3.4 STEAM and POWER CONVERSION SYSTEM

Applicability

Applies to the operating status of the Steam and Power Conversion System.

Objective

To define conditions of the turbine cycle steam-relieving capacity. Auxiliary Feedwater System and City Water System operation is necessaary to ensure the capability to remove decay heat from the core.

Specification

A. The reactor shall not be heated above 350°F unless the following conditions are met:

(1) A minimum ASME code approved steam-relieving capability of twenty (20) main steam valves shall be operable (except for testing).

(2) Three auxiliary feedwater pumps each capable of pumping a minimum of 400 gpm must be operable.

(3) A minimum of 360,000 gallons of water in the condensate storage tank and a backup supply from the city water supply.

(4) Required system piping, valves, and instrumentation directly associated with the above components operable.

(5) The main steam stop valves are operable and capable of closing in five seconds or less.

(6) The total iodine activity of I-131 and I-133 on the secondary side of the steam generator shall be less than or equal to 0.15 uCi/cc.

B. Except as modified by 3.4.C below, if any of the conditions of 3.4.A above cannot be met within 72 hours*, the reactor shall be placed in the hot shutdown condition within the next 12 hours and subsequently cooled below 350°F using normal operating procedures.

* On a one time basis, the 72 hour action statement for main steam safety valves MS-49A and MS-45C may be extended for an additional 2 week period ending 4:45 p.m. on June 7, 1986 provided the remaining 18 safety valves are operable and the high flux trip setpoint is reduced to ≤78% of rated thermal power.

SAFETY ASSESSMENT

Technical Specification 3.4.A(1) of the Indian Point 2 (IP-2) Technical Specifications requires that a minimum of twenty ASME code approved main steam safety valves be operable when the RCS is above 350°F. If this requirement cannot be met within 72 hours then Technical Specification 3.4.B requires the reactor to be placed in the hot shutdown condition within the next 12 hours and subsequently cooled below 350°F using normal operating procedures.

The purpose of this request is to extend the 72-hour limiting condition of operation with less than twenty operable safety valves for a period not to exceed an additional two weeks at which time the two inoperable valves will be repaired. This is requested in order to allow the next phase of cycle start-up physics testing and to allow additional testing of the plant secondary side system due to installation of new low pressure turbine rotors, steam moisture preseparators, reworked electrical generator, new speed controls on the MBFP's and thereby avoid a later shutdown and the associated unwarranted thermal cycling of the unit should secondary side re-adjustments be necessary (could be performed during S/G safety valve repair shutdown).

The present technical specification is based on ensuring that the S/G's ASME code requirement of 110% relieving capability of the design steam flow rate is met even though this flow rate is much more than the flow rate corresponding to the licensed power level of 2758 Mwt. This requirement is to insure full heat removal capability for the Full Loss of Load Accident even without reactor trip. In addition, this does not assume operation of the atmospheric power operated relief valves nor the condenser steam dump valves.

The twenty main steam safety valves are divided evenly among the four steam generators (S/Gs) (i.e. 5 per S/G). The five valves on each S/G consist of one 6-in. by 8-in. and four 6-in. by 10-in. code safety valves. The total relieving capacity of all 20 valves is 15,108,000 lb/hr or 3,777,000 per S/G. The main steam safety valves MS-49A (6-in. by 10-in.) and MS-45C (6-in. by 8-in.) on S/Gs 21 and 23 respectively are presently inoperable. MS-49A is sized to relieve 823,000 lb/hr and MS-45C is sized to relieve 540,000 lb/hr. The actual setpoints of the remaining eighteen safety valves have been verified within the last 2 days and these valves are operable.

At the present full licensed power level (2758 Mwt), there is 11,669,736 lb/hr of steam flow from all four S/Gs which corresponds to 2,917,434 lb/hr of steam flow through each S/G. The ASME code requirement of 110% relieving capability for this steam flow would correspond to 3,209,177 lb/hr per S/G. S/G's 22 and 24 exceed this requirement since they have all 5 safety valves operable. The relieving capability of S/G 23 without MS-45C is 3,237,000 lb/hr which still exceeds the ASME code requirement. S/G 21 would not be able to meet the ASME code requirement without the relieving capability of MS-49A at 100% power. In order to meet the 110% relieving capability on S/G 21 with MS-49A inoperable the total steam flow for each S/G would have to be limited to 2,685,455 lb/hr. This steam flow would correspond to approximately 92% of rated thermal power.

Although 92% of the rated thermal power would ensure meeting the ASME code requirement on all four S/G's, in order to maintain the original design margin of required to actual safety valve relief capacity for the limiting steam generator loop, the high flux trip setpoint will be reduced to 78% of rated thermal power. In addition to the above justification, the Standard Technical Specifications (STS) for Westinghouse Pressurized Water Reactors NUREG-0452 Rev. 4 (which for this application are applicable to plants similar to the Indian Point 2 design) permit operation with one or more inoperable safety valves if the power range high flux setpoint is reduced to 87% of rated thermal power with one inoperable safety valve on any S/G. This present request therefore meets the intent of the STS. We intend to submit at a later date an application for permanent amendment to the Technical Specifications.

Accordingly operation under the proposed conditions below 78% of rated thermal power does not invalidate the design basis Loss of Load Accident described above.

Basis for No Significant Hazards Consideration Determination

The Commission has provided guidance concerning the application of the standards for determining whether a significant hazards consideration exists by providing certain examples (48 FR 14870). Example (vi) of those involving no significant hazards considerations discusses a change which may appear to reduce a safety margin but where the results are clearly within all acceptable criteria with respect to the system or component. The proposed change to the steam generator safety valve limiting condition of operation is in a less conservative direction and would appear to reduce a safety margin. However, consistent with the Commission's criteria for determining whether a proposed amendment to an operating license involves no significant hazards consideration, 10 CFR 50.92 (48 FR 14871), we have determined that the proposed change to the limiting condition of operation for the steam generator safety valves will not: increase the probability or the consequences of an accident previously evaluated since the limit on power to 78% of rated thermal power will reduce the consequences of a full loss of load accident and ensure meeting the required heat removal capability at the reduced power level; create the possibility for a new or different kind of accident from any previously evaluated since the change only involves a reduction in power in order to compensate for any loss of steam relieving capability of MS-49A and MS-45C; involve a significant reduction in the margin of safety since the power reduction compensates for any reduction in margin caused by the inoperability of MS-49A and MS-45C.

Therefore, since this application for amendment involves a proposed change that is similar to an example for which no significant hazards consideration exists, we have determined that this application involves no significant hazards conditions.

The proposed change has been reviewed by both the Station Nuclear Safety Committee and the Consolidated Edison Nuclear Facilities Safety Committee. Both committees concur that this change does not represent a significant hazards consideration and will not cause any change in the types or increase in the amount of effluents or any increase in the authorized power level of the facility.

May 23, 1986

Re: Indian Point Station Unit 2
Docket No. 50-247

SUPPLEMENTARY INFORMATION

- The appropriate filing fee, in accordance with 10 CFR 170.12 along with an Affidavit of Service attesting to state and local notification as required by 10 CFR 50.91 will be forthcoming under a separate letter.

- An attempt has been made to contact New York State concerning this proposed amendment but such a communication has so far proven unsuccessful.

- On Wednesday, May 21, 1986, at 4:45 PM, the subject LCO was entered. Efforts to perform corrective maintenance were unsuccessful over the ensuing 2 days. Therefore, it was determined that immediate license amendment action was warranted. This constituted a component malfunction which could not, at the time, have been foreseen or avoided.