

PORTLAND GENERAL ELECTRIC COMPANY
EUGENE WATER & ELECTRIC BOARD
AND
PACIFIC POWER & LIGHT COMPANY

TROJAN NUCLEAR PLANT

Operating License NPF-1
Docket 50-344
License Change Application 68

Licensee hereby requests an amendment to License NPF-1 to incorporate changes concerning Refueling Operations and Redundancy in Residual Heat Removal Capabilities.

PORTLAND GENERAL ELECTRIC COMPANY

By

B. D. Withers

Bart D. Withers
Vice President
Nuclear

Subscribed and sworn to before me this 24th day of October 1980.

Carole A. Hodgson

Notary Public of Oregon

My Commission Expires:

August 9, 1983

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LICENSE CHANGE APPLICATION 68

This License Change Application (LCA) incorporates several Technical Specification changes related to refueling operations and redundancies in residual heat removal capabilities. A description of each change is detailed below. Proposed Technical Specifications, including changes in the Index, are attached.

1. Restriction of Containment Purge Exhaust Fan Operation

Technical Specification 3.9.13 is proposed to be added. This specification will restrict operation of the Containment purge exhaust fans during periods of irradiated fuel movement inside Containment before 285 hr. following reactor shutdown ($K_{eff} < 0.99$). The basis for this specification is to ensure that resultant offsite doses in the event of a fuel-handling accident inside Containment are within the guidelines of 10 CFR 100. Should the requirements of this specification not be met, fuel movement must be suspended inside Containment. It must be determined that the Containment purge exhaust fans are not in operation or that more than 285 hr. have elapsed since reactor shutdown prior to initiating fuel movement inside Containment.

2. Reactor Vessel Water Level During Refueling

A change to Technical Specification 3.9.10 has been proposed to require a minimum of 23 ft. of water over the top of the reactor vessel flange versus the current requirement of 23 ft. of water over the top of seated fuel assemblies in the reactor pressure vessel. The Applicability, Action Statements, Surveillance Requirements and Bases for this specification remain unchanged.

3. Reactor Coolant System Heat Removal Capability

Technical Specification 3/4.4.1 currently encompasses reactor operational MODES 1 through 5. The proposed revisions to this Technical Specification follow NRC-recommended guidelines that separate the requirements for operational modes into individual Technical Specifications. These proposed revisions and additions are presented in the attachment and summarized below.

Technical Specification 3.4.4.1 would be changed to apply to MODES 1 and 2, retaining the provisions of Special Test Exception 3.10.5. Item b under "Below P-7" and the footnote concerning de-energizing all Reactor Coolant Pumps and Residual Heat Removal Pumps for u_1 to 1 hr. are not valid for MODES 1 and 2 and have been deleted. The proposed Technical Specification requires four reactor coolant loop operation above P-7 and at least two reactor coolant loop operation below P-7. The provisions for three-loop operation are retained but remain unusable in accordance with Item 3.C of Attachment 1 to the Operating License.

Technical Specification 3.4.1.2 is proposed to be added to the Operating License and applies to MODE 3 operation. This specification requires two reactor coolant loops to be OPERABLE, with

one reactor coolant loop to be in OPERATION. This satisfies redundancy requirements to meet single failure criteria. Additionally, specific Actions and Surveillance Requirements are proposed as recommended by the NRC. The ability to de-energize all reactor coolant pumps for up to 1 hr. under specific conditions is retained for MODE 3 operation.

Technical Specification 3.4.1.3 is proposed to be added to the Operating License and applies to MODE 4 and 5 operation. This specification requires two of the six cooling loops (four reactor coolant loops, two residual heat removal loops) to be OPERABLE, with one cooling loop in OPERATION. Specific Action and Surveillance Requirements are also proposed in addition to reactor coolant pump start limiting criteria that are consistent with the overpressure mitigating system requirements proposed in LCA 52. Surveillance Requirement 4.4.1.3.1 is contingent on the acceptance of Specification 4.0.5 proposed in LCA 64. Inoperability of either the normal or emergency power source for residual heat removal operation is acceptable. Additionally, the de-energizing of all reactor coolant pumps and residual heat removal pumps for up to 1 hr. under specific conditions is allowable.

Technical Specification 3.9.8.1 is proposed to replace previous Technical Specification 3.9.8 governing MODE 6 operation. This Technical Specification remains unchanged with the exception of Surveillance Requirement 4.9.8.1. The NRC-recommended surveillance period of once every 4 hr. (current Trojan surveillance is once per 24 hr.) is proposed to be once per 12 hr., which parallels similar requirements for MODES 3, 4, and 5.

Technical Specification 3.9.8.2 is proposed to be added to the Operating License. This Technical Specification governs reactor low water level operation during MODE 6 and requires two independent residual heat removal loops to be OPERABLE when the water level above the top of the reactor vessel flange is less than 23 ft. Item 2 of this LCR also incorporates a change to this proposed Technical Specification and this is reflected in the previous discussion. Surveillance Requirement 4.9.8.2 is contingent on the acceptance of Specification 4.0.5 as proposed in LCA 64.

REASONS FOR CHANGE

This LCA incorporates several Technical Specification changes related to refueling operations and redundancy in residual heat removal capabilities. The reasons for each change are described below.

1. Restriction of Containment Purge Exhaust Fan Operation

This Technical Specification change is in response to the NRC letter dated June 17, 1980 which transmitted the NRC's safety evaluation of a Fuel-Handling Accident Inside Containment. In the safety evaluation, the NRC concluded that one of the following three Plant modifications and/or Technical Specification changes should be incorporated at Trojan:

- a. Install charcoal filters on the Containment purge/exhaust system;
- b. Establish a (longer) minimum fuel decay time between shutdown and irradiated fuel movement of 285 hr.; or
- c. Conduct spent fuel movement during first 285 hr. after shutdown with Containment purge exhaust fans not in operation (applicable only during actual spent fuel movement).

By letter dated August 8, 1980, PGE notified the NRC that PGE did not agree with the overconservative assumptions and models used in the safety evaluation and reserved the right to provide additional information at a later date. However, until such time that PGE submits this additional information, PGE will restrict use of Containment purge exhaust fans during fuel movement as stated above in Option c. This LCA modifies the Trojan Technical Specifications to incorporate the requirements of Option c.

2. Reactor Vessel Water Level During Refueling

This Technical Specification change is in response to the NRC letter dated August 15, 1980, which identified an error in the Westinghouse Standard Technical Specification 3.9.10. Currently, Technical Specification 3.9.10 requires a minimum of 23 ft. of water to be maintained over the seated fuel assemblies in the reactor during MODE 6. Technical Specification 3.9.10 should require 23 ft. of water to be maintained over the reactor vessel flange during MODE 6 in order to preclude the possibility of exposing fuel assemblies or control rods during transfer.

As requested in the NRC letter, PGE Technical Specifications and procedures were reviewed for necessary changes. It was determined that Plant procedures adequately ensure that fuel assemblies or control rods will not be exposed during transfer; however, Technical Specification 3.9.10 does require an amendment. This LCA modifies Technical Specification 3.9.10 to incorporate the above concern.

3. Reactor Coolant System Heat Removal Capability

These Technical Specification changes are in response to the NRC letter dated June 11, 1980 that requested all operating Pressurized Water Reactor owners to review and submit amended Technical Specifications concerning the decay heat removal capability for all modes of Plant operation. The primary concern is to have redundant residual heat removal capability available in order to meet single failure criteria. This LCA modifies the Trojan Technical Specifications to address this concern.

SAFETY/ENVIRONMENTAL EVALUATION

This LCA incorporates several Technical Specification changes related to refueling operations and redundancy in residual heat removal capabilities. The safety/environmental evaluation for each is described below.

1. Restriction of Containment Purge Exhaust Fan Operation

The proposed addition of this Technical Specification has been reviewed and determined to not constitute an unreviewed safety question. No new accidents are created and the probability of occurrence of accidents already considered remains unchanged. Since this additional specification acts to further restrict operation of the Containment purge exhaust fans, the potential for and/or consequences of a release of radioactivity to the environment from any type of accident inside Containment is reduced or remains the same.

The proposed change reflects the NRC's safety evaluation conclusion that the Containment purge exhaust fan operation be restricted during actual fuel movement for 285 hr. following reactor shutdown to ensure offsite doses following a fuel handling accident inside Containment are appropriately within the guidelines of 10 CFR 100.

2. Reactor Vessel Water Level

This proposed Technical Specification change has been reviewed and determined to not constitute an unreviewed safety question. This change reflects the original intent of the Technical Specification which is to maintain sufficient water level in the refueling cavity to prevent exposure of the fuel being transferred to or from the reactor pressure vessel. Since Plant procedures enforced this original intent even though the Technical Specifications did not, the potential for and/or consequences of a fuel handling accident is reduced or remains the same. No new accidents are created and the probability of those already considered remains unchanged.

3. Reactor Coolant System Heat Removal Capability

These proposed Technical Specification changes/additions for decay heat removal capability are addressed individually below. A discussion of NRC recommendations that differ from the PGE positions taken in proposing these Technical Specifications follows.

The proposed changes for Technical Specification 3.4.1.1 have been reviewed and determined to not constitute an unreviewed safety question. The proposed changes reflect the NRC's recommendation to separate the requirements for heat removal into distinct categories based on operational modes. Effectively, these changes do not alter the current Trojan operational requirements for MODES 1 and 2. Therefore, the potential for and/or consequences of an accident remains unchanged, no new accidents are created and the probability of occurrence of those considered remains unchanged.

Proposed Technical Specification 3.4.1.2 has been reviewed and determined to not constitute an unreviewed safety question. This Technical Specification more clearly defines the operational requirements during MODE 3 and meets the NRC recommendation for having redundant decay heat removal systems operable. New Surveillance Requirements for more frequent verification of required operable decay heat removal systems and defined Actions reflect the NRC position to ensure Plant safety. Since this additional Technical Specification acts to further improve Plant operational safety during MODE 3 operation, the potential for and/or consequences of a loss of decay heat removal capability accident is reduced or remains the same. No new accidents are created and the probability of occurrence of accidents already considered remains unchanged.

Proposed Technical Specification 3.4.1.3, applying to MODES 4 and 5 operation, has been reviewed and determined to not constitute an unreviewed safety question. This Technical Specification similarly reflects the intent of the NRC recommendation by requiring redundant decay heat removal equipment to be operable, and therefore the potential for and/or consequences of a loss of decay heat removal accident is reduced or remains unchanged. Additional surveillance requirements also support the NRC position of ensuring/improving Plant safety. This proposed Technical Specification does not create any new accidents and the probability of occurrence of those already considered remains unchanged.

Proposed Technical Specification 3.9.8.1 has been reviewed and determined to not constitute an unreviewed safety question. This Technical Specification supersedes previous Technical Specification 3.9.8 applying to MODE 6 operation and is unchanged with the exception of the requirement for increased frequency of surveillance. Consequently, the potential for and/or consequences of a loss of residual heat removal capability accident is reduced or remains unchanged, no new accidents are created, and the probability of occurrence of accidents already considered remains unchanged.

Proposed Technical Specification 3.9.8.2 has been reviewed and determined to not constitute an unreviewed safety question. The addition of this Technical Specification reflects the NRC intent for redundant decay heat removal capability during MODE 6 operation when the refueling cavity water level is less than 23 ft. above the reactor pressure vessel flange. Since this Technical Specification change provides added assurance that residual heat removal capability is available with the reactor head removed and less than 23 ft. of water above the reactor pressure vessel, the potential for and/or consequences of accidents already considered remains the same or is reduced. No new accidents are created.

The NRC recommendation that calls for going to MODE 3 operation after experiencing a loss of one reactor coolant loop while in MODE 1 or MODE 2 operation is not included in proposed Technical Specification 3.4.1.1. The Trojan reactor trip system, as described in Bases B 3/4.4.1 (see Attachment D) addresses this concern for consequent power reduction, and combined with the limitations defined in Item 3.C of Appendix 1 of the Operating License, it is PGE's position that this recommendation is unnecessary and the proposed Technical Specification is adequate.

NRC surveillance recommendations for MODES 1 and 2 include monitoring of reactor coolant loop operation on a 12-hr. interval. PGE feels this is unnecessary since monitoring during power operation is done continuously and adequate protection is provided by Plant design. Hence, this recommendation is ambiguous and unnecessary.

The purpose for the NRC recommendation to increase surveillance frequency during MODE 6 operation is recognized by PGE. However, PGE feels that a 4-hr. surveillance frequency is excessive. PGE proposes that the frequency of surveillance be reduced from the current 24-hr. interval to a 12-hr. interval. This frequency would then be consistent with proposed Surveillance Requirements for MODES 3, 4 and 5 as recommended by the NRC.

BASES FOR DETERMINATION OF AMENDMENT CLASS

This LCA will result in a license amendment for which the acceptability of the issue is clearly defined by an NRC position and would not involve a significant hazards consideration. Thus, this would be a Class III amendment.

SCHEDULE REQUIREMENTS

This LCA is to be submitted in response to the NRC letter dated June 11, 1980.

It is requested that the NRC act upon these changes promptly.