

PMSTPCOL PEmails

From: STPCOL
Sent: Thursday, October 13, 2011 4:47 PM
To: PMSTPCOL PEmails
Subject: FW: STP decision Document (UNCLASSIFIED)
Attachments: STP SOF EA.pdf

From: Muir, Jessie
Sent: Thursday, October 06, 2011 10:18 AM
To: STPCOL
Subject: FW: STP decision Document (UNCLASSIFIED)

From: Hudson, Jayson M SWG [<mailto:Jayson.M.Hudson@usace.army.mil>]
Sent: Wednesday, October 05, 2011 3:33 PM
To: Muir, Jessie
Subject: STP decision Document (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Jessie,

Attached is the STP EA and decision document. I estimate the DA permit will be issued next week.

Jayson M. Hudson

Regulatory Project Manager
Galveston District

U.S. Army Corps of Engineers

Office: 409.766.3108 Fax 409.766.3931

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Classification: UNCLASSIFIED
Caveats: NONE

Hearing Identifier: SouthTexas34Public_EX
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Subject: FW: STP decision Document (UNCLASSIFIED)
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From: STPCOL

Created By: STP.COL@nrc.gov

Recipients:
"PMSTPCOL PEmails" <PMSTPCOL.PEmails@nrc.gov>
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CESWG-PE-RB

Application: SWG-2007-00768

MEMORANDUM FOR THE RECORD

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above – Numbered Permit Application

This document constitutes the Environmental Assessment, Section 404(b)(1) Guidelines Evaluation (attached), Public Interest Review, and Statement of Findings for the subject application.

1. Applicant:

South Texas Nuclear Operating Company
4000 Avenue F, Suite A
Bay City, Texas 77414-7742

2. Corps Authority. The U.S. Army Corps of Engineers, Galveston District (Corps) will evaluate the proposed activity under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act (33 U.S.C. §1344) and (33 U.S.C. §403).

3. Project and Site Description. The applicant proposes to construct and operate two new nuclear units at the South Texas Project site. The U.S Nuclear Regulatory Commission (NRC) has completed the "Draft Environmental Impact Statement for the Combined Licenses for South Texas Project Electric Generating Station Units 3 and 4. The U.S. Army Corps of Engineers, Galveston District (Corps), is a cooperating agency on the Environmental Impact Statement (EIS). A DA Permit is required for the applicant to conduct maintenance dredging and expansion of two existing barge slips located on the Colorado River and to construct a heavy-haul road from the barge-slip to the construction site by placing 6 culverts into waters of the United States. Dredged material will be placed in an existing confined dredge material placement area with no return water.

The excavation associated with the dredging and expansion of the existing barge slip would involve dredging approximately 1.3 acres of a previously authorized barge slip and approximately 0.3 acres of new barge slip. The new work will impact uplands. No compensatory mitigation has been proposed for this work.

The excavation and placement of 6, 80-linear-foot culverts into waters of the United States will result in 265-linear feet of new impacts. Of these 6 culverts, 3 are new work and 3 are replacing existing culverts that are either narrower than the proposed culverts or are not engineered for heavy haul. An assessment of the impacts to the relatively-permanent waters of the United States was conducted by the Corps using the Unified Stream Methodology. This assessment concluded that the moderate impacts to 265-linear feet of waters of the United States could be mitigated with require 136-linear feet of compensatory mitigation. No compensatory mitigation has been proposed for this work.

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4. Purpose and Need.

Applicant's Stated Purpose and Need

The purpose of STP's request is to obtain licenses to construct and operate two new nuclear units to provide additional baseload electrical generation capacity for use in the owner's current markets and/or for potential sale on the wholesale market.

Basic Project Purpose and Water Dependency Determination

The basic purpose of the project is to construct a power generation facility. While water availability is inherently integrated with power generation, the placement of power generation facilities is a non-water dependent action.

Overall Project Purpose

The overall purpose of the project is to provide additional baseload electrical generation capacity for current markets in Texas and potential sale in the wholesale market at the existing STP site.

5. Existing Conditions Chapter 2 of the EIS provides a very detailed description of the affected environment of the project site and surrounding area.

STP's proposed location for Units 3 and 4 is wholly within the STP site. Bay City Census County Division (CCD) is the closest population center (more than 25,000 residents) to the proposed new units. The STP property is approximately 12,220 ac and directly borders the west side of the Colorado River on the site's east boundary.

The topography in the vicinity of the STP site is characterized by relatively flat coastal plain with farmland and pasture land predominating. Elevations generally range from 20 to 30 ft above mean sea level (MSL). Approximately 67 percent of the land within the 6-mi vicinity of the STP site is agricultural land; 15 percent is forest land; 11 percent is water; 1 percent is wetlands; 4 percent is rangeland, grassland, or bottomland; 2 percent is urban; and less than 1 percent is barren land

The STP site contains two existing nuclear generating units, STP Units 1 and 2, which are licensed by the NRC. Unit 1 began commercial operation in March 1988, and Unit 2 began commercial operation in March 1989. Together, the two existing nuclear units, other facilities such as the training facility, and onsite transmission line corridors occupy approximately 300 ac of the STP site.

The Main Cooling Reservoir (MCR) occupies approximately 7,000 ac of the STP site, and about 1750 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. Some of the undeveloped

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land located east of the MCR is leased for cattle grazing. No zoning currently applies to the STP site. STPNOC has maintained its own land management plan for the STP site since 1995. Approximately 90 percent of the STP site excluding the MCR and existing facilities, constitutes prime farmland. There are no mineral resources of known commercial value within the STP site boundary or in the 6-mi vicinity of the site.

The 46-ac Essential Cooling Pond (ECP) serves as the Ultimate Heat Sink (UHS) for existing STP Units 1 and 2 and is east of Units 1 and 2. The Texas Prairie Wetlands Project (TPWP) is a managed 110-ac shallow wetland area that was constructed in the northeast portion of the STP site in 1996 to enhance the site for waterbirds. There are waters of the United States subject to Federal regulatory authority within the proposed building and laydown/spoils sites for proposed Units 3 and 4.

The STP site is located along the west bank of the Colorado River. A barge slip on the Colorado River is located approximately 3.5 mi southeast of existing STP Units 1 and 2. The Colorado River is not a wild and scenic river as that term is defined at in 36 CFR 297.3. Small portions of the STP site near the Colorado River are within the 100-year and 500-year floodplains.

Several sloughs flow through the STP site. One slough feeds 34-ac Kelly Lake, which is located in the northeast corner of the site. Little Robbins Slough is an intermittent stream located in a channel on the west side of the west embankment of the MCR.

Access to the STP site is from farm-to-market (FM) roads FM 521 and FM 1468. FM 1468 intersects FM 521 approximately 350 ft west of the main plant entrance (STPNOC 2009a). An inactive railroad spur approximately 9 mi long, runs north from the STP site to a commercial railroad line operated by the Union Pacific Railroad. No natural gas pipelines traverse the STP site.

STP is located 12 mi south-southwest of Bay City, Texas, and 10 mi north of Matagorda Bay on the Gulf of Mexico. Bay City is the county seat of Matagorda County. Palacios is the other incorporated community in Matagorda County. No Tribal lands of Federally recognized Indian Tribal entities are located within the 50-mi region. All or portions of nine counties (Brazoria, Fort Bend, Wharton, Jackson, Victoria, Calhoun, Lavaca, Colorado, and Matagorda) are located within 50 mi of the STP site. Within this region, approximately 61 percent of the land is agricultural, 18 percent forest, 10 percent rangeland, 5 percent wetland, 2.5 percent urban or built-up, 2 percent fresh water bodies, and less than 1 percent is barren land.

Chapter 2 of the EIS provides a very detailed description of the affected environment of the project site and surrounding area.

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6. Background:

By letter dated September 20, 2007, the U.S. Nuclear Regulatory Commission (NRC or the Commission) received an application from STP Nuclear Operating Company (STP) for combined construction permits and operating licenses (combined licenses or COLs) for South Texas Project Electric Generating Station Units 3 and 4. On June 4, 2009, with a subsequent submittal on October 28, 2009, STP submitted a Permit Determination Request to the U.S. Army Corps of Engineers (Corps) Galveston District for activities associated with constructing and operating STP Units 3 and 4. On November 10, 2009, the Corps notified STPNOC that the proposed project would require a U.S. Department of the Army (DA) permit pursuant to Section 404 of the Federal Water Pollution Control Act (Clean Water Act) and Section 10 of the Rivers and Harbors Appropriation Act of 1899. The Corps is participating with the NRC in preparing this environmental impact statement (EIS) as a cooperating agency.

The proposed actions related to the STP Units 3 and 4 application are (1) NRC issuance of COLs for construction and operation of two new nuclear units at the STP site; and (2) the Corps issuance of a permit pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. The permit application requests authorization to expand an existing barge slip on the Colorado River and to culvert and fill waters of the United States for the purpose of constructing a heavy haul road on the site.

A DA Permit is required for the applicant to conduct maintenance dredging and expansion of two existing barge slips located on the Colorado River and to construct a heavy-haul road from the barge-slip to the construction site by placing 6 culverts into waters of the United States. Dredged material will be placed in an existing confined dredge material placement area with no return water. The project is located at the existing South Texas Nuclear Power Plant, on FM 521 approximately 8 miles west of Wadsworth, Texas. The project can be located on the U.S.G.S. quadrangle map entitled: Blessing SE, Texas

The STP project involves impacts to waters of the United States, in addition to a license from the NRC, NRC and the Corps decided that the most effective and efficient use of Federal resources in the review of nuclear power projects would be achieved by a cooperative agreement. On September 12, 2008, the NRC and the Corps signed a Memorandum of Understanding (MOU) regarding the review of nuclear power plant license applications (Corps and NRC 2008). Therefore, the Galveston District of the Corps is participating as a cooperating agency as defined in 10 CFR Part 51.14.

As described in the MOU, the NRC is the lead Federal agency, and the Corps is a cooperating agency in the development of the EIS. The goal of this cooperative agreement is the development of one EIS that serves the needs of the NRC license decision process and the Corps

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permit decision process. While both agencies must comply with the requirements of NEPA, both agencies also have mission requirements that must be met in addition to the NEPA requirements. The NRC makes license decisions under the Atomic Energy Act of 1954, as amended (42 USC 2011 et seq.), and the Corps makes permit decisions under the Rivers and Harbors Appropriation Act of 1899 and the Clean Water Act. The Corps is cooperating with the NRC to ensure that the information presented in the NEPA documentation is adequate to fulfill the requirements of Corps regulations, the EPA's Clean Water Act Section 404(b)(1) guidelines, which contain the substantive environmental criteria used by the Corps in evaluating discharges of dredged or fill material into waters of the United States, and the Corps public interest review process.

As a cooperating agency, the Corps is part of the NRC review team, involved in all aspects of the environmental review, including scoping, public meetings, public comment resolution, and EIS preparation. Two Public Scoping meetings were held on February 5, 2008. The Draft Environmental Impact Statement (DEIS) was made available for a 75-Day comment period on March 19, 2010. Two public hearings were held May 6, 2010. Comments received during the comment period and at the public hearing have been considered in the evaluation of the project and incorporated into the Final Environmental Impact Statement (EIS). On February 28, 2011, the EIS was made available for public review. The Corps has determined that the February 28, 2011 EIS is adequate and is fully adopting it for its permit evaluation purposes. This Record of Decision incorporates by reference the Nuclear Regulatory Commission's *Environmental Impact Statement for Combined Licenses (COLs) for South Texas Project Electric Generating Station Units 3 and 4, Final Report*.

7. Scope of Analysis.

- a. NEPA: The determination of what is the appropriate Scope of Analysis governing the Corps' permit review and decision is guided by the Corps' National Environmental Policy Act (NEPA) regulations for the regulatory program: 33 CFR Part 325, Appendix B. The Scope of Analysis should be limited to the specific activity requiring a DA permit and any additional portions of the entire project over which there is sufficient Federal control and responsibility to warrant NEPA review. Appendix B states that factors to consider in determining whether sufficient "control and responsibility" exist include: 1) whether or not the regulated activity comprises "merely a link" in a corridor type project; 2) whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity; 3) the extent to which the entire project will be within Corps jurisdiction; and 4) the extent of cumulative Federal control and responsibility. Generally, the Corps' area of responsibility includes all waters of the U.S. as well as any additional areas of non-jurisdictional waters or uplands where the district determines there is adequate Federal control and responsibility to justify including those areas within the Corps' NEPA scope of analysis. This normally includes upland areas in the immediate vicinity of the waters of the U.S. where the regulated activity occurs

(Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program –
July 2009).

1. Factors.

i. With regard to the first factor that must be considered in the determination of sufficient Federal control and responsibility, the regulated activities associated with the construction of the two nuclear reactors proposal do not comprise a link in a corridor type of project.

ii. With regard to the second factor, the design of upland portions of the construction of the two nuclear reactors occurring in the immediate vicinity of the activities occurring within Corps jurisdiction does not affect the location and configuration of the activities occurring within the Corps jurisdiction.

iii. With regard to the third factor, the extent to which the entire project will be within Corps jurisdiction, the proposed construction of the two nuclear reactors is proposed primarily in uplands. Although there are areas within the footprint of the project wherein the Corps has jurisdiction, neither the entire project nor a majority of the project is within the Corps' jurisdiction; thus this project does not meet the third factor.

iv. With regard to the fourth factor that must be considered in the determination of sufficient Federal control and responsibility, during our consideration of the extent of cumulative Federal control and responsibility for this project, the Corps concluded that while the NRC's may have Federal control and responsibility over the project site pursuant to its statutory authority, the Corps did not find sufficient authority to establish cumulative Federal control and responsibility outside the boundaries of the Corps section 10/404 regulatory jurisdiction.

2. Determined Scope. In conclusion, based on our examination of Corps NEPA Regulations (33 CFR Part 325, Appendix B) and applicable program guidance (e.g. CEO's Considering Cumulative Effects Under the National Environmental Policy Act and the Standard Operating Procedures for the U.S. Army Corps of Engineers Regulatory Program – July 2009), we have determined that the appropriate scope for this evaluation of the DA permit is the waters of the United States.

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b. National Historic Properties Act (NHPA) “Permit Area”. The determination of what is the appropriate Scope of Analysis governing the Corps’ permit review and decision is guided by the Corps’ NHPA regulations for the regulatory program: 33 CFR Part 325, Appendix C.

(1) Tests. Activities outside waters of the United States are not included because of all of the following tests are not satisfied: Such activity would occur but for the authorization of the work or structures within the waters of the United States; Such activity is not integrally related to the work or structures to be authorized within waters of the United States (or, conversely, the work or structures to be authorized must be essential to the completeness of the overall project or program); and such activity is not directly associated (first order impact) with the work or structures to be authorized.

(2) Determined Scope. We have determined that the appropriate scope for this project is within the delineated water. Although there are areas within the footprint of the project wherein the Corps has jurisdiction, neither the entire project nor a majority of the project.

c. Endangered Species Act (ESA) “Action Area.” The determination of what is the appropriate Scope of Analysis governing the Corps’ permit review and decision is guided by the Endangered Species Act of 1973.

(1) Action area means all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.

(2) Determined Scope. We have determined that the appropriate ESA action area for this project is within the delineated water. Although there are areas within the footprint of the project wherein the Corps has jurisdiction, neither the entire project nor a majority of the project is within the Corps’ jurisdiction.

8. Environmental Assessment.

a. Alternatives. The goal of the alternatives analysis is to evaluate less environmentally damaging practicable alternatives. NEPA requires that impacts to the human environment be addressed. The NRC regulations for implementing Section 102(2) of NEPA provide for including in an EIS a chapter that discusses the environmental impacts of the proposed action and the alternatives (10 CFR Part 51). Chapter 9 of this EIS addresses five categories of alternatives to the proposed action: (1) the no-action alternative, (2) energy source alternatives, (3) alternative sites, (4) system design alternatives, and (5) onsite alternatives to reduce impacts to aquatic resources.

As part of the evaluation of permit applications subject to Section 404 of the Clean Water Act, the Corps is required by regulation to apply the criteria set forth in the 404(b)(1)

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guidelines (33 USC 1344; 40 CFR Part 230). A key provision of the 404(b)(1) guidelines is the “practicable alternative test” which requires that “no discharge of fill material shall be permitted if there is a practicable alternative to the proposed fill which would have a less adverse impact on the aquatic ecosystem.” This is especially true when the proposed project is not water dependent. The applicant must demonstrate that there are no less damaging sites available and that all onsite impacts to waters of the United States have been avoided to the maximum practicable extent possible. For an alternative to be considered “practicable”, it must be available and capable of being done after taking into consideration cost, existing technology, and logistics in light of the overall project purpose.

The applicant considered the following siting criteria to determine the preferred alternative: 1) proximity to existing STP site, 2) proximity to Texas market; 3) proximity to existing heavy-haul capability such as rail lines or navigable water courses; 4) proximity to available water sources for cooling reservoirs; 5) proximity to existing high-voltage transmission corridors; 6) Minimal ecological impacts. Seven alternatives were considered based on the above siting criteria.

1. No-Action Alternative

The No-Action alternative involves denial of the DA permit pursuant to Section 10 of the River and Harbors Act of 1899 and Section 404 of the Clean Water Act. While denial of a DA permit would prohibit the excavation of the barge slip and the placement of fill material into the relatively permanent waters to construct a heavy haul road, this denial would not prohibit the construction of the nuclear power plant since the plant itself would not impact waters of the United States. Alternatives to the excavation and placement of fill material are evaluated as on-site alternatives.

2. Off-Site Action Alternatives

(i) Off-Site Alternative 1 – Red 2

As discussed in detail in Chapter 9, Section 9.3.2 of the EIS, the Red 2 site is a greenfield site located in the northern part of Fannin County, 12 Miles north of Savoy, Texas. It is located in a rural, mostly cleared agricultural area in the Blackland Prairies and the preliminary review of the site estimated that the ecology of the site is approximately 47% of forest, 51% cropland and 2% water sources; specifically a small herbaceous wetland, freshwater ponds, and a portion of Valley Lake. While Valley Lake is immediately adjacent to the site, it is already being utilized by a power plant. Therefore, this site would require construction of a new 1,700-acre water storage reservoir for cooling

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water. The only suitable water source for this cooling reservoir is the Red River, located 3.78 miles north of the site. In order to divert water from the Red River, construction of a pipeline would be required. Return water discharge from the cooling reservoir would also require construction of a pipeline. A rail spur, which would be used to bring in both construction materials and operational materials, is located 4 miles from the site. A 3454-kV transmission line is located 1.8 miles to the south at the existing Valley Power Plant. Impacts to terrestrial ecology resources and aquatic resources were estimated based on the information provided by STP and the review team's own independent review. The review team concluded that while this site does have access to a heavy-haul capability via the rail line and has access to a high-voltage transmission corridor, the impacts of building a cooling water reservoir and the associated appurtenances may result in a significant conversion and/or loss of environmental resources. In addition, the construction of the reservoir, rail line and transmission line is less practicable than other alternatives. Therefore, RED 2 is not the least environmentally damaging practicable alternative. .

(ii) Off-Site Alternative 2 – Allens Creek

As discussed in detail in Chapter 9, Section 9.3.3 of the EIS, the Allens Creek site is a greenfield site in Austin County, approximately 4 miles north of Wallis and 7 miles southeast of Sealy that was set aside for a nuclear power plant and cooling reservoir in the early 1970s. A final Environmental Impact Statement for the proposed nuclear power plant was issued by the United States Atomic Energy Commission in 1974. The majority of the site is currently owned by the City of Houston and the Brazos River Authority, who are currently studying the potential to construct a 9,500 acre reservoir as a drinking water source for the City of Houston and surrounding communities. The primary source of water for this reservoir is the Brazos River. For the purpose of this analysis, the Allens Creek alternative includes the construction of this reservoir by the City of Houston and the Brazos River Authority prior to the construction of the two new nuclear power reactors. The area surrounding the Allens Creek site has several aquatic resources of importance. Texas Parks and Wildlife has identified this reach of the Brazos River as an ecologically significant stream segment. This designation is a result of unique hydrological functions, riparian conservation and ecological communities within the vicinity. The Allens Creek site is located in a rural area of the Coastal Prairie which was cleared in 1973 of the native hardwood species and extensively drained to be used as cropland and pasture. During a 2008 site visit, the presence of numerous wetlands and forested areas in the northwest portion of the site were observed. The Allens Creek site is located within 20

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miles of the nearest 345-kV line with two other high-voltage transmission corridors located within 35 miles of the site. The nearest heavy-haul capable transportation is a rail line located 0.7 miles from the site. Although the site does have access to a heavy-haul transportation corridor, the construction of the 9,500 acre cooling reservoir would result in the inundation of up to 9 miles of Allens Creek and associated wetlands which may result in significant conversion and/or loss of aquatic resources. Impacts to terrestrial ecology resources and aquatic resources were estimated based in the information provided by STPNOC and the review team's own independent review. Impacts to terrestrial ecology resources and aquatic resources were estimated based on the information provided by STP and the review team's own independent review. The review team concluded that while the construction of this reservoir may occur independent of the proposed nuclear power plant, the cumulative effect of the reservoir when combined with the noticeable impacts that may result from the habitat fragmentation resulting from the transmission line, pipeline, and heavy-haul transportation line, including potential impacts to the critically endangered Attwater's Prairie Chicken (*Tympanuchus cupido*) and candidate species such as the Texas hornshell (*Popenais popeii*), may result in a significant conversion and/or loss of environmental resources. In addition, the construction of rail line and transmission line is less practicable than other alternatives. Therefore, Allens Creek was determined to not be the least environmentally damaging practicable alternative.

(iii) Off-Site Alternative 3 – Trinity 2

As discussed in detail in Chapter 9, Section 9.3.4 of the EIS, the Trinity 2 site is a greenfield site located in Freestone County approximately 10 miles north of Fairfield. It is located in a rural site in the Blackland Prairies and the preliminary review estimated the site is approximately 80% open land or grasslands, 18% is forested, 1% developed and 1% water resources. While Lake Fairfield is located nearby, it is not available for use by a potential power plant since it is already used by the Big Brown Power Plant. Therefore, a 1,700-acre reservoir would be required for cooling water for the plant. The only suitable water source is the Trinity River located 5 miles north and 2.5 miles east of the site. In order to divert, construction of a pipeline would be required. Return water discharge from the cooling reservoir would also require construction of a pipeline. A rail spur, which would be used to bring in both construction materials and operational materials, is located 19.5 miles from the site. A 3,454-kV transmission line is located 5 miles to the west at the existing Big Brown Power Plant. In addition, 3 miles of access road would be required to access the site. Impacts to terrestrial ecology resources

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and aquatic resources were estimated based on the information provided by STP and the review team's own independent review. While this site does have access to a high-voltage transmission corridor, the impacts of building a rail spur, an access road the impacts of building a cooling water reservoir and the associated appurtenances may result in a significant conversion and/or loss of environmental resources. In addition, the construction of the reservoir, rail line and transmission line is less practicable than other alternatives. Therefore, Trinity 2 is not the least environmentally damaging practicable alternative.

3. On-Site Action Alternatives

(i) Onsite Alternative 1

Onsite alternative 1 uses a railway system as ingress for large equipment and use of existing roads within the STP facility to offload and transport heavy materials. This alternative would require the construction of 12 mi of rail line, which may cost between \$10 and \$15 million. Construction of the railway may require up to a 100-ft right-of-way, or 145 ac, which may include impacts to waters, uplands, and public infrastructure such as overhead utility lines, potable water, and sewer lines. Use of existing roads to transport materials after offloading from the railcars would be strictly limited due to safety concerns to human health and risk. This alternative is not a practicable alternative due to the economic impact associated with the cost of the construction of rail line in comparison to other alternatives such as the barge slip. In addition, the construction of the rail line is more environmentally damaging than other on-site alternatives due to the ecological impacts associated with the 100-ft right-of-way when compared to other alternatives such as the proposed heavy haul road. Therefore, this alternative is also not the least environmentally damaging alternative.

(ii) Onsite Alternative 2

Onsite alternative 2 includes barging material up the existing Colorado River Navigation Channel, but not dredging the existing barge terminal. In this alternative, a large crane would be used to offload material from the barges, which could be located within the Colorado River. The cost of the crane is estimated to be \$12 million. Barge traffic staged in the river for offloading may impede commercial and recreational navigation in the river during staging and offloading. Use of upgraded roads to transport materials after offloading from the barge would be strictly limited due to safety concerns to human health and risk. Limited impacts to waters, uplands, or public infrastructure are anticipated by this alternative. The Corps determined that

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this alternative is not practicable due to the impedance to safe and open navigation of the Colorado River. In addition, in-stream impacts to the river system that would result from structure constructed along the river banks is more environmentally damaging than other alternatives. Therefore, this alternative is also not the least environmentally damaging alternative.

4. Applicants Preferred Alternative

The applicant's preferred alternative is located at the existing STP site. The site has an existing cooling reservoir, transmission corridors and river-front access to the Colorado River and the federal navigation channel. The alternative uses a combination of barging material up the existing Colorado River Navigation Channel, upgrading existing barge slips to unload heavy equipment and construction of a heavy haul road within the STP facility. The existing barge slips are silted-in and would require dredging and rehabilitation before use. STP has proposed to increase the capacity of the barge slips to accommodate larger barges. Excavation and dredging of material would be conducted utilizing mechanical dredge methods and all materials would be placed in an existing upland dredge material placement area located onsite. Offloading of material would occur within the barge slip, and no impacts to navigation are expected during staging and offloading. A heavy haul road would be constructed from the barge slip to the construction site. The heavy haul road would require six culverted crossings within channelized streams. Properly sized and placed culverts may result in both positive and negative stream impacts. Culverts may disrupt the geomorphology of the stream, but also provide shade for aquatic species. The streams proposed for crossing are channelized and devoid of riparian buffer. The estimated cost of excavation and expansion of the existing barge slip and construction of the heavy haul road is \$1 million. Based on the siting criteria and minimal impacts to the environment, the applicant's preferred alternative has been determined to be the least environmentally damaging practicable alternative due to its minimal impacts to the aquatic environment.

b. Environmental Setting. Chapter 2 of the EIS provides a very detailed description of the affected environment of the project site and surrounding area.

STP's proposed location for Units 3 and 4 is wholly within the STP site. Bay City Census County Division (CCD) is the closest population center (more than 25,000 residents) to the proposed new units. The STP property is approximately 12,220 ac and directly borders the west side of the Colorado River on the site's east boundary.

The topography in the vicinity of the STP site is characterized by relatively flat coastal plain with farmland and pasture land predominating. Elevations generally range from 20

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to 30 ft above mean sea level (MSL). Approximately 67 percent of the land within the 6-mi vicinity of the STP site is agricultural land; 15 percent is forest land; 11 percent is water; 1 percent is wetlands; 4 percent is rangeland, grassland, or bottomland; 2 percent is urban; and less than 1 percent is barren land

The STP site contains two existing nuclear generating units, STP Units 1 and 2, which are licensed by the NRC. Unit 1 began commercial operation in March 1988, and Unit 2 began commercial operation in March 1989. Together, the two existing nuclear units, other facilities such as the training facility, and onsite transmission line corridors occupy approximately 300 ac of the STP site.

The Main Cooling Reservoir (MCR) occupies approximately 7,000 ac of the STP site, and about 1750 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. Some of the undeveloped land located east of the MCR is leased for cattle grazing. No zoning currently applies to the STP site. STPNOC has maintained its own land management plan for the STP site since 1995. Approximately 90 percent of the STP site excluding the MCR and existing facilities, constitutes prime farmland. There are no mineral resources of known commercial value within the STP site boundary or in the 6-mi vicinity of the site.

The 46-ac Essential Cooling Pond (ECP) serves as the Ultimate Heat Sink (UHS) for existing STP Units 1 and 2 and is east of Units 1 and 2. The Texas Prairie Wetlands Project (TPWPP) is a managed 110-ac shallow wetland area that was constructed in the northeast portion of the STP site in 1996 to enhance the site for waterbirds. There are waters of the United States subject to Federal regulatory authority within the proposed building and laydown/spoils sites for proposed Units 3 and 4.

The STP site is located along the west bank of the Colorado River. A barge slip on the Colorado River is located approximately 3.5 mi southeast of existing STP Units 1 and 2. The Colorado River is not a wild and scenic river as that term is defined at in 36 CFR 297.3. Small portions of the STP site near the Colorado River are within the 100-year and 500-year floodplains.

Several sloughs flow through the STP site. One slough feeds 34-ac Kelly Lake, which is located in the northeast corner of the site. Little Robbins Slough is an intermittent stream located in a channel on the west side of the west embankment of the MCR.

Access to the STP site is from farm-to-market (FM) roads FM 521 and FM 1468. FM 1468 intersects FM 521 approximately 350 ft west of the main plant entrance (STPNOC 2009a). An inactive railroad spur approximately 9 mi long, runs north from the STP site

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to a commercial railroad line operated by the Union Pacific Railroad. No natural gas pipelines traverse the STP site.

STP is located 12 mi south-southwest of Bay City, Texas, and 10 mi north of Matagorda Bay on the Gulf of Mexico. Bay City is the county seat of Matagorda County. Palacios is the other incorporated community in Matagorda County. No Tribal lands of Federally recognized Indian Tribal entities are located within the 50-mi region
All or portions of nine counties (Brazoria, Fort Bend, Wharton, Jackson, Victoria, Calhoun, Lavaca, Colorado, and Matagorda) are located within 50 mi of the STP site
Within this region, approximately 61 percent of the land is agricultural, 18 percent forest, 10 percent rangeland, 5 percent wetland, 2.5 percent urban or built-up, 2 percent fresh water bodies, and less than 1 percent is barren land.

Chapter 2 of the EIS provides a very detailed description of the affected environment of the project site and surrounding area.

c. Environmental Impacts. The possible consequences of this proposed work were studied for environmental concerns, social well-being, and the public interest, in accordance with regulations published in 33 C.F.R. 320-332. All factors, which may be relevant to the proposal, must be considered. The following factors were determined to be particularly relevant to this application and were evaluated appropriately, as they relate to the least environmentally damaging practicable alternative described in the alternative analysis section.

(1) Historic and Cultural Resources

The applicant conducted a reconnaissance-level cultural resources assessment of the STP site. It reviewed existing information for the STP site and the area within a 10-mi diameter. The applicant concluded that any sites that may have existed onsite would no longer retain their integrity because the area was heavily disturbed. In December 2006, the applicant reported these findings to the Texas Historical Commission (THC); concurrence that there would be no impacts to historic properties was received from the THC in January 2007.

(2) Water Quality

Water quality impacts associated with construction of the nuclear facility may be found in Chapter 4, Section 4.2.3 of the EIS. Water quality impacts associated with operation of the plant may be found in Chapter 5, Section 5.2.3 of the EIS.

A general permit, pursuant to the State of Texas' Texas Water Code for stormwater discharges associated with building the proposed STP Units 3 and 4 was obtained by STPNOC's contractor in October 2009. Under this general permit the State requires the development of a stormwater pollution prevention

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plan (SWPPP) that describes Best Management Practices (BMP) appropriate for the site and proposed activities. In addition to BMPs, STPNOC will construct new detention ponds and drainage ditches to control delivery of sediment from disturbed areas to onsite water bodies. Sediment carried with stormwater from the disturbed areas would settle in the detention ponds and the stormwater would eventually be discharged to one or more TPDES-permitted outfalls.

Dredging activities in the Colorado river near the Reservoir Makeup Pumping Facility (RMPPF) and the barge slip may also result in disturbance of sediments and, therefore, result in a potential increase of turbidity near these locations as well as downstream from these locations. However, the hydrological alterations resulting from site development would be localized and temporary. Permits, certifications, and the SWPPP require the implementation of BMPs to minimize impacts. Certification pursuant to Section 401 of the Clean Water Act will be issued, waived or denied by the Texas Commission on Environmental Quality (TCEQ) based on the decision made by the Corps pursuant to a Memorandum of Agreement between the Corps and TCEQ.

(3) Endangered Species

The Federally listed wildlife species with recorded occurrences in Matagorda Counties include the piping plover, *Charadrius melodus*, Whooping crane, *Grus Americana*, Northern Aplomado falcon, *Falco femoralis septentrionalis*, and the American alligator, *Alligator mississippiensis*. Of these species, only the American alligator has been observed on-site. Construction and operation of STP Units 1 and 2 has not been shown to adversely affect the American alligators found on the site. Therefore, the construction and operation of STP Units 3 and 4 are not likely to have any additional adverse affect on threatened or endangered species. Consideration of impacts to sea turtles by barge traffic was also considered. Formal consultation with the National Marine Fisheries Service (NMFS) was conducted pursuant to Section 7 of the Endangered Species Act. The NRC and Corps concluded that barge traffic may affect, but is not likely to adversely affect, sea turtles as any interactions between sea turtles and barge traffic would be discountable. By letter dated January 8, 2011, NMFS concurred. A copy of the Biological Assessment and concurrence letter may be found in Appendix F of the EIS.

(4) Fish and Wildlife Values

A detailed analysis of impacts to fish and wildlife resulting from construction of the nuclear facility may be found in Chapter 4, Section 4.3 of the EIS. A detailed analysis of the impacts to fish and wildlife from operations of the nuclear facility may be found in Chapter 5, Section 5.3 of the EIS.

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Activities that would affect terrestrial wildlife at the STP site include heavy equipment operation, outdoor lighting, and noise that may displace or destroy wildlife that inhabit the disturbance areas. Less mobile animals such as reptiles, amphibians, and small mammals are expected to incur greater mortality than more mobile animals such as birds and larger mammals. Although surrounding scrub-shrub, grassland, and wetland habitat would be available for displaced animals during building activities, movement of wildlife into surrounding areas would increase competition for available habitat and could result in increased predation and decreased fecundity and recruitment for certain species. These conditions could lead to a temporary reduction in population size for particular species.

Activities specific to the Corps review at the STP site include the building of the heavy haul road and the dredging of the barge slip. The heavy haul road would disturb approximately 9 ac and travel around to the east of the existing ECP and then south toward the barge slip. A total of 7 culverts would be used to span drainage areas associated with the new roadway, six within waters of the United States and one within a man-made upland drainage ditch. Three of the proposed road crossings have existing culverts but these would be replaced in order to support the expected vehicle traffic; three additional culverts would be needed to span existing drainages, and one culvert would be added as part of preparing a new drainage area. The existing barge slip that was built for Units 1 and 2 would be re-excavated and expanded for use with the proposed Units 3 and 4. The excavation would involve approximately 1/3 ac of terrestrial habitat alongside the existing slip. Vegetation on the area to be excavated consists of common successional species and no unique habitats would be lost.

(5) Shoreline erosion and accretion

To maintain proper support of the MCR discharge structures STP plans on restoring a 1600-ft revetment on the west bank of the Colorado River, beginning at the MCR spillway and extending down the river to the STP site property line.

Increased inland barge traffic along the Colorado River navigation channel resulting from construction of the nuclear facility would be negligible in the context of current traffic along the navigation channel. No barge traffic will be associated with the operation of the plant.

(6) Essential fish habitat

STP could affect species with designated EFH through operation of the RMPF and the discharge structure on the Colorado River as well as through maintenance dredging in front of the RMPF and at the barge slip. Fish species with designated

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EFH in the vicinity of the STP site include: king mackerel (*Scomberomorus cavalla*); Spanish mackerel (*S. maculatus*); gray snapper (*Lutjanus griseus*); red drum (*Sciaenops ocellatus*); brown shrimp (*Farfantepenaeus aztecus*); pink shrimp (*F. duorarum*); white shrimp (*Liopenaeus setiferus*); and Gulf stone crab (*Menippe adina*). Of the eight species, only red drum, brown shrimp, white shrimp, and pink shrimp have been collected during surveys of the Colorado River adjacent to STP. However, all of the species, with the exception of stone crab and the mackerel species, have been found in the MCR, indicating they are present in the Colorado River and have survived entrainment by the RMPF.

Operation of the RMPF and discharge structure could create conditions in the river that would affect designated species. However, STP does not plan on operating these facilities continuously; the adverse effects would be relatively short in duration. In addition, maintenance dredging would be infrequent and limited in area. Consultation with NMFS pursuant to the Magnuson-Stephen Fishery Conservation Act was conducted. The NRC and Corps concluded that construction and operation of STP would have minimal adverse effect on EFH. A copy of the Essential Fish Habitat Assessment may be found in Appendix F of the EIS.

(7) Wetlands and special aquatic sites

A detailed description of the wetlands found on-site may be found in Chapter 4, Section 4.3.1 of the EIS.

Twenty-nine wetlands totaling approximately 17.6 ac were identified by the Corps. Three of the wetlands identified on the site occur within or near the footprint, including laydown and spoil areas, off the project. None of the wetlands identified by the Corps, including the TPWP, will be affected by any fill or excavation activities. STPNOC indicated that it would avoid all delineated and known wetlands and thus avoid any direct impacts to the wetland areas on the site. No other special aquatic sites were identified.

(8) Recreation

The area along the Colorado River utilized by STP is classified by the Texas Commission on Environmental Quality as a contact recreation use, general use and fish consumption use water of the State. While operation of the RMPF and discharge structure could create conditions in the river that would affect this classification, the limited need for these operations would only result in relatively short duration impacts to recreational use of the river. The remainder of the STP site is not open to recreation use as a result of the security requirements of the existing Nuclear Units 1 and 2.

- (9) Aesthetics
Approximately 540 ac on the STP site would need to be cleared and excavated to build the proposed Units 3 and 4. All of the clearing and excavation would occur on the STP site; however, it may be visible from offsite roads, particularly FM 521 (depending on the activities being performed). Clearing and building activities along the riverfront of the Colorado River would be visible from the river. No new transmission corridors would be built for Units 3 and 4 but upgrading current transmission lines in the Hiljfe transmission line corridor is necessary. The STP site is already aesthetically altered by its existing nuclear power plant.

- (10) Land Use
The STP site contains two existing nuclear generating units, STP Units 1 and 2, which are licensed by the NRC and have a combined net electric generating capacity of approximately 2500 MW(e). Unit 1 began commercial operation in March 1988, and Unit 2 began commercial operation in March 1989. Together, the two existing nuclear units, other facilities such as the training facility, and onsite transmission line corridors occupy approximately 300 ac of the STP site. The MCR occupies approximately 7000 ac of the STP site, and about 1750 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. Some of the undeveloped land located east of the MCR is leased for cattle grazing. No zoning currently applies to the STP site (STPNOC 2009a). STPNOC has maintained its own land management plan for the STP site since 1995. Approximately 90 percent of the STP site, excluding the MCR and existing facilities, constitutes prime farmland. There are no mineral resources of known commercial value within the STP site boundary or in the 6-mi vicinity of the site.

- (11) Navigation
STP is located along the Colorado River Navigation Channel. Extensive coordination was conducted with the Corps' Operation Branch, Navigation Section during the development of the EIS to assure that the project did not affect the Colorado River federal channel and to assure that the federal channel had sufficient draft to allow access for the proposed barges. The proposed barge slips are being dredged with the final barge slips being located outside of the river bank limits of the Colorado River. With the exception of temporary impacts that may result during the barge-slip dredging operation, navigational interests along this segment of the river will be maintained.

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(12) Federal Projects

The Port of Bay City is the local sponsor for the 15-mile long federal navigation channel in partnership with the Corps on the Colorado River. Historically, the flow of the river has maintained the navigation channel depths. Although there are no current plans to dredge the Colorado River Navigation Channel for the purposes of construction of the nuclear facility, it is possible dredging might be needed in the future to maintain the federal channel. Dredging of the barge slip at STP would be required to allow particularly heavy components and heavy equipment to be delivered to the site, but this dredging is outside the limits of the federal project and will not directly affect the federal navigation channel.

(13) Conservation

Game species such as white-tailed deer (*Odocoileus virginianus*), feral pigs (*Sus scrofa*), eastern cottontail (*Sylvilagus floridanus*), swamp rabbit (*S. aquaticus*), mourning doves (*Zenaida macroura*), and many different species of waterfowl are common inhabitants of the STP site. Potential impacts of operating proposed Units 3 and 4 include increased noise levels near the cooling towers that may cause these wildlife species to avoid the immediate area and increased activity and traffic that also would cause wildlife to avoid the habitats immediately adjacent to the proposed units. Drift, fogging, and icing are expected to cause negligible or no impacts to habitats and would not be expected to affect important game species. Although animals may avoid habitats adjacent to the new units during operations, the STP property contains large expanses of aquatic and terrestrial habitat where these species would likely relocate. Thus, operational impacts to commercially and recreationally important species would be minimal.

(14) Floodplain values

With the exception of the barge slip expansion, the major project activities will not take place within a floodplain. Therefore, in accordance with Executive Order 11988, Floodplain Management, the Corps evaluated the proposed project to ensure that the impacts of potential flooding on human health, safety and welfare have been minimized.

(15) Safety

In reviews that are separate from but parallel to the EIS process, the NRC analyzes the safety characteristics of the proposed site and emergency planning information. These analyses are documented in a Safety Evaluation Report (SER) issued by the NRC. The SER presents the conclusions reached by the NRC regarding (1) whether there is reasonable assurance that two reactors can be constructed and operated at the STP site without undue risk to the health and safety of the public, (2) whether the emergency preparedness program meets the

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applicable requirements, and (3) whether site characteristics are such that adequate security plans and measures as referenced in the above CFRs can be developed. The NRC is currently conducting its safety evaluation and does not have a proposed completion date.

Vessels associated with the dredging and construction of the barge slip and barge traffic associated construction of the nuclear facility will be required to follow U.S Coast Guard Vessel and Facility Operating Standards.

- (16) Energy needs
A detailed study of need for power may be found in Chapter 8 of the EIS. There is an expected future shortage of baseload power in the region that could be at least partially addressed by construction of proposed Units 3 and 4 at the STP site. Building of the two new units could address (1) growth in demand for baseload power and (2) replacement of retiring baseload generating units elsewhere in the region. Therefore, the Corps took actions necessary to accelerate the completion of the evaluation of this project while maintaining safety, public health, and environmental protections required in Executive Orders 13212 and 13302, Energy Supply and Availability.

- (17) Flood Hazards
In accordance with Executive Order 11988, the Corps has evaluated the potential effects of the development of the floodplain and after considering practicable alternatives to this development have concluded that the expansion and dredging of the barge slip will not result in a significant adverse impact to the floodplain.

- (18) Economics
A detailed description of economic impacts associated with construction of may be found in Chapter 4, Section 4.4.3.3 and a detailed description of the economic impacts of operational may be found in Chapter 5, Section 5.4.3.3 of the EIS. Beneficial economic impacts could be experienced throughout the region surrounding the site as a result of building activities at the STP site. In Matagorda County these potential economic impacts would be noticeable and beneficial in size while economic impacts elsewhere would be minor and beneficial.

- (19) Socioeconomics
A detailed assessment of socioeconomic and environmental justice may be found in Chapter 5, Section 5.5 of the EIS. Social impacts span issues of demographics, economy, taxes, infrastructure, and community services. Based on the information provided by STP, NRC review team interviews with city and county planners, social service providers, and school district officials, the NRC concluded that the

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overall impacts of building activities on the economy in the socioeconomic impact area and the effect on tax revenues would be beneficial.

(20) Water Supply and Conservation

A detailed discussion of water availability may be found in Chapter 2, Section 2.3.2 of the EIS. STP has proposed no surface water use during site development. However, the expected consumptive surface-water use of proposed Units 3 and 4 would be 37,373 ac-ft per year (23,170 gallons per minute [gpm]) during normal operations and 37,788 ac-ft per year (23,427 gpm) during maximum demand conditions. The existing STP Units 1 and 2 diverted an average of 37,083 ac-ft per year (22,990 gpm) from the Colorado River from 2001 through 2006. Together, all four STP units would consume approximately 68,714 ac-ft per year (42,600 gpm) under normal operations and 69,004 ac-ft per year (42,780 gpm) under maximum demand conditions. The average water diverted for existing STP Units 1 and 2 and the expected water use for all four STP units are estimated to be 2 and 4 percent, respectively, of the annual mean daily discharge in the Colorado River at the Bay City U.S. Geological Survey (USGS) gauge based on 1949-2008 streamflow data. If no water management strategies are implemented in the region, the combined water use of existing and proposed units at the STP site would be 6 percent of the current estimated water supply and 8 percent of the available 2060 water supply, and would be noticeable. If water management strategies are used to conserve, reuse, or develop water supplies and/or the development of water supplies including building new water supply reservoirs, and developing unused aquifers underlying the region water use impact of operating all four units at the STP site would be minimal. The applicant has stated that the existing surface water and groundwater appropriation from the Texas Commission on Environmental Quality are sufficient to support two additional nuclear reactors.

(21) Air pollution

STP is located within Matagorda County, a county in compliance with air standards. Air emissions would be generated by vehicles and heavy equipment and site development activities would create fugitive dust when building Units 3 and 4. These air quality impacts would be managed through the use of traffic management plans, vehicle inspections, and best management practices. Based on the regulated practices for managing air emissions from construction equipment and temporary stationary sources, best management practices for controlling fugitive dust, and vehicle inspection and traffic management plans, the review team expects that impacts to air from nonradioactive emissions while building Units 3 and 4 would be minimal.

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STP currently has gaseous emissions, primarily from diesel generators and the combustion turbine generator, that are subject to air permits issued by the TCEQ. The addition of Units 3 and 4 would require additional diesel and combustion turbine generators with attendant emissions regulated under an amended or new TCEQ permit. No other sources for gaseous emissions are currently planned at the STP site.

(22) Food and fiber production

Undeveloped land located east of the existing facility and the proposed Units 3 & 4 is currently used for cattle leasing. While the proposed haul road and barge slip are within this cattle lease, their construction would not result in a substantial loss of food production.

(23) Mineral needs

There are no mineral resources of known commercial value within the STP site boundary or in the 6-mile vicinity of the site.

(24) Other Federal State or Local Requirements

All required Federal, State, and/or local authorization or certifications necessary to complete processing of this application have been obtained except for water quality certification.

d. Cumulative & Secondary Impacts. An assessment of cumulative impacts takes into consideration the consequences that past, present, and reasonably foreseeable future projects had, have, or will have on an ecosystem. Every permit application must be considered on its own merits. Its impacts on the environment must be assessed in light of historical permitting activity, along with anticipated future activities in the area. Although a particular project may constitute a minor impact in itself, the cumulative impacts that result from a large number of such projects could cause a significant impairment of water resources and interfere with the productivity and water quality of existing aquatic ecosystems.

Cumulative impacts can result from many different activities including the addition of materials to the environment from multiple sources, repeated removal of materials or organisms from the environment, and repeated environmental changes over large areas and long periods. More complicated cumulative effects occur when stresses of different types combine to produce a single effect or suite of effects. Large, contiguous habitats can be fragmented, making it difficult for organisms to locate and maintain populations between disjunctive habitat fragments. Cumulative impacts may also occur when the timings of perturbations are so close in space that their effects overlap.

Chapter 7 of the EIS considered the potential cumulative impacts resulting from construction, preconstruction, and operation of the two additional nuclear units at the STP site in context with other past, present, and reasonably foreseeable future actions in the same geographic area. Actions identified as past, present or reasonably foreseeable may be found in Chapter 7, Table 7.1 of the EIS. Resources include in the assessment included: 1) land use; 2) water quality; 3) water availability; 4) ecology; 5) socioeconomic; 6) environmental justice; 7) historical and cultural resources; and 8) air quality. A detailed analysis of each of these resources may be found in Chapter 7, Sections 7.1-7.6. Overall, the cumulative impacts for the majority of resource areas were concluded to not be detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource; although there could be impacts for some resources that are sufficient to alter noticeably, but not to destabilize, important attributes of the resource. The full conclusion of the cumulative effects analysis, assessed by resource, may be found in Chapter 7, Section 7.11 of the EIS. In addition, Appendix J of the EIS provides a table indicating which resources were considered in the Corps' Cumulative Effects Assessment, which resources were included in the EIS and the sections of the EIS that detail the Corps considerations, and identifies which resources in the table were not considered in the EIS with a statement explaining why they were not considered.

9. General Evaluation Criteria Under the Public Interest Review

- a. The relative extent of the public and private need for the proposed work: (e.g. Public benefits include employment opportunities and a potential increase in the local tax base. Private benefits include land use and economic return on the property; for transportation projects, benefits include safety, capacity and congestion issues.) Explain
- b. The practicability of using reasonable alternative locations and/or methods to accomplish the objective of the proposed structure or work: There are no unresolved conflicts regarding resource use.
- c. The extent and permanence of the beneficial and/or detrimental effects, which the proposed work is likely to have on the public and private uses which the area is suited:
The beneficial effects associated with the utilization of the property would be permanent.

10. Coordination and Resolution of Comments. I

- a. Corps Internal Review Concerns. The proposed action was coordinated with Corps offices. No objections were received from the Operations Division-Navigation Branch (OD-N). No response was received from any other office.
- b. Public Notice Coordination. The formal evaluation process began with publication of a 30-day public notice on March 25, 2010. The comment period for the public notice closed on

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April 26, 2010. Copies of the public notice were forwarded to concerned Federal, State, and local agencies, organized groups, individuals and navigation districts. These entities included but are not limited to the following:
Nuclear Regulatory Commission
U.S. Fish and Wildlife Service (FWS)
National Marine Fisheries Service (NMFS)
Environmental Protection Agency (EPA)
U.S. Coast Guard (USCG)
Texas Commission on Environmental Quality (TCEQ)
Texas Parks and Wildlife Department (TPWD)
Texas Historical Commission (THC)
Texas Coastal Coordination Council (CCC)
General Land Office (GLO)
National Ocean Survey, Atlantic Marine Center (NOS)
Adjacent Property Owners

c. Response to the Public Notice.

(1) Federal Agencies.

The FWS commented by electronic mail, dated April 26, 2010 that they had reviewed the public notice and can take no action on the permit at this time. If future revisions require additional permits or amendments, the FWS would appreciate the opportunity to provide comments.

The EPA commented by letter, dated April 26, 2010, stating that the amount of impacts to waters of the United States that would result from the project or from each alternative presented could not be identified and an accurate comparison of the alternatives could not be performed. In addition, the EPA stated that proper mitigation of impacts to waters of the United States is a requirement of the CWA Section 404(b)(1) guidelines and that since no compensatory mitigation plan was provided, the project does not comply with the guidelines and should be denied unless an alternative analysis for the project is addressed, the amount of impacts to waters of the United States disclosed and a compensatory mitigation plan be submitted.

(2) Federally Recognized Native American Tribes and Affiliated Groups.

No response was received from any federally recognized Native American tribes and affiliates.

(3) State and Local Agencies.

TPWD submitted a letter, dated April 26, 2010, recommending that the applicant formulate a compensatory mitigation plan for all impacts to wetlands and shallow water habitat from the proposed project. TPWD also expressed a concern about the implementation of the mitigation measures identified in the Draft EIS.

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The TCEQ submitted a letter, dated April 14, 2010 requesting clarified site plan, information pertaining to the staging and access activities if the activities have the potential to adversely impact waters of the United States, and additional information concerning the long-term erosion and sediment control structures associated with the crossings. In addition, the TCEQ recommended the applicant incorporate into the project design potential mitigation/enhancement opportunities in the vicinity of the proposed impacts.

(4) Individual and Organized Groups. No response was received from any individual or organized group.

d. Corps's Consideration of Substantive Comments. The three agencies that commented on the proposed project all recommended that applicant develop a compensatory mitigation plan to offset the loss of aquatic resources that would result if the proposed project were authorized. Twenty-nine wetlands totaling approximately 17.6 ac were identified by the Corps. STP indicated that it would avoid all delineated and known wetlands and thus avoid any direct impacts to the wetland areas on the site. No other special aquatic sites were identified. The relatively permanent waters located on the site are man-made drainage features that were determined, through preliminary jurisdictional determination, to be non-navigable tributaries of traditional navigable waters that have relatively permanent flow. The flow from these drainage features is a result of outfall structures associated with the existing nuclear facility. In addition, these drainages are frequently maintained through excavation by the applicant.

While these relatively permanent waters are not considered natural streams, they exhibit similar characteristics and were, therefore, assessed using the Unified Stream Methodology to estimate their current function. The assessment was conducted by the Corps on July 14, 2010. Based on this methodology, the relatively permanent waters scored between a 0.52 and 0.57 out of a possible 1.5. After considering the type of impact to streams that results from the placement of large culverts, the Unified Stream Methodology calculations indicated that 136 linear feet of compensatory mitigation could be used to offset the 265 linear feet of impacts.

In response to the comments received during the public notice period and the Corps assessment of the impacts using the Unified Stream Methodology, STP submitted a mitigation plan on October 12, 2010. In STP's mitigation plan, they indicate that on-site compensation work would be in conflict with safety and maintenance requirements associated with their nuclear operating licenses. Therefore, STP proposed to purchase 136 stream compensation credits from the Mill Creek Mitigation Bank located in Austin County, TX.

Mill Creek Mitigation Bank is a single bank with two land units; one unit of 89.7 acres located approximately 8 miles southwest of the town of Brenham, and one unit of 98.9 acres located approximately 7.5 miles northwest of the town of Bellville, both in Austin County, Texas. The primary service area for the MCFB is the Lower Brazos River basin in the Texas Backland

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Prairie and South Central Plains ecoregions within the boundaries of the USACE-Galveston District. The primary service area includes portions of Austin, Brazoria, Colorado, Ft. Bend, Matagorda, Waller, and Wharton Counties. The secondary service area is the western portion of the San Jacinto and Galveston Bay watersheds, and eastern portion of the Lower Colorado and San Bernard watersheds in the Texas Blackland Prairie and Western Gulf Coastal Plains ecoregions within the boundaries of the Corps' Galveston District. The secondary service area for the MCMB includes portions of Austin, Colorado, Fayette, Ft. Bend, Galveston, Harris, Matagorda, Montgomery, Walker, Waller, and Wharton Counties. Therefore, STP is located just outside of the secondary service area and may only use MCMB. The service area of a bank is established through review with the Interagency Review Team (IRT). The IRT is an interagency group of regulatory and resource agency representatives that advises the district engineer on the establishment and management of mitigation banks. The Corps coordinated with the IRT to seek approval to use MCMB for the propose impacts despite the impacts being located outside of the agreed upon service area. No objection to the use of MCMB was received from the FWS, EPA and TCEQ; however, TPWD did object. As a result of this objection, the Corps concluded that MCMB was not a viable alternative for compensatory mitigation because the impact site is located outside of the service area for the MCMB and the IRT did not approve MCMB's use.

STP elected to modify their compensatory mitigation plan to a no-mitigation proposal. The basis for this change is STP's opinion that the waters being impacted are not natural, their function and values are low, and the NRC concluded in the EIS that the impacts would have environmental effects that are not detectable or are so minor that they will neither destabilize nor noticeably alter any important attribute of the resource.

11. Compensation and Other Mitigation Actions.

a. Compensatory Mitigation.

(1) Is compensatory mitigation required? yes no [If "no," do not complete the rest of this section]

(2) Is the impact in the service area of an approved mitigation bank? yes no

(i) Does the mitigation bank have appropriate number and resource type of credits available? yes no

(3) Is the impact in the service area of an approved in-lieu fee program? yes no

(i) Does the in-lieu fee program have appropriate number and resource type of credits available? yes no

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- (4) Check the selected compensatory mitigation option(s):
- mitigation bank credits
 - in-lieu fee program credits
 - permittee-responsible mitigation under a watershed approach
 - permittee-responsible mitigation, on-site and in-kind
 - permittee-responsible mitigation, off-site and out-of-kind

(5) If a selected compensatory mitigation option deviates from the order of the options presented in §332.3(b)(2)-(6), explain why the selected compensatory mitigation option is environmentally preferable. Address the criteria provided in §332.3(a)(1) (i.e., the likelihood for ecological success and sustainability, the location of the compensation site relative to the impact site and their significance within the watershed, and the costs of the compensatory mitigation project):

(6) Other Mitigation Actions: N/A

12. Determinations.

a. Public Hearing. No request to hold a public hearing pursuant to the Corps action for the proposed project was received during the public interest review.

b. Section 176(c) of the Clean Air Act General Conformity Rule Review: The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined the activities proposed under this permit will not exceed *de minimis* levels of direct emissions of a criteria pollutant or its precursors and are exempted by 40 CFR PART 93.153. Any later indirect emissions are generally not within the Corps continuing program responsibility and generally cannot be practicably controlled by the Corps. For these reasons, a conformity determination is not required for this individual permit.

c. Relevant Presidential Executive Orders.

(1) EO 13175, Consultation with Indian Tribes, Alaska Natives, and Native Hawaiians. This is not applicable as no federally recognized tribes or the affiliated are affected by the proposed project.

(2) EO 11988, Floodplain Management. This is not applicable since no changes to the floodplain will result from the proposed project.

(3) EO 12898, Environmental Justice. Environmental justice was evaluated in Chapter 4, Section 4.5 of the EIS.

PERMIT APPLICATION – SWG-2007-00768

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above – Numbered Permit Application

- (4) EO 13112, Invasive Species. The proposed project will not result in the introduction or proliferation of invasive species.
- (5) EO 13212 and 13302, Energy Supply and Availability. Pursuant to Energy Supply on the proposed nuclear power project, the NRC is the lead federal agency.
- d. The following Special Conditions will be Added to the Authorization:

(1) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

e. Findings of No Significant Impact. There have been no significant environmental effects identified resulting from the proposed work. The impact of this proposed activity on aspects affecting the quality of the human environment has been evaluated and it is determined that this action does not require an Environmental Impact Statement.

f. Compliance with 404(b)(1) guidelines. We have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application, as well as the stated views of other interested Federal and non-Federal agencies and the concerned public, relative to the proposed work in navigable waters of the United States. This evaluation is in accordance with the guidelines contained in 40 C.F.R. 230 pursuant to Section 404(b)(1) of the Clean Water Act. We have determined that the proposed discharge complies/does not comply with the 404(b)(1) guidelines.

PERMIT APPLICATION – SWG-2007-00768

SUBJECT: Department of the Army Environmental Assessment and Statement of Findings for the Above – Numbered Permit Application

g. Public Interest. We find that issuance of a Department of the Army permit is not contrary to the public interest.

FOR THE COMMANDER:

PREPARED BY:


Jayson N. Hudson
Regulatory Project Manager

Date: 29 September 2011

REVIEWED BY:


Casey Cutler
Chief, Policy Analysis Section
Regulatory Branch, Galveston District

Date: 10/3/11

APPROVED BY:


Fred L. Anthamatten
Chief, Regulatory Branch
Regulatory Branch, Galveston District

Date: 10/4/11

EVALUATION OF SECTION 404(B)(1) GUIDELINES - SHORT FORM

APPLICANT: South Texas Nuclear Operating Company APPLICATION NUMBER: SWG-2007-00786

1. Review of Compliance (230.10(a)-(d). A review of the permit application indicates that:

- a. The discharge represents the least environmentally damaging practicable alternative; YES NO* N/A

- b. If the proposed discharge is in a special aquatic site and is not water dependent has the applicant clearly demonstrated that practicable alternatives are not available and would not be less damaging; YES NO* N/A

- c. The activity does not appear to:
 - 1.) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the CWA; YES NO* N/A
 - 2.) Jeopardize the existence of Federally listed endangered or threatened species or their habitat; and
 - 3.) Violate requirements of any Federally designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies); YES NO* N/A

- d. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, and economic values (if no, see values, Section 2); YES NO* N/A

- e. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see section 5). YES NO* N/A

2. Technical Evaluation Factors (Subparts C-F) (Where a significant category is checked, add explanation below.)

NOT
SIGNIFICANT SIGNIFICANT*

a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)

1) Substrate Impacts	___	X	___
2) Suspended particulates/turbidity impacts	___	X	___
3) Water column impacts	___	X	___
4) Alteration of current patterns and water circulation	___	X	___
5) Alterations of normal water fluctuations / hydroperiod	___	X	___
6) Alteration of salinity gradients	___	X	___

b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)

1) Effect on threatened / endangered species and their habitat	___	X	___
2) Effect on the aquatic food web	___	X	___
3) Effect on other wildlife (mammals, birds, reptiles and amphibians)	___	X	___

c. Special Aquatic Sites (Subpart E)

1) Sanctuaries and refuges	X	___	___
2) Wetlands	X	___	___
3) Mud flats	X	___	___
4) Vegetated shallows	X	___	___
5) Coral reefs	X	___	___
6) Riffle and pool complexes	X	___	___

d. Human Use Characteristics (Subpart F)

1) Effects on municipal and private water supplies	___	X	___
2) Recreational and Commercial fisheries impacts	___	X	___
3) Effects on water-related recreation	___	X	___
4) Aesthetic impacts	___	X	___
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves	___	X	___

3. Evaluation of Dredged or Fill Material (Subpart G)**

a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material. (Check only those appropriate.)

- 1) Physical characteristics X
- 2) Hydrography in relation to known or anticipated sources of contaminants X
- 3) Results from previous testing of the material or similar material in the vicinity of the project _____
- 4) Known, significant sources of persistent pesticides from land runoff or percolation _____
- 5) Spill records for petroleum products or designated (Section 311 of CWA) hazardous substances _____
- 6) Other public records of significant introduction of contaminants from industries, municipalities or other sources _____
- 7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities _____
- 8) Other sources (specify) _____

List appropriate references:

The project is considered a Tier II project. Based on the 29 August 2000, Memorandum of Agreement, between the TCEQ and CESWD, on the Section 401 Water Quality Certification Process in the State of Texas, the Galveston District states that the Section 401 Water Quality Certification has not been received. This permit will not be valid until certification is received. The TCEQ has 10 days from receipt of the decision document to make their certification decision. Once the TCEQ certification decision is received, the Corps will attach it to the decision document and forward the permit decision to the applicant.

- b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredge or fill material is not a carrier of contaminants, or that levels of contaminants are substantially similar at extraction and disposal sites and not likely to degrade the disposal sites, or the material meets the testing exclusion criteria.
- | | | | | |
|--|-----|---|-----|-----|
| | YES | X | NO* | ___ |
|--|-----|---|-----|-----|

4. Disposal Site Determinations (230.11(f))

a. The following factors as appropriate, have been considered in evaluating the disposal site:

- | | | | |
|---|-----|-----|-----|
| 1) Depth of water at disposal site | ___ | X | ___ |
| 2) Current velocity, direction, and variability at disposal site | ___ | X | ___ |
| 3) Degree of turbulence | ___ | ___ | ___ |
| 4) Water column stratification | ___ | ___ | ___ |
| 5) Discharge vessel speed and direction | ___ | ___ | ___ |
| 6) Rate of discharge | ___ | ___ | ___ |
| 7) Dredged material characteristics (constituents, amount, and type of material, settling velocities) | ___ | ___ | ___ |
| 8) Number of discharges per unit of time | ___ | ___ | ___ |
| 9) Other factors affecting rates and patterns of mixing (specify) | ___ | ___ | ___ |

List appropriate references.

- b. An evaluation of the appropriate factors in 4a above indicates that the disposal site and/or size of mixing zone are acceptable.
- | | | | | |
|--|-----|---|-----|-----|
| | YES | X | NO* | ___ |
|--|-----|---|-----|-----|

5. Actions to Minimize Adverse Effects (Subpart H)

All appropriate and practicable steps have been taken through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge. List actions taken.

YES X NO*

Impacts to wetlands and vegetated shallows have been

6. Factual Determination (230.11) A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short or long-term environmental effects of the proposed discharge as related to:

- a. Physical substrate at the disposal site (review sections 2a. 3, 4, and 5 above) YES X NO
- b. Water circulation, fluctuation and salinity (review sections 2a. 3, 4, and 5) YES X NO
- c. Suspended particulates/turbidity (review sections 2a. 3, 4, and 5) YES X NO
- d. Contaminant availability (review sections 2a. 3, and 4) YES X NO
- e. Aquatic ecosystem structure and function (review sections 2b and c, 3, and 5) YES X NO
- f. Disposal site (review sections 2, 4, and 5) YES X NO
- g. Cumulative impact on the aquatic ecosystem YES X NO
- h. Secondary impacts on the aquatic ecosystem YES X NO

7. Evaluation Responsibility

a. This evaluation was prepared by: Jayson M Hudson JMH 29 Sept 11

Position: Regulatory Project Manager

b. This evaluation was reviewed by: Casey Cutler 10/3/11

Position: Chief, Policy Analysis Section

8. Findings

a. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines. _____

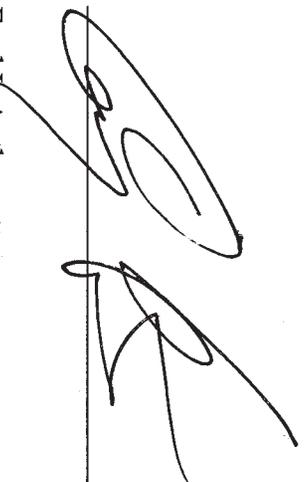
b. The proposed disposal site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions: X

The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

c. The proposed disposal site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s):

- 1) There is a less damaging practicable alternative _____
- 2) The proposed discharge will result in significant degradation of the aquatic ecosystem _____
- 3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem _____

10/9/11
(date)



Fred L. Anthamatten
Chief, Regulatory Branch