

3.0 Safety Assessment

3.1 SWS Temperature

The proposed changes to Technical Specification 3.3.F, to Technical Specification 5.2.C and to Technical Specification Basis 3.3 with respect to a maximum SWS inlet temperature of 95°F would enhance operational flexibility and reliability without affecting safe operation and/or safe shutdown of the plant.

An assessment of operation and shutdown with this SWS inlet temperature has been provided in Enclosure 1 to this Attachment. This enclosure demonstrates the ability to safely operate and safely shutdown the plant with a maximum SWS inlet temperature of 95°F.

Related evaluations, testing, or plant changes not specifically covered in Enclosure 1 to this Attachment, but which are required to support the analytical assumptions used, are identified herein and are described as follows:

1. Service Water System (SWS) Testing - Flow testing of the SWS essential and non-essential headers was conducted during the Cycle 9/10 refueling outage. These tests were performed to demonstrate the capability of the Service Water System to provide the required normal and post-LOCA flow rates to safety related equipment. In order to support the proposed increase in Ultimate Heat Sink temperature from 85°F to 95°F the following plant changes resulted from an evaluation of data obtained during these tests:

   a) The Reactor Containment Fan Cooler Units (RCFCs) were balanced to receive the required 1600 gpm (each) post-LOCA service water flow rates at 95°F Ultimate Heat Sink temperature. The RCFC balancing was conducted following replacement of faulty balancing valves and installation of new flow instrumentation.

   b) The main turbine lube oil coolers (TLOC) and main boiler feed pump lube oil coolers (BFPLOC) were switched from the SWS essential header to the non-essential header. This change, performed in accordance with 10 CFR 50.59, removes a relatively large heat load (approximately 3000 gpm at 95°F) from the SWS essential header, which ensures adequate flow margin to the safety related equipment at an elevated Ultimate Heat Sink temperature. Transfer of the TLOC and BFPLOC to the SWS non-essential header was determined to be acceptable from a system flow capacity standpoint based upon a detailed review of equipment flow requirements. We also intend to further enhance our Service Water System this summer by establishing a third "conventional plant" header using the refurbished Unit No. 1 River Water System. Once implemented, the Unit 1 River Water System will provide cooling water to all turbine hall (non-safety related) loads during the warm weather months and the SWS non-essential header will be essentially dedicated to the CCW Heat Exchangers (with the exception of Main Condenser Circulating Water Pump Cooling, Strainer Backwash and Screenwash functions). Modifications and system testing have been completed that support this change.

   At the conclusion of all SWS flow testing, it was demonstrated that the safety related equipment serviced by the SWS essential and non-essential headers will receive the required cooling water flow rates during normal and post-LOCA conditions with an Ultimate Heat Sink Temperature of 95°F.

2. Component Cooling Water System (CCWS) Testing - A flow test of the CCWS was conducted during the Cycle 9/10 refueling outage for the purpose of benchmarking the thermal-hydraulic (T/H) computer model described in Enclosure 1 to this Attachment. The test and modelling methodology established was based upon the concept of achieving maximum system operating flexibility (i.e., adjusting individual component flows anywhere within their specified operating ranges) and at the same time,

ensuring that the required post-LOCA flow rates will be maintained upon automatic system realignment (i.e., RHR HXs lined up with and without Phase B Containment Isolation Signal). This test was conducted with the CCWS initially in it's "normal" alignment (RHR heat exchangers isolated). Pressure and flow data were recorded at this initial alignment and again with incremental increases in RHR heat exchanger throttle valve positions with one and then two CCW pumps operating. This test data was then used to benchmark the T/H model. The following changes resulted from the system test/model benchmarking effort:

a) The CCW System flow limit was developed based on a minimum pump header pressure at Power Operation, defined as P(min). As described in Section 3 of Enclosure 1 to this Attachment, P(min) ensures that a CCW pump would remain within its runout capacity with both RHR heat exchangers available (i.e., Post-LOCA alignment). The one pump and two pump P(min) has been calculated to be 74.5 psig and 111.5 psig respectively.

b) To ensure CCW pump runout protection in the post-LOCA system alignment, required butterfly valve positions for the RHR heat exchanger throttle valves 820A&B were calculated using both the T/H model and valve performance data collected during the system testing. The calculated required valve positions for valves 820 A and 820 B are 27.5° open and 25.5° open respectively. The valves have been set to the new required positions.

3. <u>Other Specific Requirements</u> - Provided in Section 6 of Enclosure 1 to this Attachment is a list of specific requirements recommended by Westinghouse resulting from the analyses and evaluations contained in the enclosure. The following summarizes the present status of these required actions.

<u>6.1 Item 1</u> - As described previously, testing of the SWS non-essential header was completed during the Cycle 9/10 refueling outage. The capability of the system to meet or exceed the flow assumptions used in the analyses has been confirmed by this testing.

6.1 Item 2 - An erosion/pipe thinning monitoring program for the 8 inch supply and return piping to the SFP heat exchanger and the 10 inch CCW pump discharge piping will be incorporated into our existing inservice inspection program. Initial inspections will be scheduled to be conducted during the next refueling outage.

6.1 Item 3 - The CCWs throttle valves for the SI pumps and the Recirculation pump motor coolers will remain in their current positions. The System Operating Procedure Checkoff List has been revised to ensure that these valve positions will not be altered without performing a flow test.

6.1 Item 4 - A change has been initiated to increase the low pressure alarm/spare pump auto-start set pressure from the present 80 psig to the two pump P(min) value of 111.5 psig (instrument loop inaccuracies included). Currently, this is being controlled administratively.

6.1 Item 5 - As discussed previously, CCWS throttle valves for the RHR heat exchangers (820 A&B) have been set at the required positions.

6.2.1.1 - A change has been initiated to raise the setpoint for the high sample water temperature switch from it's current 130°F to a value consistent with the maximum predicted sample water temperature of 140°F.

6.2.1.2 - A change has been initiated to reset the current EDG jacket water and lube oil cooler high temperature alarm setpoints to be consistent with the maximum vendor recommended temperatures of 190°F for the jacket water and 210°F for the lube oil. This change will be implemented prior to Ultimate Heat Sink temperature reaching 85°F which is the temperature upon which the current alarm settings are based.

6.2.2 - The Component Cooling Water System operating procedure has been revised to ensure that maximum flow limits for the various components are not exceeded.

6.2.2.1 - A program to monitor RCP cooling water temperature will be established and maintained by the Plant Engineering. Bearing lubrication inspections will be scheduled for refueling outages based on actual operating temperatures observed and compared with cooler fouling limits.

6.2.2.2 - The CCW System Operating Procedure Checkoff List has been revised to reflect the throttle valves for the Reactor Vessel Nozzle Support Cooling Blocks are in the wide open position.

4. Piping/Supports Review - A review of the effects of elevated Service Water System temperature on SWS/CCWS piping and supports has been initiated by our Engineering department. Preliminary evaluations indicate that the newly defined maximum operating temperatures for CCWS and SWS have negligible impact on the piping/supports as installed. The full evaluation will be completed and documented prior to NRC approval of this proposed amendment.

3.2 Containment Integrity

The proposed change to Technical Specification Basis 4.4 would enhance operational flexibility and reliability without affecting containment integrity. Under the proposed change the maximum allowed containment temperature would be increased to 130°F while the reactor is operating.

Containment integrity analysis (Enclosure 2 to this Attachment) using the latest NRC approved computer techniques demonstrated that containment peak pressure resulting from hypothetical Loss Of Coolant Accident (LOCA) and Main Steam Line Break (MSLB) events will not exceed design pressure with the proposed maximum initial containment temperature of 130°F. The analysis shows the maximum containment pressure would be 40.31 psig during the worst case LOCA with minimum safeguards (3 containment fan coolers, 1 containment spray pump). This pressure is well below the containment design value of 47 psig. The analysis assumes a power level of 3083.4 MWt, an initial containment pressure of 2.0 psig, an SWS inlet temperature of 95°F, and an SWS flow of 5000 gpm to the CCW heat exchangers. With an identical containment model and initial conditions, the peak pressure for the worst case MSLB event is 39.99 psig, which is even less than that for the LOCA event.

An assessment of the environmental qualification of electrical equipment inside containment based on this new analysis was conducted and it is concluded that the original qualification profile envelopes the new peak calculated values based on 3216 MWt/130°F analysis. Due to the margins included in the profiles, the small temperature differences were determined to be insignificant. Additionally, a setpoint/channel error review was conducted for both EQ and non-EQ instrumentation inside containment based on the proposed 130°F maximum allowable containment temperature. Results indicate that the 10°F increase in ambient temperature has minimal impact (0.05%) on instrument channel error. Hence, the proposed increase in the maximum containment temperature would not result in any adverse effects upon the health and safety of the public.

3.3 Environmental Evaluation

Section 3.1 of the Environmental Technical Specification Requirements - Part I: Non Radiological Environmental Protection Plan, which is contained in Appendix B to the Facility Operating License for the Indian Point Unit No. 2, requires Con Edison to prepare an environmental evaluation before engaging in any construction or operational activities that may affect the environment. Therefore, an evaluation was performed to determine what impact the use of warmer Hudson River Water for condenser and equipment cooling will have on the environment and the station's ability to meet environmental requirements.

If this application is approved, the Station will be authorized to operate at the higher intake water temperature and no other operational changes will be made. While it is unlikely that Hudson River ambient water temperature will approach the 95°F level based on past data, it is assumed for the purpose of this evaluation that such a worst case situation can occur.

The design temperature rise for the Indian Point Unit 2 cooling water system is about 15°F above ambient water temperature based on maximum condenser cooling water and service water flow, and about 17°F for Indian Point Unit No. 3, or with both Units 2 and 3 in operation, about 16°F. The yearly operational guidelines for these units, incorporate environmental considerations based on these temperature rises. These temperature rises, and therefore the heat discharged into the river, will not change noticeably as the SWS intake temperature increases to 95°F. Accordingly, there should be no incremental adverse impact associated with thermal loading due to the higher intake temperature.

For Unit 2 operating alone (or with Unit 3 at less than full power and at a delta T 15°F) at an intake water temperature of 95°F, the projected discharge temperature would be 110°F based on the design delta T. The SPDES discharge permit issued to the Indian Point Generating Station by the New York State Department of Environmental Conservation (DEC) contains a maximum allowable discharge temperature of 110°F. Therefore, even at an intake temperature of 95°F, the Station's cooling water discharge would still be in compliance with the temperature limit in its SPDES permit based on the design delta T. Moreover, this discharge temperature has already been deemed environmentally acceptable by DEC. A review of operating data, however, indicates that the actual temperature rise is at times somewhat higher (as high as 19°F) than the design value. In view of the somewhat higher actual delta T, the discharge temperature could reach the 110°F limit. If this condition occurs, the Station will comply with all applicable SPDES requirements.

4.0 Basis for No "Significant Hazards Considerations" Determination

4.1 SWS Temperature

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples in 51 FR 7751. Example (i) relates to a purely administrative change to Technical Specifications. The proposed change to Technical Specification 3.3.F.1.b and 3.3.F.2.b changes to LCO action requirements and wording to be consistent with other 350°F LCOs in our Technical Specifications. These proposed changes would also eliminate an unnecessary restriction (i.e., be below 200°F within 30 hours), because the LCOs 3.3.F.1.a and 3.3.F.2.a only apply above RCS temperature of 350°F. Also, changes to Technical Specification Bases 3.3 page 3.3-14 adds reference (12) and corrects a foot note error. Thus, these proposed changes reflect such an example.

Example (ii) relates to a change that constitutes an additional limitation, restriction or control not presently included in the Technical Specifications. The proposed changes to Technical Specification 3.3.F.4 and 3.3.F.5 impose new Limiting Conditions for Operation for service water inlet temperature and associated monitoring instrumentation. Additionally, changes to Technical Specification Table 4.1-1 imposes surveillance requirements for the service water inlet temperature monitoring instrumentation. Thus, these proposed changes reflect such an example.

Example (vi) relates to a change which either may result in some increase to the probability or consequences of a previously-analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria. The proposed change to Technical Specification 5.2.C and Technical Specification Bases 3.3 pages 3.3-10 and 3.3-11 increases the limit on service water temperature from 85°F to 95°F and reflects such an example.

Therefore, in accordance with the requirements of 10 CFR 50.92, the proposed changes to Technical Specification 3.3.F, to Technical Specification 5.2.C, Technical Specification table 4.1-1, and to Technical Specification Basis 3.3 with respect to a maximum SWS inlet temperature of 95°F, are deemed to involve "No Significant Hazards Considerations" because operation of Indian Point Unit No. 2 in accordance with these changes would not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

   With respect to a significant increase in the probability of an accident previously evaluated, Enclosure 1 of this Attachment analyzed the cooling provided to safety-related and non-safety-related equipment by the SWS and CCWS during normal operation, assuming a maximum SWS inlet temperature of 95°F. The analysis determined that with a maximum SWS inlet temperature of 95°F, there will not be an increase in the probability of the sudden failure of equipment cooled by SWS or CCWS, whose failure could cause an accident evaluated in the FSAR, (i.e. loss of reactor coolant flow due to the sudden failure of a RCP, loss of normal feedwater due to the sudden failure of a main feedwater pump, or reactor coolant system failures due to inadequate reactor vessel support cooling). Thus, these changes would not significantly increase the probability of an accident previously evaluated.

With respect to a significant increase in the consequences of an accident previously evaluated, Enclosure 1 of this Attachment evaluated the adequacy of the cooling provided by the SWS and CCW during off-normal and postulated accident conditions. The analysis determined that adequate cooling is provided to safety-related equipment to support operability following design basis accidents. In addition, adequate cooling is provided to the emergency core cooling and containment cooling systems to mitigate design basis accidents and maintain safety parameters below safety limits. Thus these would not significantly increase the consequences of an accident previously evaluated.

Therefore, these proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

Operation of Indian Point Unit 2 with a maximum 95°F Ultimate Heat Sink temperature does not create new equipment failure modes from those already evaluated in the FSAR. The failure of non-safety-related equipment cannot cause an accident not already evaluated. Adequate cooling is provided to safety-related equipment to ensure that they operate as intended. Therefore, no new or different kind of accident is created by increasing the allowable Ultimate Heat Sink temperature to a maximum of 95°F.

3) Involve a significant reduction in a margin of safety.

Enclosure 1 to this Attachment determined that adequate cooling is provided to support operation of safety-related equipment during normal operation, abnormal operations, and following design basis accidents. In addition, the enclosure determined adequate cooling is provided to ensure that safety-related equipment performance is sufficient to maintain safety parameters below safety limits (e.g., containment temperature and pressure will not exceed design limits or an acceptable EQ envelope, post LOCA emergency core cooling functions are supported to ensure long-term core cooling). The enclosure concluded that all applicable safety limits are met. Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

Therefore, based on the above discussion Con Edison has determined that the proposed changes to Technical Specification 3.3.F, Technical Specification 4.1-1, Technical Specification 5.2.C and Technical Specification Basis 3.3 with respect to a maximum SWS inlet temperature of 95°F, involve "No Significant Hazards Considerations".

The proposed changes to Technical Specification 3.3.F, Technical Specification Table 4.1-1, Technical Specification 5.2.C and Technical Specification Basis 3.3 with respect to a maximum SWS inlet temperature of 95°F, have been reviewed by the Indian Point Unit No. 2 Station Nuclear Safety Committee and by the Con Edison Nuclear Facilities Safety Committee. Both committees concur that these proposed changes involve "No Significant Hazards Considerations".

4.2 Containment Integrity

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (51 FR 7751). Example (i) describes a purely administrative change to technical specifications. Changes to Technical Specification bases 4.4 clarifies the statement regarding containment temperature and pressure and reflects such an example. Example (vi) describes a change which either may result in some increase to the probability or consequences of a previously analyzed accident or may reduce in some way a safety margin, but where the results of the change are clearly within all acceptable criteria. The change to the approximate average maximum containment temperature from 120°F to 130°F in Technical Specification Bases 4.4 reflects such an example.

Therefore, in accordance with the requirements of 10 CFR 50.92, the proposed change to Technical Specification Basis 4.4 with respect to an initial containment temperature of 130°F, is deemed to involve "No Significant Hazards Considerations" because operation of Indian Point Unit No. 2 in accordance with this change would not:

1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

   With respect to a significant increase in the probability of an accident previously evaluated, it should be noted that containment integrity is utilized in accident mitigation and has no affect on initiating an accident. Thus, this change would not significantly increase the probability of an accident previously evaluated.

   With respect to a significant increase in the consequences of an accident previously evaluated, the results provided in Enclosure 2 of this Attachment are based on conservative analyses utilizing new, refined and more accurate methodologies. These analyses show that with increased maximum containment temperature under the worst case LOCA condition, containment pressure will be maintained well below its design value of 47 psig. Thus, the same safety criteria as previously evaluated are still met with the proposed change. Thus, this change would not significantly increase the consequences of an accident previously evaluated.

Therefore, this proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change to the maximum temperature of containment does not modify the plant's configuration or operation, and therefore the postulated accidents are the only ones that require analysis and resolution. Nothing would be added or removed that would conceivably introduce a new or different kind of accident mechanism or initiating circumstance than that previously evaluated. There, no new or different kind of accident is created by increasing the maximum allowable containment temperature to 130°F.

3) Involve a significant reduction in a margin of safety.

With the proposed change, all safety criteria previously evaluated are still met, and remain conservative. With the new containment integrity analyses results provided in Enclosure 2 of this Attachment, it has been established that the IP-2 containment has substantial margins compared to its design pressure following a worst case loss of coolant accident. Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Therefore, based on the above discussion Con Edison has determined that the proposed change to Technical Specification Basis 4.4 with respect to an initial containment temperature of 130°F, involves "No Significant Hazards Considerations".

The proposed changes to Technical Specification Basis 4.4 with respect to an initial containment temperature of 130°F, has been reviewed by the Indian Point Unit No. 2 Station Nuclear Safety Committee and by the Con Edison Nuclear Facilities Safety Committee. Both committees concur that this proposed change involves "No Significant Hazards Considerations".

Enclosure 1

to

Attachment B

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
July, 1989