[7590-01]

NUCLEAR REGULATORY COMMISSION

STP NUCLEAR OPERATING COMPANY

DOCKET NOS. 52-012 AND 52-013

SOUTH TEXAS PROJECT ELECTRIC GENERATING STATION, UNITS 3 AND 4

REQUEST FOR EXEMPTION

ENVIRONMENTAL ASSESSMENT AND FINDING OF NO SIGNIFICANT IMPACT

[NRC-2010-0343]

By letters dated March 23, 2010 (STPNOC 2010a), and July 21, 2010 (STPNOC 2010b), STP Nuclear Operating Company (STPNOC) submitted a request for an exemption from Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, Section 50.10: License required; limited work authorization. The U.S. Nuclear Regulatory Commission (NRC or the staff) is considering issuance of this exemption as it relates to STPNOC's application for combined licenses (COLs) for South Texas Project Electric Generating Station (STP) Units 3 and 4, which is currently under review by the NRC. The exemption would authorize STPNOC to install two crane foundation retaining walls (CFRWs) prior to issuance of the COLs. Granting this exemption would not constitute a commitment by the NRC to issue COLs for STP Units 3 and 4; STPNOC would install the CFRWs assuming the risk that its COL application may later be denied. NRC has prepared this environmental assessment (EA) for the exemption request in accordance with the requirements of 10 CFR 51.21. Based on this EA, the NRC has reached a Finding of No Significant Impact. The details of the NRC staff's safety review of the exemption request will be provided in the safety evaluation document associated with that determination.

ENVIRONMENTAL ASSESSMENT

Background:

By letter dated January 8, 2010, the NRC notified STPNOC that installation of the CFRWs was considered construction under 10 CFR 50.10(a)(1), therefore requiring issuance of a limited work authorization (LWA) or COLs before their installation (NRC 2010a). In accordance with 10 CFR 50.12(b), STPNOC has requested an exemption that would permit the construction of the CFRWs prior to the issuance of COLs for STP Units 3 and 4 (STPNOC 2010).

IDENTIFICATION OF THE PROPOSED ACTION:

The proposed action, as described in STPNOC's request for an exemption to 10 CFR 50.10, would allow STPNOC to install two CFRWs for STP Units 3 and 4, prior to issuance of COLs. According to STPNOC, the CFRWs are non-safety related, reinforced concrete walls that would facilitate excavation activities by retaining soil next to permanent plant structures in the excavations. STPNOC states that the CFRWs are required to accommodate the reach of a heavy-lift crane needed to place reactor components into the excavations. Installation of the CFRWs would include the following activities:

- A full-depth and -width slurry excavation would be made, with the excavation maintained by the slurry;
- Reinforcing would be placed in the slurry-filled trench;
- Concrete would be placed in the slurry-filled trench from the bottom-up; and
- Tiebacks and whalers would be installed to stabilize the CFRWs, as excavation for permanent plant structures proceeds.

As construction of the permanent plant structures proceeds, the CFRWs would be abandoned in place following crane use. After abandonment, the CFRWs would have no function during operation of STP Units 3 and 4.

NEED FOR THE PROPOSED ACTION:

In its exemption request, STPNOC stated that the proposed exemption is needed because installation of the CFRWs must occur before excavation for permanent plant structures, and compliance with 10 CFR 50.10, i.e., obtaining an LWA, would result in undue hardship or other costs that are significantly in excess of those contemplated during the 2007 LWA rulemaking. According to the exemption request, installation of the CFRWs is needed to allow STPNOC to complete certain on-site activities in parallel with the licensing process, so that it can begin construction promptly upon issuance of COLs.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION:

This EA evaluates the environmental impacts of STPNOC's proposed installation of the CFRWs, including the non-radiological and radiological impacts that may result from granting the requested exemption. This evaluation is based on STPNOC's exemption request, dated March 23, 2010, and on information provided by STPNOC in support of its COL application for proposed STP Units 3 and 4, primarily Revision 3 of the environmental report (ER) (STPNOC 2009). According to STPNOC's exemption request, the environmental impacts of installing the CFRWs are within the scope of preconstruction activities described in Chapters 3 and 4 of STP Units 3 and 4 ER. Certain facilities, such as a concrete batch plant, lay down areas, parking lots, and temporary buildings, would be required for preconstruction activities at the STP site, and as such, are not exclusive to the installation of the CFRWs. It is expected that these facilities would already be in place and supporting preconstruction activities, and as such, this EA does not include the environmental impacts of such facilities.

DESCRIPTION OF THE SITE:

The STP site is located in a rural area of Matagorda County, Texas, approximately 10

miles (mi) north of Matagorda Bay, 70 mi south-southwest of Houston, and 12 mi south-southwest of Bay City. The proposed location of STP Units 3 and 4 is within the site boundaries of the existing STP Units 1 and 2, approximately 1,500 feet (ft) north and 2,150 ft west of the center of Units 1 and 2. The STP site comprises 12,220 acres (ac) immediately west of the Colorado River, approximately 10 mi upstream of the river's confluence with Matagorda Bay. The Main Cooling Reservoir, a man-made impoundment that is the normal heat sink for waste heat generated by STP Units 1 and 2, occupies approximately 7,000 ac of the STP site, and about 1,750 ac are currently occupied by Units 1 and 2 and associated facilities. The remainder of the site is undeveloped land or is used for agriculture and cattle grazing. The area that would be affected on a long-term basis as a result of permanent facilities for proposed Units 3 and 4 would be approximately 300 ac. An additional approximately 240 ac would be disturbed for temporary construction facilities.

NONRADIOLOGICAL IMPACTS:

Land Use Impacts

Installation of each CFRW would disturb an area approximately 890 ft long by 13 ft wide, which is approximately 23,140 square ft (0.54 ac) for both CFRWs. This would be a minor portion of the 12,220-ac STP site, and would be located in an area that was previously disturbed during construction of STP Units 1 and 2. As such, the NRC staff concludes that land use impacts from installation of the CFRWs would not be significant.

Surface and Groundwater Impacts

Installation of the CFRWs would have insignificant impacts on groundwater flow and surface water quality. While the purpose of the CFRWs is for building Units 3 and 4, they would remain in place after construction and could slightly reduce the permeability of the affected area. The completed CFRWs would each be approximately 3 ft wide, 890 ft long and 80 ft deep. In

the vicinity of the STP site, the Shallow Aquifer's base is between 90 and 150 ft below ground surface (STPNOC 2009). Because there would be a gap between the bottom of the CFRWs and the top of the Shallow Aquifer, groundwater flow would not be significantly impacted.

Sediment carried with stormwater from the disturbed areas could impact surface water quality. STPNOC would be required to implement environmental controls specified in its Clean Water Act Section 402(p) Texas Pollutant Discharge Elimination System (TPDES) general permit for construction of STP Units 3 and 4 (STPNOC 2009). In its exemption request, STPNOC has stated that it would employ best management practices (BMPs) during installation of the CFRWs in accordance with these regulatory and permit requirements (STPNOC 2010), which would limit the impacts of ground disturbance to surface water quality. BMPs would be described in a Stormwater Pollution Prevention Plan (SWPPP) that would be submitted to and approved by the Texas Council on Environmental Quality (TCEQ) in accordance with STPNOC's TPDES general permit (STPNOC 2009). With these controls, the NRC staff concludes that impacts to surface water quality from installation of the CFRWs would not be significant.

Terrestrial Resources Impacts

As stated above, the proposed action would be a small portion of the 12,220-ac STP site, and land disturbance for the CFRWs would occur in previously disturbed areas on the STP site. Therefore, the staff concludes there would be no impacts to terrestrial species or their habitat associated with the proposed action.

Aquatic Resources Impacts

Impacts to aquatic resources from the proposed action would occur from erosion and sedimentation associated with site stormwater management. As stated above, as part of its SWPPP, STPNOC would employ BMPs to minimize impacts from stormwater runoff to ditches and wetlands. STPNOC plans to implement new detention ponds and drainage capacity to

accommodate surface water runoff in areas disturbed by site preparation and construction activities (STPNOC 2009). Impacts from any stormwater runoff reaching ditches and wetlands would be minimal and temporary. As such, the staff concludes that impacts to aquatic resources from installation of the CFRWs would not be significant.

Threatened and Endangered Species Impacts

Potential impacts to threatened and endangered species from the proposed action result from land disturbances to terrestrial species. Two species listed as threatened or endangered under the Endangered Species Act of 1973, as amended, that occur on or in the vicinity (within 10 miles) of the STP site are the Federally endangered Northern Aplomado falcon (*Falco femoralis septentrionalis*) and the Federally threatened American alligator (*Alligator mississippiensis*). The Federally endangered whooping crane (*Grus americana*), a species of special concern to Texas resource agencies and environmental groups, has not been observed on the STP site.

These birds may migrate through the area and fly over the STP site, but are unlikely to use the inland habitats found onsite. Because no impacts are expected to occur for terrestrial species or their habitat, the proposed action would have no impacts on the Northern Aplomado falcon, the American alligator, or their habitats. The staff concludes there would be no effects on federally threatened or endangered species as a result of the proposed action.

Cultural and Historic Resources Impacts

According to the environmental report contained in STPNOC's COL application for STP Units 3 and 4, there are no cultural and historic resources at the STP site (STPNOC 2009). In support of its COLs application, STPNOC consulted with the Texas Historical Commission and received concurrence on its findings in January 2007 (STPNOC 2006, 2009). The NRC's independent review of cultural resources in support of the environmental review for STPNOC's COLs application also did not identify any cultural and historical resources that would be impacted

by construction and operation of proposed STP Units 3 and 4 (NRC 2010b). The area where the CFRWs would be installed was previously disturbed during construction of STP Units 1 and 2, and any resources that may have existed prior to construction of Units 1 and 2 would have been destroyed during land clearing and construction activities (STPNOC 2010). Therefore, the staff concludes that no environmental impacts to cultural and historic resources are expected from installation of the CFRWs. STPNOC has procedures in place to protect undiscovered historic or archaeological resources if discovered during site preparation and construction activities, and such procedures would apply to the proposed action (STPNOC 2008).

Air Quality Impacts

Installation of the CFRWs would result in temporary impacts on local air quality from vehicle and construction equipment emissions, and fugitive dust caused by earth-moving activities. As stated in the ER for the COL application, to minimize impacts to air quality, STPNOC would implement mitigation measures to minimize fugitive dust and vehicle and equipment emissions, including water suppression, covering truck loads and debris stockpiles, use of soil adhesives to stabilize loose dirt surfaces, minimizing material handling, limiting vehicle speed, and visual inspection of emission control equipment (STPNOC 2009). Construction equipment would be serviced regularly and operated in accordance with local, State, and Federal emission requirements (STPNOC 2009). Emissions from activities associated with installation of the CFRWs would vary based on the level and duration of the specific activity, but the overall impact on air quality is expected to be temporary and limited in magnitude. The staff concludes that the proposed action would not significantly contribute to air quality impacts at the STP site.

Nonradiological Health Impacts

Nonradiological health impacts to the public and workers from the proposed action would include exposure to fugitive dust, and vehicle and construction equipment exhaust, occupational

injuries, and noise; as well as the transport of materials and personnel to and from the STP site. Adherence to Federal and State regulations regarding air quality, construction worker health, and noise would minimize nonradiological health impacts. Mitigation measures, such as operational controls and practices, worker training, use of personal protective equipment, and fugitive dust and exhaust emissions control measures, would further reduce impacts from the proposed action. Based on the number of shipments of building materials and the number of workers that would be transported to the STP site for site preparation and construction activities (STPNOC 2009), the staff concludes that nonradiological health impacts from transportation associated with installing the CFRWs would be minimal. STPNOC has estimated that 75 workers would be needed to install the CFRWs (STPNOC 2010). This would be a small fraction of the 2,400 workers needed during peak preconstruction activities. Accordingly, the staff concludes that nonradiological health impacts from the proposed action would not be significant.

Nonradioactive Waste Impacts

Nonradioactive waste impacts from the proposed action include impacts to land, water, and air from storage of excavated material, runoff to ditches and wetlands, and emissions from vehicles and construction equipment. Excavated materials would be stored onsite in borrow or spoil areas not to exceed 240 ac for the entire STP Units 3 and 4 project (STPNOC 2009). Surface water runoff from development activities would be controlled by implementation of a SWPPP (STPNOC 2010). Regulated practices for managing air emissions from construction equipment and temporary stationary sources, BMPs for controlling fugitive dust, and vehicle inspection and traffic management plans, would minimize impacts to air. With the above controls in place, the staff concludes that impacts of nonradioactive waste from the proposed action would not be significant.

Socioeconomic Impacts and Environmental Justice

Potential socioeconomic impacts due to the proposed action include physical impacts

such as transportation, aesthetics, and air quality, and social impacts including demographics, economy, infrastructure, and community services. In its exemption request (STPNOC 2010), STPNOC stated that 75 workers would be needed to install the CFRWs. The peak number of workers required for preconstruction activities at the STP site would be 2,400 (STPNOC 2009). The proposed action would occur concurrently with other preconstruction activities, and therefore would not significantly affect the size of the STP Units 3 and 4 labor force. Given the small number of workers involved in installation of the CFRWs, the staff concludes that the proposed exemption would not have measurable socioeconomic impacts.

With regard to environmental justice, due to the lack of significant environmental impacts resulting from the proposed action, the staff concludes that the proposed exemption would not have disproportionately high and adverse impacts to minority and low-income populations in the vicinity of the STP site.

Summary:

Based on the foregoing, the staff concludes that granting the proposed exemption that would permit installation of the CFRWs prior to the issuance of COLs would not result in significant changes in nonradiological impacts to land use, surface and groundwater resources, terrestrial and aquatic resources, threatened and endangered species, socioeconomic factors and environmental justice, cultural and historic resources, air quality, nonradiological human health, and nonradioactive waste.

RADIOLOGICAL IMPACTS:

Radiological Health Impacts

Sources of radiation exposure from existing STP Units 1 and 2 for construction workers include exposure from direct radiation and liquid and gaseous radiological effluents (STPNOC 2009). In support of the environmental review for the COL application, NRC staff estimated the annual direct dose to a construction worker would be approximately 10 millirem (mrem),

assuming 2,080 hours worked at the STP site per year (NRC 2010c). The maximum radiological dose to construction workers from gaseous and liquid pathways combined would be approximately 9 mrem. Therefore, the estimated annual dose to construction workers would be approximately 19 mrem based on an occupancy of 2,080 hours per year (STPNOC 2009), which is less than the 100 mrem annual dose limit to an individual member of public found in 10 CFR 20.1301. As such, the staff concludes that radiological impacts to construction workers as a result of the proposed action would be minimal. Accordingly, the staff concludes that there would be no significant radiological health impacts associated with the proposed exemption.

Summary:

Based on the foregoing, the staff concludes that granting the proposed exemption that would permit installation of the CFRWs prior to the issuance of COLs would not result in a significant increase in occupational radiation exposure. The staff concludes that there would be no significant radiological health impacts associated with the proposed exemption.

ALTERNATIVES TO THE PROPOSED ACTION:

As an alternative to the proposed action, the NRC staff considered denial of the proposed exemption (i.e., the "no-action" alternative). If NRC were to deny the exemption request, STPNOC would not be allowed to install the CFRWs before the COLs are issued, and would need to wait until a decision is made on its COL application before installing the CFRWs. Denial of the exemption request would avoid the environmental impacts discussed in this EA, unless NRC grants the COLs, in which case the impacts would be incurred but they would be delayed until issuance of the COLs.

AGENCIES AND PERSONS CONSULTED:

The NRC staff consulted with a number of Federal, State, regional, Tribal, and local

organizations regarding the environmental impacts of granting the COLs for proposed STP Units 3 and 4, which includes the environmental impacts of installation of CFRWs and other construction activities. A complete list of organizations contacted can be found in Appendix B of the draft environmental impact statement (DEIS) for COLs for STP Units 3 and 4 (NRC 2010c). A partial list of Federal and State agencies contacted includes: U.S. Army Corps of Engineers; Advisory Council on Historic Preservation; U.S. Environmental Protection Agency (Region 6 and headquarters); National Marine Fisheries Service; U.S. Fish and Wildlife Service; Texas Commission on Environmental Quality; Texas Historical Commission; Texas Parks and Wildlife Department; and Texas State Historic Preservation Office. Comments from these agencies regarding the overall COLs action were incorporated into the DEIS, and if they were applicable to construction activities similar to installation of the CFRWs, they have been included in this EA.

FINDING OF NO SIGNIFICANT IMPACT:

The NRC staff has prepared this EA for the proposed action. On the basis of this EA, the NRC staff has determined that there would be no significant environmental impacts associated with granting the exemption, and an environmental impact statement need not be prepared.

ADDITIONAL INFORMATION:

STPNOC's exemption request is available electronically at the NRC's Electronic Reading Room at *http://www.nrc.gov/reading-rm/adams.html.* From this site, you can access the NRC's

Agencywide Documents Access and Management System (ADAMS). The ADAMS accession number for the exemption request is ML100880055. The ADAMS accession number for the EA is ML101580541. The ADAMS accession number for the DEIS for STP Units 3 and 4 (NUREG-1937, Vols. 1 and 2) is ML100700576. If you do not have access to ADAMS or have problems accessing the documents located in ADAMS, contact the NRC Public Document Room Reference staff at 1-800-397-4209, or 301-415-4737, or via e-mail to *pdr.resource@nrc.gov*.

Dated at Rockville, Maryland, this 27th day of October, 2010.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Scott Flanders, Division Director
Division of Site and Environmental Reviews
Office of New Reactors

REFERENCES

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U.S. Nuclear Regulatory Commission (NRC). 2010c. *Draft Environmental Impact Statement for Combined Licenses (COLs) for South Texas Project Electric Generating Station, Units 3 and 4.* NUREG-1937, Vol. 1 and 2, Washington, D.C. Accession No. ML100700576.

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