ATTACHMENT I

PROPOSED TECHNICAL SPECIFICATIONS

CHANGE

RELATED TO

AUXILIARY FEEDWATER SYSTEM

(APPENDIX A)

POWER AUTHORITY OF THE STATE OF NEW YORK
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
JANUARY 4, 1980

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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 operation is necessary 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 out of three auxiliary feedwater pumps must be operable.

(3) A minimum of 360,000 gallons of water in the condensate storage tank.

(4) System piping and valves 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) Two steam generators capable of performing their heat transfer function.

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(7) City water system piping and valves directly associated with providing backup supply to the auxiliary feedwater pumps are operable.

B. If during power operations any of the conditions of 3.4.A above, except Item (2), cannot be met within 48 hours, the operator shall start to shutdown and cool the reactor below 350°F using normal operating procedures. For Item (2) the operator shall shutdown (K_{eff} <0.99) and cool the reactor below 350°F within 12 hours if:

(a) only 2 out of 3 pumps are operable and the third pump is not restored to operable status within 7 days, or

(b) only 1 out of 3 pumps is operable and a second pump is not restored to operable status within 48 hours.

C. The gross turbine-generator electrical output at all times shall be within the limitations of Figure 3.4-1 or Figure 3.4-2 for the applicable conditions of turbine overspeed setpoint, number of operable low pressure steam dump lines, and condenser backpressure as noted thereon.

Basis

A reactor shutdown from power requires removal of core decay heat. Immediate decay heat removal requirements are normally satisfied by the steam bypass to the condensers. Thereafter, core decay heat can be continuously dissipated via the steam bypass to the condenser as feedwater in the steam generator is converted to steam by heat absorption. Normally, the capability to feed the steam generators is provided by operation of the turbine cycle feedwater system. The twenty main steam safety valves have a total combined rated capability of 15,108,000 lbs/hr. The total full power steam flow is 12,974,500 lbs/hr, therefore twenty (20) main steam safety valves will be able to relieve the total steam flow if necessary.

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In the unlikely event of complete loss of electrical power to the station, decay heat removal would continue to be assured by the availability of either the steam-driven auxiliary feedwater pump or one of the two motor-driven auxiliary steam generator feedwater pumps, and steam discharge to the atmosphere via the main steam safety valves and atmospheric relief valves. One motor-driven auxiliary feedwater pump can supply sufficient feedwater for removal of decay heat from the plant. The minimum amount of water in the condensate storage tank is the amount needed for 24 hours at hot shutdown. When the condensate storage supply is exhausted, city water will be used.

Two steam generators capable of performing their heat transfer function will provide sufficient heat removal capability to remove core decay heat after a reactor shutdown.

The limitations placed on turbine-generator electrical output due to conditions of turbine overspeed setpoint, number of operable steam dump lines, and condenser back pressure are established to assure that turbine overspeed (during conditions of loss of plant load) will be within the design overspeed value considered in the turbine missile analysis.[2] In the preparation of Figures 3.4-1 and 3.4-2, the specified number of operable L.P. steam dump lines is shown as one (1) greater than the minimum number required to act during a plant trip. The limitations on electrical output, as indicated in Figures 3.4-1 and 3.4-2, thus consider the required performance of the L.P. Steam Dump System in the event of a single failure for any given number of operable dump lines.

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ATTACHMENT II

SAFETY EVALUATION

RELATED TO

AUXILIARY FEEDWATER SYSTEM

POWER AUTHORITY OF THE STATE OF NEW YORK
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Section I - Description of Modification

The operating limitation for the Steam and Power Conversion System is being changed to require that all three auxiliary feedwater (AFW) pumps be operable during power operations and that the operator shall shutdown (K_{eff} <0.99) and cool the reactor below 350°F within 12 hours if: (a) only 2 out of 3 pumps are operable and the third pump is not restored to operable status within 7 days, or (b) only 1 out of 3 pumps is operable and a second pump is not restored to operable status within 48 hours. (Presently only two out of three AFW pumps are required to be operable during power operations and if this condition is not met, 48 hours are allowed before shutdown to 350°F is started).

Section II - Purpose of Modification

The purpose of this modification is to increase the predicted AFWS reliability by eliminating the possibility that one train will be out of service indefinitely.

Section III - Impact of the Change

The requirement of having all three AFWS pumps operable during power operations will not alter the conclusion reached in the FSAR and SER accident analysis.

Section IV - Implementation of the Modification

The modification as proposed will not impact the ALARA or Fire Protection Program at IP3.

Section V - Conclusion

The incorporation of this modification: 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 any evaluated previously in the Safety Analysis Report; and c) will not reduce the margin of safety as defined in the basis for any Technical Specification.

Section VI - References

(a) IP3 FSAR

(b) IP3 SER