Marked Up Technical Specification Pages

- Technical Specification 2.1.1.2 Safety Limits (page 2.0-1) is modified to change the single loop MCPR limit for ABB fuel from 1.08 to 1.09 and to limit the use of the MCPR limits for the ATRIUM-9 fuel to Cycle 14:

  2.1.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10% rated core flow:

  The MCPR for ATRIUM-9X fuel shall be ≥ 1.13 for two recirculation loop operation or ≥ 1.14 for single recirculation loop operation. For ABB fuel, the MCPR shall be ≥ 1.07 for two recirculation loop operation or ≥ 1.09 for single recirculation loop operation. The MCPR limits for the ATRIUM-9X fuel are applicable to Cycle 14.

- (Information Only) BASES Section 2.1.1.2 MCPR (pages B 2.0-3) is changed to acknowledge the use of an interim additive constant uncertainty for the SPC ATRIUM-9X fuel for Cycle 14 by modifying the following sentence (see attached page markup):

  Reference 7 describes the interim use of increased ANFB additive constant uncertainty for the SPC ATRIUM-9X fuel during Cycle 14.

2.0 SAFETY LIMITS (SLs)

2.1 SLs

2.1.1 Reactor Core SLs

2.1.1.1 With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow:

THERMAL POWER shall be ≤ 25% RTP.

2.1.1.2 With the reactor steam dome pressure ≥ 785 psig and core flow ≥ 10% rated core flow:

The MCPR for ATRIUM-9X fuel shall be ≥ 1.13 for two recirculation loop operation or ≥ 1.14 for single recirculation loop operation. For all other fuel, the MCPR shall be ≥ 1.07 for two recirculation loop operation or ≥ 1.08 for single recirculation loop operation. The MCPR limits for the ATRIUM-9X fuel are applicable to Cycle 13 only.

1.09
14

2.1.1.3 Reactor vessel water level shall be greater than the top of active irradiated fuel.

2.1.2 Reactor Coolant System Pressure SL

Reactor steam dome pressure shall be ≤ 1325 psig.

2.2 SL Violations

With any SL violation, the following actions shall be completed within 2 hours:

2.2.1 Restore compliance with all SLs; and

2.2.2 Insert all insertable control rods.

BASES

APPLICABLE SAFETY ANALYSES

2.1.1.1 Fuel Cladding Integrity (continued)

bundle flow for all fuel assemblies that have a relatively high power and potentially can approach a critical heat flux condition. The minimum bundle flow is > 28×10^3 lb/hr. The coolant minimum bundle flow and maximum flow area are such that the mass flux is > 0.25×10^6 lb/hr-ft^2. Full scale critical power tests taken at pressures down to 14.7 psia indicate that the fuel assembly critical power at 0.25×10^6 lb/hr-ft^2 is approximately 3.35 MWt. At 25% RTP, a bundle power of approximately 3.35 Mwt corresponds to a bundle radial peaking factor of > 2.9, which is significantly higher than the expected peaking factor. Thus, a THERMAL POWER limit of 25% RTP for reactor pressures < 785 psig is conservative.

2.1.1.2 MCPR

The MCPR SL ensures sufficient conservatism in the operating MCPR limit that, in the event of an AOO from the limiting condition of operation, at least 99.9% of the fuel rods in the core would be expected to avoid boiling transition. The margin between calculated boiling transition (i.e., MCPR = 1.00) and the MCPR SL is based on a detailed statistical procedure that considers the uncertainties in monitoring the core operating state. One specific uncertainty included in the SL is the uncertainty inherent in the critical power correlations. Reference 7 describes the interim use of increased ANFB additive constant uncertainty for the SPC ATRIUM-9X fuel during Cycle ~~13~~ 14. Reference 4 describes the methodology used in determining the MCPR SL for Siemens Power Corporation fuel. Reference 5 describes the methodology used in determining the MCPR SL for ABB CENO fuel.

The critical power correlations are based on a significant body of practical test data, providing a high degree of assurance that the critical power, as evaluated by the correlation, is within a small percentage of the actual critical power. As long as the core pressure and flow are within the range of validity of the critical power correlations, the assumed reactor conditions used in defining the SL introduce conservatism into the limit because bounding high radial power factors and bounding flat

(continued)

Evaluation of Significant Hazards Considerations

Summary of Proposed Change:

The Cycle 14 WNP-2 MCPR safety limits for the ATRIUM-9X fuel are based on the continued use of a change implemented for Cycle 13 (Reference 6) which increased the limits from 1.07 to 1.13 for two loop operation and from 1.08 to 1.14 for single loop operation. This change was based on conservative calculations by SPC (Reference 3) using an interim ATRIUM-9X additive constant uncertainty (Reference 5). These calculations are based on a larger pool of data than previous calculations (Reference 1). Also, ABB calculated single loop MCPR limit about 0.006 greater for Cycle 14 than was calculated for Cycle 13 resulting in an increase from 1.08 to 1.09 for the single loop MCPR limit (Reference 7).

No significant Hazards Determination:

Washington Public Power Supply System has evaluated the proposed changes to the Technical Specifications using the criteria established in 10CFR50.92(c) and has determined that they do not represent a significant hazards consideration as described below.

The operation of WNP-2 in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The probability of an evaluated accident is derived from the probabilities of the individual precursors to that accident. The consequences of an evaluated accident are determined by the operability of plant systems designed to mitigate those consequences. Limits have been established consistent with NRC approved methods to ensure that fuel performance during normal, transient, and accident conditions is acceptable. The proposed Technical Specifications amendment continues the use of conservatively established ATRIUM-9X MCPR safety limits for WNP-2 such that the fuel is protected during normal operation as well as during plant transients or anticipated operational occurrences.

The probability of an evaluated accident is not increased by the continued use of the interim ATRIUM-9X MCPR safety limit of 1.13 (two loop operation) or 1.14 (single loop operation) or from changing the ABB single loop MCPR safety limit of 1.08 (Cycle 13) to 1.09 (Cycle 14). The changes do not require any physical plant modifications, physically affect any plant component, or entail changes in plant operation. The increase in single loop MCPR safety limit is attributed to a slightly more conservative assembly power distribution used in the Cycle 14 calculations following ABB standard methodology. While the Cycle 13 result is also conservative, the increase in Cycle 14 is intended to accommodate small cycle to cycle variability. Therefore, no individual precursors of an accident are affected.

This Technical Specification amendment proposes to continue using the interim MCPR safety limits for ATRIUM-9X fuel to protect the fuel during normal operation as well as during plant transients or anticipated operational occurrences. The method that is used to determine the ATRIUM-9X additive constant uncertainty is conservative, such that the resulting interim ATRIUM-9X MCPR safety limits are high enough to ensure that less than 0.1% of the fuel rods are expected to experience boiling transition if the limit is not violated. Using NRC approved methodology, ABB

has utilized these interim values as the basis for the Cycle 14 safety limit for the co-resident ATRIUM-9X. Operational limits have been established based on the interim ATRIUM-9X MCPR safety limits to ensure that the safety limits are not violated. This will ensure that the fuel design safety criteria (more than 99.9% of the fuel rods avoid transition boiling during normal operation as well as anticipated operational occurrences) is met. In addition, since the operability of plant systems designed to mitigate any consequences of accidents have not changed, the consequences of an accident previously evaluated are not expected to increase.

The operation of WNP-2 in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated:

Creation of the possibility of a new or different kind of accident would require the creation of one or more new precursors of that accident. New accident precursors may be created by modifications of the plant configuration, including changes in allowable modes of operation. This Technical Specification submittal does not involve any modifications of the plant configuration or allowable modes of operation. This Technical Specification change continues the use of added conservatism in the ATRIUM-9X MCPR safety limits which resulted from analytical changes and use of an expanded database. Also, ABB has calculated single loop MCPR safety limit about 0.006 greater in Cycle 14 than was used in Cycle 13. The increase in single loop MCPR safety limit is attributed to a slightly more conservative assembly power distribution used in the Cycle 14 calculations following ABB standard methodology. While the Cycle 13 result is also conservative, the increase in Cycle 14 is intended to accommodate small cycle to cycle variability. Therefore, no new precursors of an accident are created and no new or different kinds of accidents are created.

The operation of WNP-2 in accordance with the proposed amendment will not involve a significant reduction in the margin of safety for the following reasons:

The continued use of the interim MCPR safety limits provides a margin of safety by ensuring that less than 0.1% of the rods are expected to be in boiling transition if the MCPR limit is not violated. These interim limits are based on calculations by SPC using the revised ATRIUM-9X additive constant uncertainty. These calculations are based on a larger pool of data than previous calculations (527 data points versus 82 data points). Additionally, the revised additive constant uncertainty has been conservatively applied in the calculation of the interim ATRIUM-9X MCPR safety limits resulting in more restrictive limits.

The calculated single loop MCPR safety limit results are about 0.006 greater for Cycle 14 than they were for Cycle 13. The increase in single loop MCPR safety limit is attributed to a slightly more conservative assembly power distribution used in the Cycle 14 calculations following ABB standard methodology. Because the fuel design safety criteria of more than 99.9% of the fuel rods avoiding transition boiling during normal operation as well as anticipated operational occurrences is met, there is not a significant reduction in the margin of safety.

Environmental Assessment Applicability Review

Washington Public Power Supply System has evaluated the proposed amendment against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10CFR51.21. It has been determined that the proposed changes meet the criteria for categorical exclusion as provided for under 10CFR51.22(c)(9). This conclusion has been determined because the change requested does not pose a significant hazards considerations nor does it involve a significant increase in the amounts, or a significant change in the types of any effluent that may be released off-site. Additionally, this request does not involve a significant increase in individual or cumulative occupational radiation exposure.

Revised Technical Specification Pages

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