

REQUEST FOR ADDITIONAL INFORMATION FOR TSTF-568

CLARIFY APPLICABILITY OF BWR/4 TECHNICAL SPECIFICATION 3.6.2.5 and 3.6.3.2

INTRODUCTION

By letter dated December 19, 2017 (Reference 1), the Technical Specifications Task Force (TSTF) submitted TSTF-568 which proposed the following changes:

- The NUREG-1433, "Standard Technical Specifications General Electric BWR/4", TS 3.6.2.5, "Drywell-to-Suppression Chamber Differential Pressure," and TS 3.6.3.2, "Primary Containment Oxygen Concentration," will also be applicable to BWR/2 and BWR/3 plants.
- Clarify Applicability of TS 3.6.2.5 and TS 3.6.3.2
- The following notes to be added in Surveillance Requirements (SRs) 3.6.2.5.1 and 3.6.3.2.1:
 1. Not required to be met until 24 hours after THERMAL POWER > [15]% RTP [rated thermal power].
 2. Not required to be met 24 hours prior to THERMAL POWER being reduced \leq [15]% RTP.

REQUESTS FOR ADDITIONAL INFORMATION

In order for the NRC staff to complete its safety evaluation, response to the following requests for additional information (RAIs) is requested.

SRXB-RAI 1

Regulatory Basis: 10 CFR Part 50, Appendix A, GDC 4, as it relates to the environmental design, requires that structures, systems, and components (SSCs) important to safety be designed to accommodate the dynamic effects of discharging fluids that may result from equipment failures that may occur during normal plant operation or following a loss-of-coolant accident (LOCA)

Section 5 of Reference 1, fourth paragraph refers to General Electric Safety Communication (SC) 02-10 as a source document for the conclusion that operation below thermal power of 15 percent RTP with the differential pressure limit not met is acceptable for BWRs with **Mark II (Mark 2 stated in the TSTF)** containments and for BWRs with Mark I containments that have demonstrated acceptable loads with zero differential pressure.

- (a) Please provide SC 02-10.
- (b) The NRC staff noted that the basis for this drywell-to-suppression chamber control during normal plant operation for BWRs with Mark I containments is given in NUREG-0661 (Reference 2). For the BWRs with Mark II containments, provide the basis for drywell-to-suppression chamber differential pressure control in Mode 1, i.e., whether it is required or not required at thermal power of 100 percent RTP or at any lower percentage of RTP.

SRXB-RAI 2

Regulatory Basis: 10 CFR 50.44(b)(2) *Combustible gas control.* (i) All boiling water reactors with Mark I or Mark II type containments must have an inerted atmosphere.

In Section 5 of Reference 1 it is implied that Mark I and II containments for BWR/2, 3, 4, and 5 are not required to be inert at thermal power below 15 percent RTP because the potential for an event that generates significant hydrogen is low at this power level. In the proposed change, allowing oxygen concentration in the primary containment equal to or greater than 4 volume percent during [24] hours following startup or a scheduled shutdown would be not just restricted to startup or next scheduled shutdown, but would be allowed in Mode 1 at any time during the cycle when the thermal power is less than 15 percent RTP.

Specify all licensing basis events for BWR plants with Mark I and II containments that:

- (a) Could potentially occur at thermal power less than [15] percent RTP at any time during the cycle in Mode 1.
- (b) Cannot occur below 15 percent RTP at any time during the cycle in Mode 1 with justification;

From group (a), specify the events that would generate significant hydrogen with justification that an oxygen concentration less than 4 volume percent in the containment is not needed at less the 15 percent RTP.

REFERENCES

1. Letter from TSTF to NRC dated December 19, 2018, "Transmittal of TSTF-568, "Clarify Applicability of BWR/4 TS 3.6.2.5 and TS 3.6.3.2," (ADAMS Accession No. ML17353A437)
2. NUREG-0661, "Safety Evaluation Report Mark I Containment Long-term Program," July 1980