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U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
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11555 Rockville Pike
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South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information

Attached is the response to the NRC staff question included in Request for Additional Information (RAI) letter number 354 related to SRP Section 16 for the South Texas Project Units 3 & 4 Combined License Application. This submittal completes the response to this RAI letter. The attachment addresses the response to the RAI question listed below:

RAI 16-70

When a change to the COLA is required, it will be incorporated into the next routine revision of the COLA following NRC acceptance of the RAI response.

There are no commitments in this letter.

If you have any questions, please contact Scott Head at (361) 972-7136, or Bill Mookhoek at (361) 972-7274.

DOAI
NRC

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 8/11/2010



Mark McBurnett
Vice President, Oversight & Regulatory Affairs
South Texas Project Units 3 & 4

gsc

Attachment: RAI 16-70 Response

cc: w/o attachment except*
(paper copy)

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RAI 16-70**QUESTION:**

The NRC staff was informed by the applicant for STP Units 3 and 4 that the applicant interprets the ABWR Design Control Document (DCD) and the STP Units 3 and 4 Final Safety Analysis Report (FSAR) as allowing plant operation with one main steamline (MSL) isolated if a safety analysis and applicable procedures are developed to justify such operation. The applicant is requested to clarify the STP Units 3 and 4 FSAR and the bases for plant-specific TS 3.3.1.1 Required Action Q.1, TS 3.3.1.2 Required Action L.1, and TS 3.6.1.3 Required Action A.1 regarding plant operation with one MSL isolated. For example, prior to plant operation with one MSL isolated, an isolated-MSL-specific justification would need to be prepared that would evaluate the potential for significant degradation of components in the reactor and steam systems as a result of acoustic resonance in the active steamlines. Otherwise, the plant must be placed in cold shutdown. The applicant is also requested to propose a new standard departure from the ABWR DCD, including the generic TS bases, to accompany this change.

RESPONSE:

The following information will be added to the Bases for LCO 3.3.1.1, REQUIRED ACTIONS Q.1, Q.2.1 and Q.2.2; LCO 3.3.1.2, REQUIRED ACTIONS L.1, L.2.1 and L.2.2; and LCO 3.6.1.3, REQUIRED ACTIONS A.1 and A.2:

An analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems must be performed prior to continued operation with an isolated main steamline. Continued plant operation must remain within the bounds of this analysis.”

Standard departure STD DEP 16.3-105 is proposed to accommodate this change to the Technical Specification Bases.

Similar statements will also be added as supplemental information to COLA Part 2, Sections 7.2.1.1.4.3(3) “MSL Isolation Special Bypass” and 10.3.2.1 “General Description” of the Main Steam Supply System, which discuss the bypasses and operation with an idle main steamline.

These changes to COLA, Part 2, Tier 2, Sections 7.2.1.1.4.3(3), 10.3.2.1, 16B 3.3.1.1, 16B 3.3.1.2, 16B 3.6.1.3, and to COLA Part 7, Section 2.2 will be included in a future COLA revision.

COLA Part 2, Chapter 16 and Part 4, Section 3*SSLC Instrumentation**B 3.3.1.1***BASES**

ACTIONS
(continued)Q.1, Q.2.1, and Q.2.2

These Actions apply when the Required Actions of Conditions A, B, C, or D are not implemented within the specified Completion Times for isolation initiation Functions that are used to isolate several flow paths.

If the Function is not restored to OPERABLE status or placed in trip within the allowed Completion Time, the plant must be placed in a MODE or other specified condition in which the LCO does not apply. This is done by isolating the associated penetration flow paths, or by placing the plant in MODE 4. An analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems must be performed prior to continued operation with an isolated main steamline. Continued plant operation must remain within the bounds of this analysis.

Note that MSIV closures Functions are covered by this ACTION to permit closure of the MSIVs should the Condition occur while in MODE 3.

The allowed Completion Time of 12 hours for Action Q.1 is reasonable to permit the operator to identify the affected flow paths and isolate them. The Completion Times for Actions Q.2.1 and Q.2.2 are reasonable, based on operating experience, to achieve the specified conditions in an orderly manner and without challenging plant systems.

As noted at the beginning of the SRs, the SRs for each SSLC Sensor instrumentation Function are located in the SRs column of Table 3.3.1.1-1.

COLA Part 2, Chapter 16 and Part 4, Section 3*RPS and MSIV Actuation
B 3.3.1.2***BASES**

ACTIONS
(continued)L.1, L.2.1 and L.2.2

This Condition assures that appropriate actions are taken for ~~multiple~~ one or more inoperable MSIV Actuation Functions. If the specified Actions for Conditions A, B, C, D, E, F, or G are not implemented within the specified Completion Times the plant must be placed in a condition where the LCO does not apply. This is accomplished by isolating the affected penetration flow paths or placing the plant in MODE 4 where the LCO does not apply. An analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems must be performed prior to continued operation with an isolated main steamline. Continued plant operation must remain within the bounds of this analysis.

The Completion Times of 12 hours for isolating the penetration flow paths (Action L.1) provides sufficient time to identify the effected flow paths and perform the action. The Completion Times for achieving MODE 4 (Actions L.2.1 and L.2.2) are reasonable, based on operating experience, to reach MODE 4 in an orderly manner and without challenging plant systems.

COLA Part 2, Chapter 16 and Part 4, Section 3

PCIVs
B 3.6.1.3

BASES

ACTIONS

A.1 and A.2

With one or more penetration flow paths with one PCIV inoperable except for purge valve leakage not within limit, the affected penetration flow paths must be isolated. An analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems must be performed prior to continued operation with an isolated main steamline. Continued plant operation must remain within the bounds of this analysis. The method of isolation must include the use of at least one isolation barrier that cannot be adversely affected by a single active failure. Isolation barriers that meet this criterion are a closed and de-activated automatic valve, a closed manual valve, a blind flange, and a check valve with flow through the valve secured. For penetration isolated in accordance with Required Action A.1, the valve used to isolate the penetration should be the closest available valve to the primary containment. The Required Action must be completed within the 4 hour Completion Time (8 hours for main steamlines). The Completion Time of 4 hours is reasonable considering the time required to isolate the penetration and the relative importance of supporting primary containment OPERABILITY during MODES 1, 2, and 3. For main steamlines, an 8 hour Completion Time is allowed. The Completion Time of 8 hours for the main steamlines allows a period of time to restore the MSIVs to OPERABLE status given the fact that MSIV closure will result in isolation of the main steamline(s) and a potential for plant shutdown.

COLA Part 2, Chapter 7**7.2.1.1.4 RPS Equipment Design****7.2.1.1.4.3 RPS Logic***(3) MSL Isolation Special Bypass (Figure 7.2-4)*

A separate, manual, keylock switch associated with each of the four sensor channels provides means to bypass the MSL isolation trip output signal from the sensor channel to all four divisions of trip logic. This bypass permits continued plant operation while any one MSL is isolated without causing a half scram condition. The effect of the MSL isolation special bypass is to reduce the MSL isolation trip function in all four divisions of trip logic to a coincidence of two out of three sensor channel MSL isolation trips. Interlocks between the four divisions of trip logic prevent MSL isolation special bypass in any sensor channel when either a channel sensors bypass or a MSL isolation special bypass is present in any other sensor channel. Once a MSL isolation special bypass has been established in one sensor channel, the same bypass is inhibited in the other three channels. This bypass is inhibited in all three remaining channels when any channel sensor bypass exists.

The following standard supplement addresses continued operation with an isolated main steamline.

Continued operation with an isolated MSL is only permitted if an analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems has been performed. Continued plant operation must remain within the bounds of this analysis.

COLA Part 2, Chapter 10

10.3.2 Description

10.3.2.1 General Description

The Main Steam Supply System is illustrated in Figure 10.3-1. The system design data is provided in Table 10.3-1. The main steam piping consists of four 700A pipe size diameter lines from the outboard MSIVs to the main turbine stop valves. The four main steamlines are connected to a header upstream of the turbine stop valves to permit testing of these valves ~~the MSIVs~~ during plant operation with a minimum load reduction. This header arrangement is also provided to ensure that the turbine bypass and other main steam supplies are connected to operating steamlines and not to idle lines. The main steam process downstream of the turbine stop valves is illustrated in Figure 10.3-2.

The following standard supplement addresses continued operation with an isolated main steamline.

Continued operation with an isolated MSL is only permitted if an analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems has been performed. Continued plant operation must remain within the bounds of this analysis.

COLA Part 7**STD DEP 16.3-105, LCO 3.3.1.1, ACTIONS Q.1, Q.2.1 and Q.2.2; LCO 3.3.1.2, ACTIONS L.1, L.2.1 and L.2.2, and LCO 3.6.1.3, ACTIONS A.1 and A.2 – Operation with an Isolated Main Steamline**

LCO 3.3.1.1, REQUIRED ACTIONS Q.1, Q.2.1 and Q.2.2; LCO 3.3.1.2, REQUIRED ACTIONS L.1, L.2.1 and L.2.2; and LCO 3.6.1.3, REQUIRED ACTIONS A.1 and A.2 allow continued plant operation with one or more main steamlines isolated, with no apparent restriction on power level. With fewer than four main steamlines in operation, there is a possibility that the remaining main steam isolation valves (MSIVs) could be subjected to greater than 100% of their normal steam flow. 10 CFR 50 Part 21 (Reports 2002-21-0 and 2002-21-1) describe situations in which this has resulted in inadequate analysis of the effects of steam flow-induced vibration through the remaining open MSIVs. Therefore, the Bases for LCO 3.3.1.1, REQUIRED ACTIONS Q.1, Q.2.1 and Q.2.2; LCO 3.3.1.2, REQUIRED ACTIONS L.1, L.2.1 and L.2.2; and LCO 3.6.1.3, REQUIRED ACTIONS A.1 and A.2 have been revised to clarify that an analysis of the effects of flow-induced vibration on the remaining open MSIVs and other critical components in the reactor and steam systems is required prior to continued plant operation in MODES 1 and 2.