

ATTACHMENT A

Technical Specification

Page Revisions

Consolidated Edison Company of New York, Inc.  
Indian Point Unit NO. 2  
Docket No. 50-247  
August, 1981

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- a. One safety injection pump may be out of service, provided the pump is restored to operable status within 24 hours\* and the remaining two pumps are demonstrated to be operable.
- b. One residual heat removal pump may be out of service, provided the pump is restored to operable status within 24 hours and the other residual heat removal pump is demonstrated to be operable.
- c. One residual heat removal exchanger may be out of service provided that it is restored to operable status within 48 hours.
- d. Any valve required for the functioning of the system during and following accident conditions may be inoperable provided that it is restored to operable status within 24 hours and all valves in the system that provide the duplicate function are demonstrated to be operable.
- e. One channel of heat tracing may be out of service for 48 hours.
- f. One refueling water storage tank low level alarm may be inoperable for up to 7 days provided the other low level alarm is operable.

**B. Containment Cooling and Iodine Removal Systems**

1. The reactor shall not be made critical unless the following conditions are met:
  - a. The spray additive tank contains not less than 4000 gallons of solution with a sodium hydroxide concentration of not less than 30% by weight.
  - b. The five fan cooler-charcoal filter units and the two spray pumps, with their associated valves and piping, are operable.
2. During power operation, the requirements of 3.3.B-1 may be modified to allow any one of the following components to be inoperable. If the system is not restored to meet

\*One time only exception for safety injection pump 23, the 24 hour action statement for operability of safety injection pump 23 may be extended for a period of 7 days ending 6 AM August 17, 1981 provided safety injection pump 23 is returned to operable status as soon as maintenance is completed. The provisions of Section 1.10 of the technical specifications are not applicable for this one time change.

ATTACHMENT B

Safety Evaluation

Consolidated Edison Company of New York, Inc.  
Indian Point Unit No. 2  
Docket No. 50-247  
August, 1981

## SAFETY EVALUATION

The proposed change, contained in Attachment A to this Application, would allow, on a one time only basis, continued power operation for a period of up to seven (7) days with one safety injection pump out of service.

It is highly unlikely that during this seven (7) day period a need for the safety injection pumps would arise or failure that would render an additional pump inoperable would occur. Despite this very low probability, an evaluation has been made of the effect on postulated occurrences of operating with two HHSI pumps in service.

The loss of one high head safety injection (HHSI) pump has no effect on the present IP2 large break LOCA analysis. The impact of loss of one HHSI pump on the steam line break analysis is negligible in consequences. The Steamline Break Accident is self limiting by the secondary side. Safety injection is used to mitigate the effects of this accident. The loss of one of the three SI pumps results in two pumps still being available. Assuming a single failure prohibits the use of one of these two SI pumps, sufficient Borated water will be pumped into the reactor vessel by the other pump to prevent any safety criteria from being violated as a result of a steam line break accident.

The loss of the HHSI does have an impact on the small break LOCA analysis. The existing IP2 analysis of record has a PCT of 1380°F, utilizing the December, 1974 Evaluation Model Version, which is significantly below the 2200°F limit of 10CFR50.46. This analysis assumed minimum safeguards, i.e., two out of three pumps operating assuming degraded conditions and upper bound line resistances. No credit for any flow from charging pumps was assumed. A total  $F_0$  of 2.32 was assumed. If no single failure of loss of a diesel is assumed, the analysis of record for IP2 applies, and represents a conservative bound for the expected PCT.

If the worst single failure is assumed, loss of a diesel, only one HHSI pump will deliver, which will reduce the core cooling capability. Depending on the specific pump that is assumed to not deliver, and the orientation of the spilling line to that pump, the delivered SI will vary among three possible delivery rates. Assuming equal probabilities for which pump fails, as well as an equal probability that spill can occur from any SI line, the probability of SI flow can be estimated.

The greatest amount of SI degradation can be approximately a 67% reduction in HHSI flow between RCS pressures of 1000 psig to 600 psig, or about a 50lbm/sec decrease. The probability of this case is approximately 1/4. The least amount of degradation expected is a 33% reduction in HHSI flow at the same pressures, or about a 25 lbm/sec decrease. The probability for this case is approximately 1/4. The third case is the most probable, approximately 1/2, and will result in HHSI flow degradation somewhere in between the two limits.

Small break PCT sensitivity to HHSI flowrate has been determined using the Westinghouse evaluation model, yielding an approximate 10°F increase in PCT per 1% decrease in HHSI over the important range from 1000 to 600 psig. This can result in a PCT penalty for IP2 due to loss of a HHSI pump of approximately 700°F to 300°F. A shift in the worst break size may alter these sensitivities somewhat, but they are believed to represent reasonable estimates.

Conservative assumptions in the analysis of record for IP2 can significantly mitigate this estimated PCT penalty for IP2. The evaluation model utilized is not the most recently approved version of the W ECCS codes. The more recent October, 1975 model version would result in a 200°F PCT reduction had it been used for IP2. Additionally, IP2 is presently operating with an  $F_0$  limit of 2.14, while the analysis assumed an  $F_0$  of 2.32. Presently the plant is operating at an  $F_0=1.91$ . Reflection of this actual plant operating condition would result in an approximate reduction in PCT of 100°F or more.

In conformance with Appendix K, the decay heat function of ANS+20% was utilized in analysis. However, better estimate decay heat has been well established and would result in a 250°F reduction in PCT if this single better estimate assumption is employed.

IP2 can also operate its charging pumps (each of which is powered from a separate diesel) in the event of a small LOCA. Assuming that two pumps operate & deliver 180 gpm to the RCS, this additional 25 lbm/sec of flow can reduce the worst case penalty previously stated by 50%, and can essentially eliminate the best case penalty. To ensure this additional cooling capability, special instructions have been given to the operators regarding restoration of charging pumps to service following safety injection.

In conclusion, operation of IP2 with one HHSI out for a limited period of time reduces the small LOCA margin in the event of a worst single failure. However, when credit is taken for the overly conservative assumptions in the FSAR analysis and operation of the charging pumps during a LOCA, this penalty is significantly mitigated. This combined effect and the fact that present analysis has 800°F margin to 10CFR50.46 limits indicates that operation of the plant for a short period of time is not a significant safety problem.

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

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

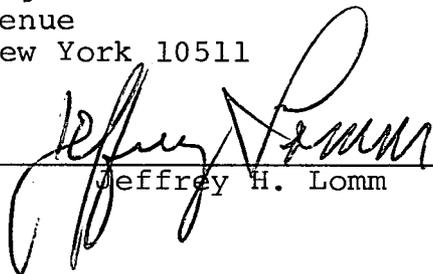
In the Matter of )  
 )  
CONSOLIDATED EDISON COMPANY ) Docket No. 50-247  
OF NEW YORK, INC. )  
(Indian Point Station, )  
Unit No. 2) )  
  
STATE OF NEW YORK )  
 )  
COUNTY OF NEW YORK ) ss:

AFFIDAVIT OF SERVICE

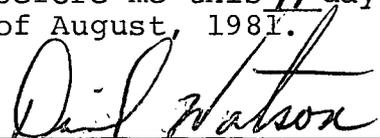
Jeffrey H. Lomm, being sworn, states:

That he is an Engineer employed by Consolidated Edison Company of New York, Inc., and that he has served the foregoing document, sworn to on August 11, 1981, entitled "Application for Amendment to Operating License" by mailing a copy thereof, first class postage prepaid and properly addressed to the following person:

Hon. George V. Begany  
Mayor, Village of Buchanan  
236 Tate Avenue  
Buchanan, New York 10511

  
\_\_\_\_\_  
Jeffrey H. Lomm

Subscribed and sworn to  
before me this 11 day  
of August, 1981.

  
\_\_\_\_\_  
Notary Public

DAVID WATSON  
Notary Public State of New York  
No. 03-4604876  
Qualified in Bronx County  
Commission Expires March 30, 1981