Attachment I

IP-2 Technical Specifications
Proposed Page Revisions

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
December, 1988

F. SERVICE WATER SYSTEM

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, place the reactor in hot shutdown within the next 6 hours and in cold shutdown within the next 30 hours.

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, place the reactor in hot shutdown within the next 6 hours and in cold shutdown within the next 30 hours.

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.

G. HYDROGEN RECOMBINER SYSTEM AND POST-ACCIDENT CONTAINMENT VENTING SYSTEM

1. The reactor shall not be made critical unless the following conditions are met:

a. Both hydrogen recombiner units together with their associated piping, valves, oxygen supply system and control system are operable, with the exception of one recombiner unit's

Attachment II

Safety Assessment

Consolidated Edison Company of New York, Inc.
Indian Point Unit No. 2
Docket No. 50-247
December, 1988

Description of Change:

This submittal proposes the following changes to the IP-2 Technical Specifications for the Service Water System:

- Operability criteria for the designated essential service water pumps are changed as follows:
  - three pumps will be required to be operable when the reactor is above 350°F as opposed to criticality as presently stated;
  - the allowed out-of-service time for one inoperable pump is increased from 8 hours to 12 hours to provide for operational and maintenance flexibility; and,
  - a 36 hour time period for attaining cold shutdown if the LCO cannot be satisfied is established where no time limit currently exists; and
- A Limiting Condition for Operation (LCO) and associated Action Statement are added that require two service water pumps on the designated non-essential header to be operable when the reactor is above 350°F; and,
- Requirements for the interconnection of the essential and non-essential headers are relocated to a separate subsection.

Background:

The specific proposed changes, as set forth in Attachment I to the Application, involve the Service Water System. Six pumps supply service water to two separate supply headers, each header being supplied by three of the pumps. Either of the two headers can be designated to supply the essential loads, with the other header feeding the non-essential loads. By manual valve operation the essential loads can be transferred to the non-essential header and vice versa. The essential loads are those which must have an assured supply of cooling water in the event of a loss of offsite power and/or loss-of-coolant accident. The non-essential loads are not required for the maintenance of plant safety immediately following an accident. Following a loss-of-coolant accident the component cooling heat exchangers are not needed during the initial safety injection phase, thus, they are normally supplied from the non-essential header.

Technical Specification 3.3.F is proposed to be modified to account for the division between essential and non-essential loads. The existing requirements for the designated essential header, with changes, have been put into one section and new requirements for the designated non-essential header are in a second section. A third section addresses interconnection of the two headers.

Requirements for the designated essential service water header are located in proposed Technical Specification 3.3.F.1. The revision to the Technical Specification with respect to pump operability above 350°F has been made in accordance with the commitment outlined in our March 11, 1982 letter to Mr. Ronald C. Haynes. Also, the allowed outage time for one inoperable pump will be increased from 8 hours to 12 hours to provide for operational and maintenance flexibility by allowing adequate time for repairs to service water components. Lastly, a 6 hour time period for attaining hot shutdown if the LCO cannot be satisfied is added, and, a 30 hour time period for attaining cold shutdown is established where no time limit currently exists.

The safety function of the designated essential service water pumps is to supply cooling water to the containment fan cooler units (FCU), the FCU motor coolers and the Emergency Diesel Generators (EDG). Current Technical Specifications on these equipment allow out-of-service times of 7 days for an inoperable component, provided alternate systems are operable. The alternate system for the FCUs are the containment spray pumps, and the 138 kv and 13.8 kv sources of offsite power are alternate supplies for the EDGs. These alternate systems do not require service water cooling. Therefore, it would be acceptable to allow comparable out-of-service times for the service water pumps. Also, under Section 3.7.4 of the Standard Technical Specifications, one service water header may be inoperable for 72 hours before commencement to hot shutdown is required. Although IP-2 presents a somewhat different design configuration, the proposed increased out-of-service time is less than that in the existing Standard Technical Specification for Westinghouse PWRs, which allows 3 pumps out for 72 hours, and less than the out-of-service times for the safety-related components it serves. Hence, the inoperability time for one designated essential service water pump can be changed from 8 hours to 12 hours, thereby allowing additional operational and maintenance flexibility, without having any adverse effects upon the health and safety of the public.

The proposed change prohibiting the reactor from being above 350°F with less than three designated essential service water pumps operable is more restrictive than the current limit of criticality and supports the current administrative requirement. Adding a time period to attain hot shutdown and establishing a definite time period to attain cold shutdown with less than three designated essential service water pumps operable are also more restrictive than the current specification. These changes will, therefore, not have any adverse effects upon the health and safety of the public.

Proposed Technical Specification 3.3.F.2 adds the requirement for two service water pumps on the designated non-essential header, together with their associated piping and valves, to be operable when the reactor is above 350°F. An appropriate action statement is provided when this condition can not be met. This addition supports a commitment to the Commission made in response to an observation from Safety System Functional Inspection 88-200 and our current administrative requirement to apply an LCO to the non-essential pumps, and, fulfills the requirement of 10CFR50.36(c)(2) to include limiting conditions for operation in technical specifications which constitute the lowest functional capability or performance level of equipment required for safe operation of the facility. Since component cooling is required for safe operation of the facility and the non-essential service water header supplies the component cooling heat exchangers, this addition is necessary.

The essential loads can be transferred to the non-essential header and vice versa by manual valve operation. The ability to interconnect the headers to accomplish the transfer is separately addressed in proposed Technical Specification 3.3.F.3. The current specification addresses this within the Action Statement for the essential service water pumps. As a conservative measure, header interconnection would continue to be limited to a period of 8 hours.

Basis for "No Significant Hazards Considerations" Determination:

In accordance with the requirements of 10 CFR 50.92, the proposed Technical Specification changes are 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.

   The proposed change to require three designated essential service water pumps be operable when the reactor is above 350°F is more restrictive than the existing Technical Specification requirement of operability prior to criticality. This change is consistent with previous accident analyses and supports a current administrative requirement.

   Concerning the proposed increase in designated essential service water pump out-of-service time, the inoperability of a service water pump, no matter how long the outage time, has no relationship to the probability of an accident occurring. Once an accident occurs, the increased time could affect the consequences of the accident. However, since alternate systems for the components supplied by the essential service water system are available and are not themselves supplied by the essential service water system, this is unlikely. Additionally, by increasing the service water pump out-of-service time, on-line maintenance could more readily be performed, which should enhance overall pump and system availability and reduce cycling of the unit. Thus, the same safety criteria as previously evaluated are still met with the proposed change. The allowance of an additional 4 hours out-of-service time for the essential service water pumps is still more restrictive than the allowed out-of-service times for the components it serves (such as FCU).

   The addition of a time period to attain hot shutdown and the establishment of a time period for attaining cold shutdown if the designated essential service water pump LCO cannot be satisfied are new requirements. Current Technical Specifications require placing the reactor in cold shutdown and a time period is not specified. The proposed 6 hour time period to achieve hot shutdown and the 30 hour time period to attain cold shutdown are consistent with the times actually required to achieve these modes in a controlled manner, and, are not unlike the requirement imposed for similar systems out-of-service in excess of their LCO by existing Technical Specification 3.0.1.

One of the proposed changes to Technical Specification 3.3.F (Service Water System) adds the requirement for two service water pumps on the designated non-essential header, together with their associated piping and valves, to be operable when the reactor is above 350°F. During the recirculation phase of a loss-of-coolant accident (LOCA), one component cooling water (CCW) pump is required to provide minimum safeguards. As discussed in the Basis for Technical Specification 3.3 and in Section 9.6.1.2 of the FSAR, one service water pump on the non-essential header is required to supply the minimum cooling water requirements for the CCW system. This change merely adds a LCO to ensure the availability of one non-essential service water pump to fulfill its function during a LOCA. A minimum of two service water pumps are required to be operable to satisfy single failure criteria. A 24 hour out-of-service time with only one non-essential pump operable is acceptable since the safety-related equipment it serves, the component cooling water pumps, are allowed the same outage time by Technical Specification 3.3.E. The proposed 36 hour time period, 6 hours to achieve hot shutdown and 30 hours to achieve cold shutdown if the LCO cannot be satisfied, is consistent with the times required to attain these modes in a controlled manner. Therefore, this change does not involve a significant increase in the probability or consequences of an accident previously evaluated, but supports the requirements of an accident previously evaluated.

Header interconnection is allowed under the current specificaton and is only addressed separately in the new format for this specification. Since no change to the system or its operation is involved, there is no impact on 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 changes to the operability requirements for the designated essential service water pumps (extension of allowed outage time, operability required prior to 350°F, 36 hours to attain cold shutdown) do not alter plant configuration or operation from that assumed in current analyses which bound those for IP-2. A longer time of inoperability for this system does not change the nature of the accidents for which this engineered safeguard has been installed. Since no change to the system or its operation is involved, there is no potential for a new or different kind of accident from any previously evaluated.

The addition of the non-essential service water header LCO ensures that the minimum equipment required to mitigate the consequences of a LOCA is operable when required. It does not affect the design basis as described in the FSAR, but is part of the design basis for a previously evaluated accident.

Since interconnection of the essential and non-essential headers is allowed under the current essential service water specification, and, no change to the system or its operation is involved, there is no potential for a new or different kind of accident from any previously evaluated.

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

Requiring operability of the designated essential service water pumps when the reactor is above 350°F imposes a more restrictive limit than the current one of criticality. Since heat removal requirements lessen as reactor coolant temperature decreases, the change will increase margin of safety with regard to heat removal ability. Adding a time period to attain hot shutdown and imposing a definite time limit for attaining cold shutdown when the LCO cannot be met are also more restrictive than the existing requirement and will also increase margin of safety with regard to improving the ability to remove heat.

The service water system is comprised of six pumps that supply two separate headers, each header being supplied by three pumps. Either of the headers can be designated to supply the essential loads, those which must have an assured supply of cooling water in the event of a loss of offsite power and/or loss-of-coolant accident, and the essential loads can be transferred to the non-essential header and vice versa by manual valve operation. This ability to exchange headers results in an alternate essential service water system, in most instances. Also, the safety function of the designated essential service water pumps is to supply cooling water to the FCUs, the FCU motor coolers and the EDGs. Current Technical Specifications on these equipment allow out-of-service times of 7 days for an inoperable component, provided alternate systems are operable. The alternate system for the FCUs are the containment spray pumps, and the 138 kv and 13.8 kv sources of offsite power are alternate supplies for the EDGs. These alternate systems do not require service water cooling. Therefore, due to the existence of these alternate systems and components, which would serve to mitigate the temporary inoperability of a pump, there is not a significant reduction in a margin of safety to increase the out-of-service time from 8 hours to 12 hours for an essential service water pump.

Previous accident analyses require non-essential service water to supply the component cooling heat exchangers. The proposed addition of a non-essential service water pump LCO in accordance with the design basis as described in the FSAR does not affect this requirement. Therefore, the proposed change does not reduce nor change any margin of safety from those existing now.

Placing the existing requirements for interconnection of the essential and non-essential headers in a separate subsection of the service water specification has no impact on a margin of safety.

The Commission has provided guidance concerning the application of the standards for determining whether "Significant Hazards Considerations" exist by providing examples in 51 FR 7751. Example (ii) of the Commission's Examples of Amendments That Are Considered Not Likely To Involve Significant Hazards Considerations relates to "a change that constitutes an additional limitation, restriction, or control not presently included in the Technical Specifications." In this case, the proposed changes to include a non-essential service water header LCO, to require

essential service water header operability prior to 350°F, and, to add a time period to attain hot shutdown and to impose a time limit to attain cold shutdown when the essential service water header LCO isn't satisfied, are similar to Example (ii) since the limitations are not currently in the Technical Specifications.

Example (iii) of the Commission's Examples of Amendments That Are Considered Likely To Involve Significant Hazards Considerations relates to a change that involves "a significant relaxation in limiting conditions for operation not accompanied by compensatory changes, conditions, or actions that maintain a commensurate level of safety...". As discussed under requirement 3 above, the relaxation in the essential service water header LCO to allow the inoperability of one pump for 12 hours instead of the current 8 hours is amply compensated for by the existence of alternate systems and components. Therefore, this change will <u>not</u> involve any "Significant Hazards Considerations".

Therefore, since the application for amendment satisfies the criteria specified in 10 CFR 50.92, is similar to examples for which "No Significant Hazards Considerations" exist, and does not meet the criteria for examples for which "Significant Hazards Considerations" exist, Con Edison has determined the application involves "No Significant Hazards Considerations".

The proposed changes have been reviewed by the Station Nuclear Safety Committee and the Con Edison Nuclear Facilities Safety Committee. Both committees concur that these changes do not represent any "Significant Hazards Considerations."