ATTACHMENT I TO IPN-90-032

PROPOSED TECHNICAL SPECIFICATION CHANGES

RELATED TO

CONTAINMENT AIR LOCKS

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

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1.9.2 Instrument Channel Functional Test

Injection of a simulated signal into the channel to verify that it is operable, including alarm and/or trip initiating action.

1.9.3 Instrument Channel Calibration

Adjustment of channel output such that it responds, with acceptable range and accuracy, to know values of the parameter which the channel measures. Calibration shall encompass the entire channel, including alarm or trip, and shall be deemed to include the channel functional test.

1.9.4 Logic Channel Functional Test

The operation of relays or switch contacts, in all the combinations required, to produce the required output.

1.10 CONTAINMENT INTEGRITY

Containment integrity is defined to exist when:

1.10.1 All non-automatic containment isolation valves which are not required to be open during accident conditions, except those required to be open for normal plant operation or testing as identified in Table 3.6-1, are closed and blind flanges are installed where required.

1.10.2 The equipment door is properly closed.

1.10.3 Each containment air lock is in compliance with the requirements of Specification 3.6.E.

1.10.4 All automatic containment isolation valves are either operable or in the closed position, or isolated by a closed manual valve or flange that meets the same design criteria as the isolation valve.

3.6 CONTAINMENT SYSTEM

Applicability

Applies to the integrity of reactor containment.

Objective

To define the operating status of the reactor containment for plant operation.

Specification

A. Containment Integrity

1. The containment integrity (as defined in 1.10) shall not be violated unless the reactor is in the cold shutdown condition. However, those non-automatic valves listed in Table 3.6-1, may be opened if necessary for plant operation and only as long as necessary to perform the intended function.

2. The containment integrity shall not be violated when the reactor vessel head is removed unless the boron concentration is sufficient to maintain the shutdown margin equal to or greater than the requirements of specification 3.8.D.

3. If the containment integrity requirements are not met when the reactor is above cold shutdown, containment integrity shall be restored within one hour or the reactor shall be in the hot shutdown condition within six hours and in cold shutdown condition within the next 30 hours.

B. Internal Pressure

If the internal pressure exceeds 2.5 psig or the internal vacuum exceeds 2.0 psig, the condition shall be corrected or the reactor shutdown.

C. Containment Temperature

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

2. Containment ambient temperature shall not exceed 130°F when the reactor is above the cold shutdown condition. If the temperature is greater than 130°F, reduce the temperature to within the limit within 8 hours, or be in hot shutdown within the next 6 hours and in cold shutdown within the following 30 hours.

3. Containment ambient temperature as specified in 3.6.C.1 and 3.6.C.2 shall be the arithmetic average of temperatures measured at no fewer than 4 locations, at least once per 24 hours.

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.

E. Containment Air Locks

1. Each containment air lock shall be operable when:

   a. Both doors closed and in compliance with the requirements of Specification 4.4.D.2, except when the air lock is being used for normal entry and egress through containment, then at least one air lock door shall be closed, and

   b. An overall air lock leakage rate in compliance with the requirements of Specification 4.4.D.1.

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2. With one containment air lock door inoperable:

   a. Maintain at least the operable air lock door closed and either restore the inoperable air lock door to operable status within 24 hours or lock the operable air lock door closed;

   b. Operation may continue until performance of the next required overall air lock leakage test provided that the operable air lock door is verified to be locked closed at least once per 31 days;

   c. The reactor operating condition can be escalated while one containment air lock door is inoperable provided the action of sections E.2.a. and E.2.b. above have been satisfied.

   d. If the requirements of E.2.a. and E.2.b. above can not be met the reactor shall be in the hot shutdown condition within the next 6 hours and in the cold shutdown condition within the following 30 hours.

3. With the containment air lock inoperable, except as a result of an inoperable air lock door, maintain at least one air lock door closed; restore the inoperable air lock to operable status within 24 hours or be in at least the hot shutdown condition within the next 6 hours and in the cold shutdown condition within the following 30 hours.

BASIS

Containment integrity ensures that the release of radioactive materials from the containment atmosphere will be restricted to those leakage paths and leak rates assumed in the accident analyses. This restriction, in conjunction with the leakage rate limitation, will limit the site boundary radiation doses to within the limits of 10 CFR 100 during accident conditions.

The limitations on closure and leak rate for the containment air locks are required to meet the restriction on containment integrity and containment leak rate.

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 shutdown margin requirement of specification 3.8.D when the vessel head bolts are less than fully tensioned precludes criticality during refueling. 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 was as much as 6.7 psig. The containment design pressure would not be exceeded if the internal pressure before a main steam line break accident was as much as 4.58 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]

Limiting maximum containment ambient temperature will ensure that the peak accident containment pressure does not exceed the design limit of 47 psig during steamline break or loss of coolant accidents. Environmentally and seismically qualified RTDs mounted on the crane wall above the containment fan cooler units inlet are normally used for measuring containment ambient temperature. Portable temperature sensing equipment may also be used, provided the criteria of 3.6.C.3 are met.

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) WCAP - 12269 Rev. 1, "Containment Margin Improvement Analysis for Indian Point 3"
(2) FSAR - Appendix 5A, Section 3.1.8
(3) FSAR - Section 5.1.1.1
(4) FSAR - Section 5.2

C. Sensitive Leakage Rate

1. Test

A sensitive leakage rate test shall be conducted with the containment penetrations, weld channels, and certain double gasketed seals and isolation valve interspaces at a minimum pressure of 43 psig and with the containment building at atmospheric pressure.

2. Acceptance Criteria

The test shall be considered satisfactory if the leak rate for the containment penetrations, weld channel and other pressurized zones is equal to or less than 0.2% of the containment free volume per day.

3. Frequency

A sensitive leakage rate test shall be performed at a frequency of at least every other refueling but in no case at intervals greater than 3 years.

D. Air Lock Tests

1. The containment air locks shall be tested at a minimum pressure of 43 psig and at a frequency of every 6-months. The acceptance criteria is included in E.2a. The equipment hatch is to be leak rate tested after every reinsertion prior to requiring containment integrity.

2. Whenever containment integrity is required, within 72 hours following each closing, except when the air lock is being used for multiple entries, then at least once per 72 hours, verification shall be made of proper repressurization to at least 43 psig of the double-gasket air lock door seal.

ATTACHMENT II TO IPN-90-032

SAFETY EVALUATION

RELATED TO

CONTAINMENT AIR LOCKS

TECHNICAL SPECIFICATION CHANGES

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

Section I - Description of Changes

This application for amendment to the Indian Point 3 (IP3) Technical Specifications (TS) seeks to amend Section 1.10 (Definitions), Section 3.6 (Containment Integrity), and Section 4.4.D (Air Lock Tests). The Technical Specifications are being revised to amend the definitions, LCO, and surveillance for the containment air locks to more clearly reflect and be consistent with the requirements of Westinghouse Standard Technical Specifications (WSTS).

Section II - Evaluation of Changes

As a result of the Zion/Indian Point Task Action Plan, the NRC staff requested that IP3 revise either the definition of, or the LCO on, containment integrity to require both air lock doors to normally be closed unless being used for entry or egress, in order to make the IP3 specification as stringent as WSTS 3/4.6.1.3. The Authority chose to amend the definition and submitted it by NYPA letter, J.P. Bayne to S.A. Varga, dated September 29, 1980. Subsequent operating experience has revealed interpretation difficulties relative to this specification and those involving the Weld Channel and Penetration Pressurization system. These difficulties can best be avoided by incorporating the content of Westinghouse Standard Technical Specification 3/4.1.3 into the Indian Point 3 Technical Specifications.

Definition 1.10.3 will be revised to reflect the addition of LCO 3.6.E which states air lock operability requirements and the allowable action when one air lock door is inoperable. Specification 4.4.D.2 will be revised to identify the frequency of the test requirement.

The Authority believes the Technical Specification changes proposed will increase overall safety of Indian Point 3 by clearly identifying air lock operability and surveillance requirements and by allowing an adequate time period for most air lock repairs, thereby helping to avoid unnecessary plant shutdowns. Performing unnecessary shutdowns incurs the risk of additional challenges to safety systems associated with changes in the plant operating condition.

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 changes do not involve an increase in the probability of a previously-analyzed accident. Since this request seeks to incorporate the requirements of the equivalent Westinghouse Standard Technical Specifications which have been evaluated to provide adequate safety, and is applicable to IP3, operation of IP3 in accordance with this proposed licence amendment does not significantly increase 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 any accident previously evaluated?

Response:

Operation of Indian Point 3 in accordance with the proposed license amendment does not create the possibility of a new or different kind of accident from any previously evaluated.

No change is being made to the way the containment air locks provide plant protection. No new modes of plant operation are involved. Incorporating the requirement of the Westinghouse Standard Technical Specification for the containment air locks does not necessitate physical alteration of the plant or changes in plant operational limits.

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

Response:

Operation of Indian Point 3 in accordance with the proposed license amendment does not involve a significant reduction in a margin of safety.

The Westinghouse Standard Technical Specifications have been evaluated to provide an acceptable margin of safety, therefore amending the Indian Point 3 operating license to conform to the requirements of the WSTS insures a margin of safety that has already been evaluated to be acceptable.

As stated previously, implementation of the proposed change is expected to result in an overall increase in plant safety by clearly identifying containment air lock operability requirements and by helping to avoid unnecessary plant shutdowns. Performing unnecessary shutdowns incurs the risk of additional challenges to safety systems associated with changes in plant operating condition.

Section IV - Impact of Change

This change 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 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 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) IP3 FSAR
b) IP3 SER