



South Texas Project Electric Generating Station 4000 Avenue F - Suite A Bay City, Texas 77414

U7-C-STP-NRC-100022
February 2, 2010
10 CFR 50.12
10 CFR 50.10

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Request for Exemption to Authorize
Installation of Crane Foundation Retaining Walls

References:

1. Letter, Edward D. Halpin to Document Control Desk, "Request for a Limited Work Authorization for Installation of Crane Foundation Retaining Walls," U7-C-STP-NRC-090176, dated November 16, 2009 (ML093230143)
2. Letter, Michael R. Johnson to Mark A. McBurnett, "South Texas Project Nuclear Power Plant Units 3 and 4 Request for a Limited Work Authorization for Installation of Crane Foundation Retaining Walls," dated January 8, 2010 (ML093350744)

STP Nuclear Operating Company (STPNOC) has submitted an application for combined licenses (COLs) for South Texas Project (STP) Units 3 and 4, and the NRC has docketed that application. In order to perform construction and installation activities, STPNOC will need to utilize construction cranes, which in turn will require the use of crane foundation retaining walls (CFRW). In Reference 1, STPNOC requested a Limited Work Authorization (LWA) to authorize installation of the CFRW prior to issuance of the COLs. The purpose of this letter is to withdraw that LWA request and instead request that the NRC issue an exemption in accordance with 10 CFR 50.12(b) that will authorize the installation of CFRW for Units 3 and 4 prior to COL issuance. STPNOC seeks prompt approval of the exemption request for CFRW installation to avoid unnecessary delay and expense.

In a public meeting with the NRC on September 30, 2009, STPNOC described the planned preconstruction activities for STP Units 3 and 4 and the process utilized by STPNOC to determine if these activities require prior NRC approval under 10 CFR 50.10, including the application of this process to the installation of the CFRW. The NRC indicated that, as part of an

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acceptance review of a request for an LWA for this activity, it would determine whether the CFRW installation for Units 3 and 4 requires NRC authorization. Subsequently, by letter dated November 16, 2009 (Reference 1), STPNOC submitted a request for an LWA, including an assessment of the application of 10 CFR 50.10 to the CFRW, a safety analysis which demonstrated that the CFRW installation has no adverse interactions with the structures, systems and components identified in 10 CFR 50.10(a)(1), and a formal request for an LWA. In addition, STPNOC stated that additional information needed to complete its request for an LWA would be submitted promptly if, during the acceptance review; the NRC provided notice that CFRW installation requires NRC authorization.

NRC notified STPNOC by letter dated January 8, 2010 (Reference 2) that installation of the CFRW meets the definition of construction in 10 CFR 50.10(a)(1). NRC also noted three regulatory options that pertain to the installation of the CFRW: file for an exemption from 10 CFR 50.10 pursuant to 10 CFR 50.12(b); continue with the LWA process; and delay construction of the CFRW until the COLs have been issued for Units 3 and 4.

STPNOC has considered these options and has decided to request an exemption from 10 CFR 50.10 pursuant to 10 CFR 50.12(b) for the limited purpose of allowing installation of the CFRW.

The attachment to this letter provides STPNOC's formal request for an exemption from 10 CFR 50.10 to authorize installation of the CFRW for STP Units 3 and 4, and provides the information identified by § 50.12, including the relevant factors identified in § 50.12(a), and the four factors to be balanced in accordance with § 50.12(b).

Preparation for installation of the CFRW is ongoing, with final installation activities planned to begin no later than November 1, 2010. Since CFRW installation is a critical path activity for the construction of STP Units 3 and 4, STPNOC requests that the NRC make a determination on this request as soon as practicable.

There are no commitments in this letter.

If there are any questions regarding this matter, please contact me at (361) 972-7206, or Scott Head at (361) 972-7136.

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

Executed on 2/2/2010



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

Attachment: Request for Exemption for Crane Foundation Retaining Wall Installation

cc: w/o attachment except*
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Attachment

**Request for Exemption for
Crane Foundation Retaining Wall Installation**

Request for Exemption for Crane Foundation Retaining Wall Installation

A. Introduction and Purpose

Introduction

STP Nuclear Operating Company (STPNOC) has submitted an application for combined licenses (COLs) for South Texas Project (STP) Units 3 and 4, and the NRC has docketed that application. Plans for construction and installation activities rely on the use of construction cranes that are founded at the site grade elevation. Crane foundation retaining walls (CFRW) are needed to allow the crane foundations to be located at grade adjacent to the excavation areas for Units 3 and 4. Installation of the CFRW must precede the excavation. Excavation as defined in 10 CFR 50.10(a)(2)(v) is not a construction activity.

Under 10 CFR 50.10(c) COL applicants may perform activities defined under § 50.10(a)(2) without prior approval by the U.S. Nuclear Regulatory Commission (NRC) and are prohibited from performing construction activities, as defined in § 50.10(a)(1), without prior NRC approval. Under § 50.12, an applicant may request an exemption permitting the conduct of activities prohibited by § 50.10 prior to the issuance of a COL.

Purpose

Pursuant to 10 CFR 50.12(b), STPNOC requests an exemption from 10 CFR 50.10 for the installation of the CFRW for STP Units 3 and 4, i.e., one CFRW per unit for a total of two CFRW.

B. Requested Exemption

STPNOC requests an exemption from 10 CFR 50.10(c), which states that no person may begin construction of a production or utilization facility on a site on which the facility is to be operated until that person has been issued either a construction permit, a COL, an early site permit or a limited work authorization (LWA). The requested exemption is limited to the CFRW installation, which consists of reinforced concrete retaining walls near the east edge of the excavation areas for the Reactor Building, Control Building, and Turbine Building for each unit. More detailed descriptions of the CFRW and installation activities are included in Subsections 2.5S.4.5.2.4 and 2.5S.4.5.4.4 of the Final Safety Analysis Report (FSAR) for STP Units 3 & 4 (Reference 2).

C. Information Required by 10 CFR 50.12(a)

Section 50.12(a) states that the NRC may grant exemptions which are authorized by law, will not present an undue risk to the public health and safety, and are consistent with the common defense and security. In addition, the NRC will not consider granting an exemption unless special circumstances are present.

1. The exemption is authorized by law.

Issuance of the exemption is authorized by law since this is the type of exemption contemplated by § 50.12(b), and would not conflict with any provision of the Atomic Energy Act, the National Environmental Policy Act (NEPA), or any other law.

2. The exemption does not present an undue risk to the public health and safety.

As described above, the exemption will authorize installation of CFRW for STP Units 3 & 4 before issuance of COLs or any LWA. The exemption will affect only the timing of installation of the CFRW, and will not affect any NRC safety requirements that apply to the design, construction and operation of STP Units 3 & 4. Similarly, the exemption also will not affect any NRC requirements that apply to the operation of STP Units 1 & 2. Consequently, the exemption will not present an undue risk to the public health and safety.

3. The exemption is consistent with the common defense and security.

Because the exemption will only affect the timing of installation of the CFRW, and will not authorize the possession of licensed material or affect any NRC security requirements that apply to STP Units 1, 2, 3 & 4, the exemption is consistent with the common defense and security.

4. Special circumstances are present.

10 CFR 50.12(a)(2) states that special circumstances are present whenever any of six listed circumstances exist. The following listed circumstances apply here:

- a. Section 50.12(a)(2)(ii) applies because application of the regulation to CFRW installation will not serve the purposes of Section 50.10(c).

The purpose of § 50.10(c) is to prohibit the initiation of onsite construction activities that have a reasonable nexus to safety before issuance of NRC approval. Application of § 50.10 to the installation of the CFRW will not serve that purpose because the CFRW do not have a reasonable nexus to safety.

Although the CFRW are permanent retaining walls, they do not affect the safety of STP Units 3 & 4 or have a reasonable nexus to safety. As described above, the

CFRW are non-safety related support facilities for construction. The location of the CFRW is designed to accommodate the crane function and to facilitate modular construction techniques. The CFRW are considered "permanent" only because they will be abandoned in-place after construction. The CFRW have no function during operation of STP Units 3 & 4, and will not affect the safety of any plant structures. This conclusion is supported by Attachment 2 to Reference 1, which reported the results of safety analyses that demonstrated that the CFRW have no adverse interactions with the structures, systems or components identified in 10 CFR 50.10(a)(1), including influence on the stability (static and dynamic) analyses.

The analyses of the CFRW reported in Reference 1 were based on the current analytical model for the structures at the STP site. It reflects the current status of design and includes some design changes to the Reactor and Control Buildings that are being handled in accordance with Interim Staff Guidance, Finalizing Licensing-basis Information, DC/COL-ISG-011. The results reported in Reference 1 have been reviewed in consideration of the design reported in the design certification and the COL application to ensure that the analyses appropriately reflect the effect of the CFRW on the safety-related structures. Fundamentally, the relatively small CFRW is inconsequential to the massive Reactor and Control Buildings and has no significant effect on those structures.

Consequently, the special circumstance described in 10 CFR 50.12(a)(2)(ii) applies to this exemption request.

- b. Section 50.12(a)(2)(iii) applies because compliance with § 50.10(c) would result in undue hardship or other costs that are significantly in excess of those contemplated when NRC adopted the most recent modifications to § 50.10.

If installation of the CFRW is not initiated until after receipt of the COLs the construction schedule for STP Unit 3 would be extended and commercial operation of Unit 3 would be delayed by approximately eight months. STPNOC understands that the procedural requirements for issuance of an LWA to allow the installation of the CFRW prior to COL issuance would have an adverse impact on the schedule for completion of NRC's review of the COL application, and would delay COL issuance. Although the amount of such delay is uncertain, any such delay would also delay commercial operation of Unit 3. The cost of any delay of the commercial operation of Unit 3 would depend upon a number of uncertain factors, but is expected to be substantial.

STPNOC has identified two potentially viable alternative construction approaches to avoid such delay; however, either approach would involve significant increased cost and technical uncertainties. The first alternative is to redesign the CFRW to make it practical to remove them prior to fuel load. If such a redesign could be accomplished, the CFRW would be temporary structures, and installation would clearly be an activity that does not meet the definition of construction. There are, however,

technical considerations that would need to be resolved before this approach could be considered viable, and it is estimated that use of temporary CFRW would increase the combined cost of construction of Units 3 & 4 by approximately \$22 million. The second alternative is to increase the size of the excavation and locate the construction cranes in the excavation. This alternative would result in the need to dismantle, relocate, and reassemble the cranes from time to time during construction to facilitate backfill operations. This would significantly complicate the construction sequence, is estimated to increase combined cost of construction of Units 3 & 4 by more than \$260 million and would extend the construction schedule by in excess of 5 months.

The need for CFRW arises from the unique characteristics of the STP site, which is a deep soil site without any rock foundations. Without the CFRW, it will not be possible to locate the construction cranes sufficiently close to the permanent plant buildings and at plant grade. Since installation of the CFRW must be accomplished before the excavation for the permanent plant structures, compliance with § 50.10(c) will result in the costs described above. Such costs were not considered by the Commission, and would not occur at sites that have rock foundations.

D. Application of 10 CFR 50.12(b)

The balance of the factors in § 50.12(b) supports issuance of the requested exemption.

1. Installation of the CFRW will not give rise to a significant adverse impact on the environment.

The impacts of CFRW installation are within the scope of the anticipated preconstruction activities described in the Environmental Report for STP Units 3 & 4 (ER). See ER Sections 3.9S and 3.10S, and Chapter 4. The principal CFRW installation steps consist of:

- Full depth and width slurry excavation for each CFRW, with the excavation being maintained by the slurry.
- Reinforcing placed in the slurry filled trench.
- Concrete placed by tremie in the excavations from bottom up.
- Installation of tiebacks and walers as the site construction excavation proceeds to provide lateral support for the CFRW.

Installation of each CFRW will disturb an area estimated to be 890 feet long by 13 feet wide, which is 11,570 square feet or 0.27 acres, or approximately 0.54 acres for both CFRW. This acreage is 0.1 percent of the 540 acres that is estimated to be impacted by site preparation and construction of STP Units 3 & 4. Reference ER Table 4.1-1.

As described in ER Section 4.1, the affected area was previously disturbed during the construction of STP Units 1 & 2, and is not environmentally sensitive.

As described in ER Section 4.6, CFRW installation will use best management practices (BMP) in accordance with regulatory and permit requirements, and will implement the environmental controls required in the Storm Water Pollution Prevention Plan (SWPPP). These measures will mitigate the impacts of ground disturbance due to CFRW installation and assure that there will not be a significant environmental impact.

Approximately 75 workers are expected to be needed to complete CFRW installation. This is a small fraction of the estimated 1300 to 2400 workers projected to be employed during preconstruction activities described in ER Section 3.10S. This number of workers is within the normal variation in the number of workers and visitors at the STP site. Reference ER Figure 3.10S-3. Given the small number of workers involved with installation of the CFRW, the CFRW installation will not result in significant adverse socio-economic impacts.

The completed CFRW will be below-grade reinforced concrete walls approximately three feet wide, 890 feet long and 80 feet deep. The CFRW will not be a significant barrier to movement of groundwater because of their limited depth. Reference ER Section 4.2.1.

The completed CFRW will not have an adverse aesthetic impact, since they are below grade and not visible from off-site. See ER Section 4.4.2.2.5.

Consequently, installation of the CFRW will not give rise to a significant adverse impact on the environment.

2. Redress of any adverse environmental impact from CFRW installation can reasonably be effected should such redress be necessary.

As discussed above, installation of the CFRW will not result in a significant adverse environmental impact. The presence of the CFRW will not prevent any anticipated future uses of the STP site, or of the site-area in the vicinity of Units 3 & 4, and if it ever becomes desirable to remove the CFRW, this could be done using conventional construction methods. Therefore, redress of any adverse environmental impact due to CFRW installation can be reasonably effected, and no anticipated future use of the site will be prevented.

3. CFRW installation will not foreclose subsequent adoption of alternatives.

None of the alternatives considered in the ER Chapter 9 would require any different use of the subsurface in the vicinity of the CFRW location, and the cost of CFRW installation would be a small fraction of the cost of preconstruction activities. Consequently, installation of the CFRW will not foreclose adoption of any alternatives.

4. Delay of CFRW installation would impose a significant cost that would be contrary to the public interest.

As described above, delay of CFRW installation until COL issuance would delay commercial operation of Unit 3 by approximately eight months, and alternative construction approaches would significantly increase the cost of construction.

Thus, delay in CFRW installation would result in significant cost to the owners of STP Units 3 & 4 and the public. Issuance of an exemption authorizing CFRW installation would avoid these unnecessary costs, and is clearly in the public interest.

5. Issuance of such an exemption shall not be deemed to constitute a commitment to issue a construction permit. During the period of any exemption granted pursuant to this paragraph (b), any activities conducted shall be carried out in such a manner as will minimize or reduce their environmental impact.

STPNOC acknowledges that issuance of the requested exemption would not constitute a commitment to issue COLs for STP Units 3 & 4. As described above, the activities authorized by the exemption will be carried out in accordance with Best Management Practices and will not have a significant environmental impact.

E. Conclusion

CFRW installation is of critical importance to the STP Units 3 & 4 construction schedule. Issuance of an exemption to authorize CFRW installation prior to issuance of COLs is consistent with the provisions of 10 CFR 50.12, and the four factors identified in § 50.12(b) all favor the granting of this exemption request.

F. References

1. Letter, Edward D. Halpin to Document Control Desk, "Request for a Limited Work Authorization for Installation of Crane Foundation Retaining Walls," dated November 16, 2009, U7-C-STP-NRC-090176 (ML093230143)
2. Letter, Mark A. McBurnett to Document Control Desk, "Submittal of Combined License Application Revision 3," dated September 16, 2009, U7-C-STP-NRC-090130 (ML092930393)