ATTACHMENT I TO IPN-90-028

PROPOSED TECHNICAL SPECIFICATION CHANGES

RELATED TO

HIGH STEAM FLOW SAFETY INJECTION CIRCUITRY

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

TABLE 3.5-3 (Sheet 1 of 4)

INSTRUMENTATION OPERATING CONDITION FOR ENGINEERED SAFETY FEATURES					
NO. FUNCTIONAL UNIT	1 NO. OF CHANNELS	2 NO. OF CHANNELS TO TRIP	3 MIN. NUMBER OF OPERABLE CHANNELS	4 MIN. DEGREE OF REDUNDANCY	5 OPERATOR ACTION IF CONDITIONS OF COL. 3 OR 4 CANNOT BE MET *****
1. SAFETY INJECTION					
a. Manual	2	1	1	0	Cold Shutdown
b. High Containment Pressure (Hi Level)	3	2	2	1	Cold Shutdown
c. High Differential Pressure Between Steam Lines	3/steam line	2/steam line	2/steam line	1/steam line	Cold Shutdown
d. Pressurizer Low Pressure*	3	2	2	1	Cold Shutdown
e. High Steam Flow in 2/4 Steam Lines Coincident with Low T_{avg} or Low Steam Line Pressure	2/steam line	1/2 in any 2 steam lines	1/steam line in each of 3 steam lines	1/steam line in each of 3 steam lines	Cold Shutdown or main steam isolation valves closed
	4 T_{avg} Signals	2	3	2	
	4 Pressure Signals	2	3	2	
f. Pressurizer Low Pressure and (Automatic Unblock)	3	2	2****	1****	Cold Shutdown

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TABLE 3.5-3 (Sheet 2 of 4)

	1	2	3	4	5
2. CONTAINMENT SPRAY					
a. Manual	2	2	2	0***	Cold Shutdown
b. High Containment Pressure (Hi Hi Level)	2 sets of 3	2 of 3 in each set	2 per set	1/set	Cold Shutdown

* Permissible to bypass if reactor coolant pressure less than 2000 psig.

*** Must actuate 2 switches simultaneously.

**** The minimum Number of Operable Channels and the Minimum Degree of Redundancy may be reduced to zero if the SI bypass is in the unblocked position.

*****If the condition of Column 3 or 4 cannot be met, the reactor shall be placed in the hot shutdown condition, utilizing normal operating procedures, within 4 hours of the occurrence. If the conditions are not mer within 24 hours of the occurrence, the reactor shall be placed in the cold shutdown condition, or the alternate condition, if applicable, within an additional 24 hours.

TABLE 3.5-3 (Sheet 3 of 4)

FUNCTIONAL UNIT	1	2	3	4	5
3. AUXILIARY FEEDWATER					
a. Stm. Gen. Water Level-Low-Low					
i. Start Motor Driven Pumps	3/stm. gen.	2 in any stm. gen.	2. chan. in each stm. gen.	1	Reduce system temperature such that T $\leq$350^{o}F
ii. Start Turbine-Driven Pump	3/stm. gen.	2/3 in each of two stm. gen.	2 chan. in each stm. gen.	1	T $\leq$ 350^{o}F
b. S.I. Start Motor-Driven Pumps	(All	safety	injection	initiating	functions and requirements)
c. Station Blackout Start Turbine-Driven Pump	2	1	1	0	T $\leq$ 350^{o}F
d. Trip of Main Feedwater Pumps start Motor-Driven Pumps	2	1	1	0	Hot Shutdown
4. LOSS OF POWER					
a. 480v Bus Undervoltage Relay	2/bus	1/bus	1/bus	0	See Note 1
b. 480v Bus Degraded Voltage Relay	2/bus	2/bus	2/bus (See Note 2)	0	See Note 1
5. OVERPRESSURE PROTECTION SYSTEM (OPS)	3	2	2	1	******

ATTACHMENT II TO IPN-90-028

SAFETY EVALUATION

RELATED TO

HIGH STEAM FLOW SAFETY INJECTION CIRCUITRY

TECHNICAL SPECIFICATION CHANGES

NEW YORK POWER AUTHORITY
INDIAN POINT 3 NUCLEAR POWER PLANT
DOCKET NO. 50-286
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Section I - Description of Changes

This proposed amendment seeks to revise Section 3.5 (Table 3.5-3 item 1.e., columns 3 and 4, "SAFETY INJECTION - High Steam Flow in 2/4 Steam Lines Coincident with Low Tavg or Low Steam Line Pressure") of the Indian Point 3 Technical Specifications. The Technical Specifications are being revised to change the minimum number of operable channels of the high steam flow circuitry, from "2 channels in each of 3 steam lines" to "1/steam line in each of 3 steam lines", and the minimum degree of redundancy, from "2" to "1/steam line in each of 3 steam lines." These changes would make this specification consistent with standard methodology which permits the minimum number of operable channels to be one less than the number of installed channels. These changes would make this specification more consistent with Westinghouse Standard Technical Specifications.

Section II - Evaluation of Changes

The high steam flow circuitry is designed to mitigate the consequences of a steam break by closing all main steam stop valves. In the event of a steam line break, this action prevents continuous, uncontrolled steam release from more than one steam generator by isolating the steam lines on a high steam flow signal. Protection is afforded for breaks upstream or downstream of the main steam stop valves even when it is assumed that there is a single failure of the steam line isolation system. Each steam line is provided with two (2) redundant channels. Each channel contains a steam flow transmitter whose output is compared to a variable setting which is power dependent. The power level signal is derived from first stage turbine pressure. If steam flow is higher than the setting, in either channel in the steam line, the comparator bistable will trip providing one (1) of the inputs to a two (2) of four (4) coincidence logic.

The current wording for the minimum number of operable channels would require plant shutdown in the event that one channel became inoperable in each of two steam lines. This action is excessively prohibitive and does not provide any significant additional safety margin. The proposed changes would provide equivalent protection based upon the following:

The remaining operable channels provide the necessary protection for a steam break event, even when assuming any single failure.

The revised minimum degree of redundancy of "1/steam line in 3 steam lines" would require the tripping of failed channel bistables in a combination that would insure main steam line isolations for any steam break, even when assuming any single failure.

Performing unnecessary shutdowns incurs the risk of additional challenges to plant safety systems associated with changes in plant operating conditions, thus reducing the overall margin of safety.

In conclusion, the revisions being sought will provide equivalent protection for a main steam line break event, even when assuming any single failure.

Section III - No Significant Hazards Evaluation

Consistent with the requirements of 10 CFR 50.92, the enclosed application is judged to involve no significant hazards based on the following information:

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

Response

The proposed amendment does not involve an increase in the probability or consequences of a previously analyzed accident. Neither the probability nor the consequences of a steam line rupture event is affected by reducing the minimum number of operable channels to 1/ steam line in each of 3 steam lines and revising the minimum degree of redundancy to 1/steam line in each of 3 steam lines. Current administrative requirements plus the revised minimum degree of redundancy would ensure that the high steam flow bistables in failed channels are placed in the tripped condition. This action places the circuit in a safe condition since the output of this part of the circuit is satisfied. If a steam line rupture were to occur with the circuit in this configuration a steam line isolation and safety injection signal would be generated as intended.

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

Response

The reduction of the minimum number of operable channels to 1/steam line in each of 3 steam lines, and revision of the minimum degree of redundancy to 1/steam line in each of 3 steam lines, does not create the possibility of a new or different kind of accident from any accident previously evaluated. This amendment does not involve any change in plant hardware or configuration and the circuitry affected by this change is only used to mitigate the consequences of a steam break event. Therefore, a new and different kind of accident is not created.

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

Response

The proposed amendment does not involve a significant reduction in a margin of safety. By ensuring the bistables of failed channels are tripped, as required by this amendment, the system will always be configured such that it will mitigate the consequences of any steam line break, even when assuming any single failure. Therefore, this amendment does not involve a significant reduction in safety margin.

Based on the above, the Authority considers that reduction of the minimum number of operable channels and the change of the minimum degree of redundancy, for the high steam flow portion of the high steam flow in coincidence with low average temperature or low steam pressure safety injection circuitry, can be classified as not likely to involve significant hazard.

Section IV - Impact of Changes

These changes will not adversely impact the following:

ALARA Program
Security and Fire Protection Programs
Emergency Plan
FSAR or SER Conclusions
Overall Plant Operations and the Environment

Section V - Conclusions

The incorporation of these changes: 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; c) will not reduce the margin of safety as defined in the bases for any Technical Specification; d) does not constitute an unreviewed safety question; and e) involves no significant hazards considerations as defined in 10 CFR 50.92.

Section VI - References

a) IP-3 FSAR
b) IP-3 SER