Nuclear Operating Company

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

November 30, 2009
U7-C-STP-NRC-090215

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

South Texas Project
Units 3 and 4
Docket Nos. 52-012 and 52-013
Response to Request for Additional Information

Reference: Letter, Scott Head to Document Control Desk, "Response to Request for Additional Information", dated October 27, 2009. U7-C-STP-NRC-090184 (ML093060175).

The above referenced letter contained 26 responses to Requests for Additional Information (RAI) pertaining COLA Part 3 Environmental Report Section 9.3 Alternate Site Analysis. This transmittal letter contains supplemental responses to 5 of the previously submitted RAI responses from the reference letter.

The following 5 supplemental responses are submitted:

09.03-15 S1	09.03.03-07 S1
09.03.02-10 S1	09.03.03-10 S1
09.03.03-06 S1	

There are no commitments in this letter.

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NRO

STI: 32582637

If you have any questions, please feel free to contact me at (361) 972-7136, or Russell W. Kiesling at (361)-972-4716

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

Executed on 11/30/09

Scott Head
Manager, Regulatory Affairs
South Texas Project, Units 3 & 4

rwk

Attachments:

Attachment 1:	RAI 09.03-15 S1
Attachment 2:	RAI 09.03.02-10 S1
Attachment 3:	RAI 09.03.03-06 S1
Attachment 4:	RAI 09.03.03-07 S1
Attachment 5:	RAI 09.03.03-10 S1

cc: w/o attachment except*
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Question Number: 09.03-15 S1

CLARIFYING QUESTION, Conference Call November 17, 2009:

Please clarify the basis for the point addition or deduction based on proximity to a densely populated area, relative to the evaluation of population (Screening Criterion P3) as described in Table 5-1 and Appendix C of the Siting Report.

RESPONSE:

The data used to screen urban areas from the Region of Interest (ROI) was developed by the Texas General Land Office (TGLO) and is distributed in the form of a Geographic Information System (GIS) layer. The metadata for the GIS layer developed by TGLO is available at http://www.glo.state.tx.us/gisdata/metadata/urbanareas.htm.

The TGLO-designated urban areas were used in the initial screen of the ROI (ER, Section 9.3.2.2), but if an existing power plant or otherwise attractive location was located within a designated urban area, the area was further evaluated (during potential site identification) using satellite imagery to qualitatively confirm the presence of an urban area.

In applying the screening criteria in the evaluation of potential sites (ER Section 9.3.2.4), a one point addition or deduction to the site rating for Criterion P3 was applied as described in Appendix C based on a site's proximity to a densely populated area. In most cases, this decision was based on proximity to a densely populated area that is consistent with a major metropolitan area (e.g., Corpus Christi, San Antonio, Dallas and Houston); these distances are noted in the P3 criterion table in Appendix C of the Siting Report, where relevant. In other cases, it was based on proximity to a major town with a 50,000 to 100,000 population size (e.g., Waco, Wichita Falls, Bryan, College Station, Victoria); with the town size of Victoria (approximately 60,000 persons) used as a representative cutoff for a large / major town.

Population cutoff/metric definitions used in determining final ratings adjustments are not based on a specific U.S. Census Bureau or Texas General Land Office population definition. Rather, they were developed using best professional judgment and taking into account overall conditions at each site including distance to nearby incorporated areas, population of these incorporated areas (individually and in combination within a given distance), and the number of incorporated areas within a given distance of each site. Specifically,

- The majority of sites received no ratings adjustment because they are between 15 and 40 miles from a densely populated area as defined above; OR because they have towns with a population (or total population) of more than 10,000 persons within 10 miles of the site.
- The following sites received a one point increase because they are located more than 40 miles from a densely populated area as defined above AND because they had no towns with a population (or combined population) of at least 10,000 persons within 10 miles of the site: Nueces 1, Colorado 3, STP, Malakoff, Trinity 2, Trinity 3, Trinity 4, Neches 1, Neches 2, Neches 3, Angelina 1, Sulphur 1, Red 3, and Coastal 2.

- The towns of College Station and Bryan, TX (combined population of over 140,000) are within 35 miles to the north of the Brazos 5 site, therefore no additional point was added to the population criterion rating for this site.

CANDIDATE COLA REVISION:

No COLA revision is required as a result of this response.

Question Number: 09.03.02-10 S1

CLARIFYING QUESTION, Conference Call November 17, 2009:

Provide further clarification on the use of the TCEQ General Water Availability Maps and their impact on the assigned sub-rating for the availability of water rights component of the cooling water supply criterion at the coastal locations. Provide further clarification on the impact of permitability challenges on the cooling water supply criterion for the coastal locations.

RESPONSE:

For the coastal locations (Coastal 1 and Coastal 2 sites), since an unlimited capacity exists for the Gulf of Mexico source water, each site was given a rating of 5 for the first (water availability) component of the cooling water criterion evaluation. General Water Availability Maps (coastal basin maps versus river basin maps at the riverine sites) produced by TCEQ for the areas of water withdrawal for the coastal sites (http://www.tceq.state.tx.us/permitting/water_supply/water_rights/wam.html) show unappropriated flows available for a new application in 75%-100% of months. Therefore, each site was given a rating of 3 for the second (water rights) component of the cooling water criterion evaluation per the evaluation metric established in the siting study, resulting in an overall average rating of 4 for each site.

The potential for coastal locations to encounter permitting challenges, including issues from pipeline rights-of-way impacting sensitive environmental areas and intake/discharge structures on the coastal seabed, was also recognized in developing the final water criterion rating for the coastal sites. Potential difficulties in obtaining permits to access the Gulf of Mexico may affect the ability to obtain the cooling water necessary to operate a nuclear power plant at the coastal locations. This information was qualitatively considered in assigning the overall cooling water criterion rating of 4 for each coastal site, in lieu of assigning an overall rating of 5 based solely on the unlimited cooling water supply from the Gulf of Mexico.

The STP site cooling water scenario where water rights are presently owned and intake and discharge locations are established and permitted (STP) was viewed as preferable over the Gulf of Mexico cooling water scenario where unlimited supplies exist but access agreements and intake and discharge locations have not been established and permits would have to be obtained. Therefore, assignment of a rating of 5 to the STP site and assignment of a rating of 4 to the coastal sites for the cooling water criterion evaluation is considered to accurately reflect the relative suitability of the sites based on the comparative water availability and permitting difficulties that would be encountered in developing a new nuclear plant at STP versus the coastal sites. Even if the coastal sites had been given a rating of 5 for the water rights component of the cooling water criterion evaluation and an overall average rating of 5, the overall rating would have been reduced to a 4 taking into account the permitting difficulties of the coastal sites and the comparative advantages of the STP site.

CANDIDATE COLA REVISION:

No COLA revision is required as a result of this response.

Question Number: 09.03.03-06 S1

CLARIFYING QUESTION, Conference Call November 17, 2009:

Reconcile the difference between the groundwater use stated in the initial response to RAI 09.03.03-06 and the groundwater use stated in the response to RAI 05.10-04.

RESPONSE:

The groundwater use stated in the response to RAI 05.10-04 is an updated value for groundwater use and will be incorporated into this supplemental response to RAI 09.03.03-06 and ER Rev. 4. For clarification, the groundwater use for STP Units 3 & 4 under normal operating conditions is estimated at 975 gpm and under maximum use operating conditions is estimated at 3,434 gpm. The differences in the groundwater use amounts do not impact the remainder of the response to RAI 09.03.03-06.

CANDIDATE COLA REVISION:

No COLA revision is required as a result of this response.

Question Number: 09.03.03-07 S1

CLARIFYING QUESTION, Conference Call November 17, 2009:

Please confirm the water volume assumed for the makeup water requirement in the site evaluations.

RESPONSE:

The assumed makeup water requirement (quantity to be withdrawn from the cooling water source) in the STP Siting Study was 31,000 gpm (50,000 ac-ft/yr). This requirement was used consistently in all phases of the siting study, including regional screening and the evaluation of water rights acquisition. The assumed makeup water requirement was derived from the existing makeup water requirement at the STP site (Units 1 and 2), where a Main Cooling Reservoir (MCR) is used and blowdown return to the Colorado River is minimal. The value for consumptive use of cooling water (accounting for blowdown return) would be lower than the value for the makeup water requirement above.

Since the assumed makeup water requirement was derived from the operating conditions at the STP site (Units 1 and 2), the requirement includes evaporation losses from the MCR. Therefore, if a cooling reservoir configuration were to be used at the alternative sites, the makeup water requirement used in the evaluation would include evaporation losses.

CANDIDATE COLA REVISION:

No COLA revision is required as a result of this response.

Question Number: 09.03.03-10 S1

CLARIFYING QUESTION, Conference Call November 17, 2009:

Please correct inconsistencies relating to the acreages provided for developed land and water resources for the Trinity 2 site in ER 9.3.3.4 (pages ER 9.3-90 and ER 9.3-96). Please provide land use information for the remaining 1,100 acres associated with the proposed Allens Creek Reservoir on page ER 9.3-62 (Rev 3) (note that the Wildilfe Habitat Appraisal conducted previously by the University of Houston (Clear Lake) for the Texas Parks and Wildlife Department for the reservoir covered 8,400 of the 9,500 acres).

RESPONSE:

An inconsistency has been identified in ER sections 9.3.3.4.1 and 9.3.3.4.4 for the Trinity 2 site. The total acreage for developed areas (roads, drill pads) – 30 acres; and water resources (freshwater ponds) – 20 acres; is correct in the table in 9.3.3.4.1 (page 9.3-90 in ER Rev 3). However the reference to these two acreage breakouts in 9.3.3.4.4 (page 9.3-96 in ER Rev 3) inadvertently was reversed. ER 9.3.3.4.4 will be revised to include the corrected acreages.

With respect to Allens Creek Reservoir (ER 9.3.3.3.1), the Brazos River Authority (BRA) website indicates the proposed reservoir size to be approximately 9,500 acres. A Wildlife Habitat Appraisal conducted in 1995 for the Texas Parks and Wildlife Department shows a reservoir size of approximately 8,400 acres, based on the natural topography of the area. The acreage breakout originally reported in the ER for the reservoir was based on the breakout provided in the wildlife habitat appraisal. Based on the small scale drawing appearing at the BRA website, and a comparison of the area covered by this drawing versus that evaluated as part of the wildlife habitat appraisal, the BRA's proposed 9,500-acre reservoir appears to extend slightly further to the north in the slightly higher elevation bluff area. Assuming the additional 1,100 acres include this area, a review of Google Earth imagery (April 2006 Imagery Date) shows the additional 1,100 acre area to be comprised of forested areas along the natural drainages (approximately 33% or 370 acres of the total area); and the remaining percentage (67% or 730 acres) is in agricultural use. A review of the National Wetlands Inventory (NWI) wetlands mapper was also conducted for this area to identify whether any of the additional 1,100-acre area included wetlands, particularly the forested areas. No wetlands were identified for this area using the mapper other than a total of approximately 10 acres of scattered freshwater ponds. The ER land use and terrestrial ecology sections for Allens Creek (ER 9.3.3.3.1 and ER 9.3.3.3.4) will be corrected to reflect the updated acreage breakout.

The acreage modifications reported above, do not change other summary information regarding the total estimated acreages and associated impacts on land use and terrestrial ecology, as currently reported in ER 9.3.3. In the case of the Allens Creek Reservoir, the ER Rev 3 evaluation was based on the full 9,500-acre reservoir.

CANDIDATE COLA REVISION:

Section 9.3.3.4.4, paragraph five, first sentence will be revised as follows:

> Construction of the new plant and reservoir would affect up to 2,000 acres of land that currently includes forest (estimated at 350 acres, including 80 acres of high quality forested wetlands), pasture land (estimated at 1,600 acres), and surface water resources (intermittent streams, ponds and associated habitat – estimated at ~~3020~~ acres), resulting in the permanent loss of this habitat. The remaining ~~2030~~ acres (estimate) contain oil and gas drilling operations. Of the 300 acres permanently impacted at the power plant site, approximately half would include previously cleared land (140 acres) and half (160 acres) would include forested lands.

Section 9.3.3.3.1, paragraph 6, third sentence (and following breakout table) will be revised as follows:

As specific site locations and plant design layouts have not been finalized, specific acreage impacts cannot be determined for the sites under consideration. However, the following presents the general land uses for an area approximately 9,800 acres in size at the Allens Creek site where the main plant site and reservoir could be located. The acreage breakouts for the proposed reservoir are based primarily on a 1995 Wildlife Habitat Appraisal conducted for the proposed reservoir site for the TPWD; note that the appraisal encompasses 8,400 of the 9,500 acres (Reference 9.3-40); land uses for the remaining 1,100 acres, assumed to extend further to the north from that evaluated as part of the habitat appraisal, was based on a review of Google Earth imagery and best professional judgment. The acreage estimate for the proposed plant site, with a proposed location on the bluff above the western side of the reservoir, is based on a percentage breakout using Google Earth and best professional judgment (Reference 9.3-41).

Land Cover Class	Area (acres)	Percentage of Site
Crops	~~17222~~,452*	2~~1~~6% (of reservoir area)
Bottomland forest (including 1733 acres of wetlands)	2,640	~~31~~28% (of reservoir area)
Bluff forest Reservoir Plant site (out of 300 acres)	 ~~90~~460* 75	 ~~1~~5% (of reservoir area) 25% (of plant site)

Land Cover Class	Area (acres)	Percentage of Site
Grass Reservoir Plant site (pasture) (out of 300 acres)	3,923 225	4~~7~~1% (of reservoir area) 75% (of plant site)
Parks**	27	0.3% (of reservoir area)

* Includes 1,722 acres of crops and 90 acres of bluff forest as identified in the habitat appraisal, and an additional 730 acres of crops and 370 acres of bluff forest identified to the north using Google Earth imagery.

**Parks are trees that are greater than 9 feet tall and with a canopy cover varying from 11% to 70%

Section 9.3.3.3.4, fourth paragraph will be revised as follows:

A wildlife habitat appraisal of the proposed Allens Creek reservoir was conducted for TPWD to classify, delineate and map the major vegetative covers, develop mitigation requirements, and estimate the extent of jurisdictional wetlands. Within the proposed reservoir area, grassy areas comprise the largest habitat type (nearly 4,000 acres), followed by forests (over ~~2,7~~3,100 acres), and cropland (over ~~1,72~~2,400 acres). Forests (bottomland and bluff) rated the highest habitat quality scores due to the greater diversity of woody and herbaceous species. Croplands scored low due to the nature of the monoculture (Reference 9.3-40).

Section 9.3.3.3.5, fourth paragraph, sentence 3 will be revised as follows:

Previously, a wildlife habitat assessment for the proposed Allens Creek Reservoir was conducted in the summer of 1995. The total area of wetlands was computed to be 1,733 acres (out of 8,400 acres evaluated as part of the habitat assessment); an additional 10 acres of scattered freshwater ponds are found in the remaining 1,100-acre acre to the north that would also be potentially flooded to create a 9,500-acre reservoir. The majority of potential wetlands were mapped as Brazoria depressional soils, with the most notable area referred to as Alligator Hole.