

BEFORE THE UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the matter of )  
Power Authority of the State of New York ) Docket No. 50-286  
Indian Point 3 Nuclear Power Plant )

APPLICATION FOR AMENDMENT TO  
OPERATING LICENSE

Pursuant to Section 50.90 of the regulations of the Nuclear Regulatory Commission (NRC), the Power Authority of the State of New York, as holder of Facility Operating License No. DPR-64, hereby applies for an Amendment to the Technical Specifications contained in Appendix A of this license.

This application seeks to amend Section 3.4 of Appendix A to the Operating License. The proposed change will allow plant operation with one or more inoperable main steam line safety valves provided that the power range high neutron flux setpoint is reduced to or below a specified value.

The proposed changes to the Technical Specifications are presented in Attachment I to this application. The Safety Evaluation corresponding to this change is included in Attachment II.

POWER AUTHORITY OF THE  
STATE OF NEW YORK

By John C. Brons  
John C. Brons  
Executive Vice President  
Nuclear Generation

STATE OF NEW YORK  
COUNTY OF WESTCHESTER

Subscribed and sworn to before me  
this 15 day of March 1988

*Barbara Ann Taggart*

**BARBARA ANN TAGGART**  
NOTARY PUBLIC, State of New York  
No. 4851437  
Qualified in Putnam County  
Commission Expires Jan. 27, 1990

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TABLE 3.4-1

MAXIMUM ALLOWABLE POWER RANGE NEUTRON FLUX HIGH SETPOINT WITH INOPERABLE STEAM LINE SAFETY VALVES	
Number of Inoperable Safety Valves Per Limiting Steam Generator*	Maximum Allowable Power Neutron Flux High Set-Point (Percent of Rated Power)
1	85
2	61
3	37

\*Limiting Steam Generator is that Generator with greatest number of inoperable safety valves.

Amendment No.

ATTACHMENT II TO IPN-88-007  
SAFETY EVALUATION OF PROPOSED TECHNICAL SPECIFICATIONS  
RELATED TO MAIN STEAM LINE SAFETY VALVES

NEW YORK POWER AUTHORITY  
INDIAN POINT 3 NUCLEAR POWER PLANT  
DOCKET NO. 50-286  
DPR-64

I. Description of Change

The existing Technical Specification 3.4.A requires that all of the twenty ASME code approved main steam line safety valves be operable when the RCS temperature is above 350°F. The allowable out of service time for these safety valves is 48 hours. The proposed revision to Technical Specification 3.4.A and its associated Basis would allow plant operation with up to three inoperable main steam line safety valves per steam line provided the power range neutron flux high setpoint is reduced per Table 3.4-1.

II. Evaluation of Change

There are five safety valves on each steam line; one 8 inch valve and four 10 inch valves. The relief capacities for the individual valves range from 540,000 to 823,000 lbm/hr. The total relieving capacity at full power is 3,777,000 lbm/hr per steam generator or 15,108,000 lbm/hr through all 20 valves. The total full power steam flow is 12,974,500 lbm/hr. Therefore, the total relieving capacity of the 20 valves is 116% of the total secondary steam flow at 100% rated power (3025 Mwt).

The existing and proposed Technical Specifications ensure compliance with the ASME Code requirement on steam generators having 110% design steam flow rate relief capability. In order to satisfy the relief capability requirement during plant operations with inoperable safety valves, the total steam flow is reduced by decreasing the power level. The reduction in power level is ensured by reducing the power range neutron flux high setpoint.

The Westinghouse Standard Technical Specifications provide a formula for determining the required reductions in power range neutron flux high setpoint. The reactor trip setpoints are derived on the following basis:

$$SP = \frac{(X) - (Y) (V)}{X} \times (109)$$

Where:

- SP = Reduced reactor trip setpoint in percent of RATED THERMAL POWER  
V = Maximum number of inoperable safety valves per steam line  
(109) = Power Range Neutron Flux-High Trip Setpoint for (4) loop operation  
X = Total relieving capacity of all safety valves per steam line (3,777,000 lbs/hr.)  
Y = Maximum relieving capacity of any one safety valves (823,000 lbs/hr).

The calculated reductions in power range neutron flux high setpoint for a specified number of inoperable safety valves are provided in Technical Specification Table 3.4-1. The reductions are based on the conservative assumption that each safety valve has a relief capacity equivalent to the maximum relief capacity. Therefore, the calculated setpoint reductions are not dependent upon which safety valves are inoperable. The reductions in the setpoints ensure that the requirement for relief capability of 110% of design steam flow rate will not be violated.

The proposed provisions for the allowable out of service time for the inoperable safety valves, the allowable power range neutron flux high trip setpoint reduction time, and the shutdown times are consistent with the applicable Westinghouse Standard Technical Specifications Action Statement.

The proposed Technical Specifications will reduce the thermal cycling of plant equipment by no longer going to hot shutdown because of inoperable safety valves.

### III. No Significant Hazards Evaluation

- 1) Does the proposed license amendment involve a significant increase in the probability or consequences of an accident previously evaluated.

#### Response

Plant operations with inoperable main steam safety valves will not involve a significant increase in the probability of an accident previously evaluated.

The ASME Code requires that the steam generators have the capability to remove 110% of the design steam flow rate. The Loss of External Electrical Load Transient poses the greatest challenge to the main steam line safety valves. The worst case Loss of Load Transient analyzed in the FSAR results in the relief of 69% of the steam flow at 100% rated power. The reduction in power level compensates for the reduction in steam relief capability with inoperable main steam safety valves. The ASME relief capability requirements are satisfied by reducing the power range neutron flux high setpoint per Technical Specification Table 3.4-1. The proposed license amendment does not involve a significant increase in the consequences of an accident previously evaluated.

- 2) Does the proposed license amendment create the possibility of a new or different kind of accident from an accident previously evaluated?

Response

The proposed amendment involves a reduction in operating power level in order to compensate for a reduction in steam relief capability posed by inoperable safety valves. Plant operations at a reduced power level does not create the possibility of a new or different kind of accident from an accident previously evaluated. The transients analyzed in the FSAR bound plant operations at a reduced power level.

- 3) Does the proposed amendment involve a significant reduction in a margin of safety?

Response

As the reduction in power dictated by Table 3.4-1 compensates for the reduction in relief capability posed by the inoperable safety valves, the margin of safety is maintained. Therefore, the proposed amendment does not involve a reduction in a margin of safety.

IV. IMPACT OF CHANGE

This change will not impact the following:

- ALARA Program
- Fire Protection Program
- Emergency Plan
- FSAR or SER Conclusions
- Overall Plant Operations

V. CONCLUSION

This change: a) will not increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report; b) will not increase the possibility for an accident or malfunction of a different type than evaluated previously in the Safety Analysis Report; c) will not reduce the margin of safety as defined in the basis for any Technical Specification; d) does not constitute an unreviewed safety question as defined in 10 CFR 50.59; e) involves no significant hazards considerations as defined in 10 CFR 50.92.

VI. REFERENCES

- a) IP-3 FSAR
- b) IP-3 SER
- c) Westinghouse Standard Technical Specifications,  
NUREG-0452.
- d) Indian Point 3 Systems Description