

ATTACHMENT I
Proposed Technical Specifications Changes

NEW YORK POWER AUTHORITY
Indian Point 3 Nuclear Power Plant
Docket No. 50-286

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Feedwater Line Isolation

The feedwater lines are isolated upon actuation of the Safety Injection System in order to prevent excessive cooldown of the reactor coolant system. This mitigates the effect of an accident such as steam break which in itself causes excessive coolant temperature cooldown. Feedwater line isolation also reduces the consequences of a steam line break inside the containment, by stopping the entry of feedwater.

Containment Vent and Purge

The containment vent and purge valves are isolated upon actuation of the Safety Injection System, Containment Spray System, or upon receipt of a high containment radiation signal. In the event of an accident, this action prevents a continuous radioactive release via the Containment Vent and Purge System.

Setting Limits

1. The Hi-Level containment pressure limit is set at about 10% of containment design pressure. Initiation of Safety Injection protects against loss of coolant⁽²⁾ or steam line break⁽³⁾ accidents as discussed in the safety analysis.
2. The Hi-Hi Level containment pressure limit is set at about 50% of containment design pressure. Initiation of Containment Spray and Steam Line Isolation protects against large loss of coolant⁽²⁾ or steam line break accidents⁽³⁾ as discussed in the safety analysis.
3. The pressurizer low pressure limit is set substantially below system operating pressure limits. However, it is sufficiently high to protect against a loss of coolant accident as shown in the safety analysis⁽²⁾. The trip is bypassed below 2000 psig to prevent inadvertent actuation of the Engineered Safeguards when the reactor is shutdown.

C. Containment Temperature

The reactor shall not be taken above the cold shutdown condition unless the containment ambient temperature is greater than 50°F.

D. Containment Vent and Purge System

The reactor shall not be taken above the cold shutdown condition unless the containment vent isolation valves (PCV-1190, -1191, -1192) are closed or limited to a maximum valve opening angle of 60° (90° = full open) by mechanical means.

The reactor shall not be taken above the cold shutdown condition unless the containment purge supply and exhaust isolation valves (FCV-1170, -1171, -1172, -1173) are closed.

If the above conditions cannot be met within one hour, the reactor shall be in the hot shutdown condition within six hours and in the cold shutdown condition within the next 30 hours.

BASIS

The Reactor Coolant System conditions of cold shutdown assure that no steam will be formed and hence there would be no pressure buildup in the containment if a Reactor Coolant System rupture were to occur.

The shutdown margins are selected on the type of activities that are being carried out. The 10% $\Delta k/k$ shutdown margin when the head is off precludes criticality under any circumstances, even though fuel is being moved. When the reactor head is not to be removed, the specified cold shutdown margin of 1% $\Delta k/k$ precludes criticality in any occurrence.

Regarding internal pressure limitations, the containment design pressure of 47 psig would not be exceeded if the internal pressure before a major loss-of-coolant accident were as much as 6.4 psig.⁽¹⁾ The containment can withstand an internal vacuum of 3 psig.⁽²⁾ The 2.0 psig vacuum specified as an operating limit avoids any difficulties with motor cooling.

The requirement of a 50°F minimum containment ambient temperature is to assure that the minimum service metal temperatures of the containment liner is well above the NDT + 30°F criterion for the linear material.⁽³⁾

Table 3.6-1 lists non-automatic valves that are designated as part of the containment isolation function.⁽⁴⁾ During periods of normal plant operations requiring containment integrity, valves on this Table will be open either continuously or intermittently depending on requirements of the particular protection, safeguards or essential service systems. Those valves to be open intermittently are under administrative control and are open only as long as necessary to perform their intended function. In all cases, however, the valves listed in Table 3.6-1 are closed during the post accident period in accordance with plant procedures and consistent with requirements of the related protection, safeguards, or essential service systems.

The opening angle of the containment vent isolation valves is being limited as an analysis demonstrates valve operability against accident containment pressures provided the valves are limited to a maximum opening angle of 60°. The containment purge supply and exhaust isolation valves are required to be closed during plant operation above cold shutdown.

REFERENCES

- (1) FSAR - Volume 7, Response to Question 14.6
- (2) FSAR - Appendix 5A, Section 3.1.8
- (3) FSAR - Section 5.1.1.1
- (4) FSAR - Section 5.2

Containment Vent and Purge SystemApplicability

This specification applies to the surveillance requirements of the containment vent and purge system during normal operations and when reactor fuel is anticipated to be moved before the reactor has been subcritical for at least 365 hours.

Objective

To verify the operability of the containment vent and purge system.

Specification

The following surveillance shall be performed as stated.

A. Isolation Valves

1. Each month verify that the containment purge supply and exhaust isolation valves are closed during operation above cold shutdown.
2. Each refueling verify that the mechanical stops on the containment vent isolation valve (PCV - 1190, - 1191, - 1192) actuator is limited to the valve opening angle to 60° (90° = full open).

B. HEPA Filters and Charcoal Absorbers

If fuel movement is to take place before the reactor has been subcritical for at least 365 hours, the containment vent and purge system shall be demonstrated operable as follows:

1. Within 18 months prior to fuel movement and (1) after each complete or partial replacement of a HEPA filter or charcoal adsorber bank within 18 months prior to fuel movement, or (2) after structural maintenance on the HEPA filter or charcoal adsorber housing within 18 months prior to fuel movement, which could effect system operation:
 - a. Verify that the charcoal adsorbers remove $\geq 99\%$ of halogenated hydrocarbon refrigerant test gas when they are tested in-place while operating the ventilation system at the operating flow $\pm 10\%$.
 - b. Verifying that the HEPA filter banks remove $\geq 99\%$ of the DOP when they are tested in-place while operating the ventilation system at the operating flow rate $\pm 10\%$.
2. Within 18 months prior to fuel movement and after every 720 hours of system operation, subject a representative sample of carbon from the charcoal adsorbers to a laboratory analysis and verify within 31 days a removal efficiency of $\geq 90\%$ for radioactive methyl iodine at an operating air flow velocity $\pm 20\%$ per test 5.b in Table 2 of Regulatory Guide 1.52, March 1978.

Basis

The containment purge supply and exhaust isolation valves are required to be closed during plant operation above cold shutdown. Containment purge supply or exhaust isolation valve closure may be verified by way of the position indication lights, the weld channel and penetration pressurization system or visual means. The maximum opening angle of the containment vent isolation valves is being limited as an analysis demonstrates valve operability against accident containment pressures provided the valves are limited to an opening angle of 60°.

The operability of the HEPA filter and charcoal absorber system and the resulting iodine removal capacity are consistent with accident analyses. The representative carbon sample will be two inches in diameter with a length equal to the thickness of the bed.

ATTACHMENT II
Safety Evaluation of Proposed Technical Specifications
Changes

NEW YORK POWER AUTHORITY
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I. Description of Change

This revision to the Indian Point 3 Technical Specifications seeks to revise Sections 3.5, 3.6 and 4.13 to limit the opening angle of the containment vent valves to 60° and to verify that the containment purge supply and exhaust isolation valves are closed.

II. Evaluation of Change

The proposed Technical Specifications changes are in response to the December 17, 1984 NRC letter, which transmitted the Safety Evaluation Report (SER) concerning containment venting and purging at Indian Point 3.

By letters dated May 19, 1983 and July 7, 1982, the Authority transmitted information demonstrating the ability of the purge and vent valves to function against accident containment pressures provided the valves are limited to an opening angle of 60°. Technical Specification 4.13 is being revised to reflect this limitation on the vent valves only. The limitation on the purge valves will be included in the Technical Specifications when the Authority addresses the issue of purging during normal operations. As the Authority is deferring the issue of containment purging at power, the containment purge supply and exhaust isolation valves will be closed during normal operations.

The Authority considers that the proposed changes can be classified as not likely to involve significant hazards considerations since the proposed changes constitute "an additional limitation, restriction, or control not presently included in the Technical Specifications...". (Example (ii), Federal Register, Vol. 48, No. 67 dated April 6, 1983, page 14870).

III. Impact of Change

This change will not impact the following:

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

IV. Conclusion

The incorporation of these modifications: 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 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.

V. References

- (a) IP-3 FSAR
- (b) IP-3 SER
- (c) Letter to S. A. Varga from J. P. Bayne dated May 19, 1983 entitled, "Containment Purge and Vent Valves".
- (d) Letter to S.A. Varga from J. P. Bayne dated July 7, 1982 entitled, "Purging and Venting of Containment".

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