PMSTPCOL NPEmails

From: Kallan, Paul
Sent: Friday, October 17, 2008 3:44 PM
To: Head, Scott; Kiesling, Russell W
Cc: Burton, William; Kugler, Andrew; Sosa, Belkys; Wunder, George; Zalcman, Barry; Mussatti, Daniel; Harvey, Brad; Emch, Richard; Ahn, Hosung; Nash, Harriet; Biggins, James; Kirkwood, Sara; Fringer, John; Lee, Jay; Shepherd, James; Tammara, Seshagiri; Fuller, Edward; Echols, Stan; Bernal, Sara; Watson, Bruce; Diediker, Nona H; Pstrak, David
Subject: Draft of unresolved RAIs
Attachments: RAI 2.doc

Hi Scott/Russ:

As promised, I am sending you the unresolved RAIs for the South Texas Project for your review. Once you have had a chance to review the RAIs, I will be talking to you and Russ Kiesling to set up meetings to discuss the RAIs in length for the week of October 27th, 2008.

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Subject: Draft of unresolved RAIs
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RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
2.3 – 2	Hydrology	Describe the existing storm water treatment and outfalls, and the water bodies into which they discharge.	Provide a better copy of Figure 1-1 from STPNOC 2004 Storm Water Pollution Prevention Plan included in the earlier response.	7/2/2008
2.3 – 3	Hydrology	Provide information regarding water rights under severe droughts.	From the earlier response, it is not clear who STPNOC will request the emergency relief from under the stipulations of Texas Water Code Section 11.148. Clearly state this information.	7/2/2008
2.3 – 6	Hydrology	Provide details of MCR operation during existing two–unit and future four–unit operation to help staff independently estimate water–use and water–quality impacts.	Provide an update on the modeling effort currently underway for the MCR water budget and water quality. Include details pertaining to the approach adopted in the development of these models. Also include details regarding input data requirements for these models, with particular emphasis on modeling/simulation time steps. Describe the anticipated approach adopted for using these models to predict impacts on water use in the Colorado River Basin and on water quality in the Colorado River.	8/14/2008
2.3 – 7	Hydrology	Provide details of the process followed in the selection of the site hydrogeologic conceptual model.	**(A)** The process description is good, but could be interpreted as leading to a single alternative conceptual model. The process described does not explicitly describe the alternate conceptual models considered, and the logic that produced the plausible conservative conceptual model on which analyses are based. Identify the alternative conceptual models considered and the logic that identified the plausible conservative conceptual model employed. **(B)** A contradiction exists in item "(a) Drawdown at offsite wells." It is stated that based on the conceptual model and drawdown during construction dewatering and water production there "may" be potential impacts to offsite wells. In the next paragraph, it is stated that drawdown during dewatering will "remain within the STP site boundaries." Based on these statements, it is not clear what impacts from dewatering are expected. Clarify. **(C)** Since drawdown values are presented, it will be necessary to review calculation packages. Identify and provide the calculation package(s).	7/2/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
2.3 – 8	Hydrology	Provide groundwater observations for a sufficiently long period to reveal seasonal trends. If available, also provide long-term trend data on groundwater in the vicinity of the proposed facility.	The RAI response and proposed revision includes the revised table providing the groundwater observations revealing seasonal trends; however, the series of figures (Figure 2.3.1-25) showing quarterly aquifer response to stress should also be revised to show the full year seasonal response in the data set. The current figure shows February and April results only. Provide the full sequence of figures.	7/2/2008
2.4.1 – 3	Terrestrial Ecology	Provide information and maps depicting all wetlands identified on the STP site during field surveys in 2006, 2007 and 2008.	Information provided at the site audit and during communications with the applicant indicates that additional wetland surveys and delineations have been conducted since the site environmental report was issued. Provide updated and complete information describing and mapping water features and related wetland features on the STP site that are not described in ER reference 2.4-3 “Ecological Survey Report Unit 3 and 4 Licensing Project, ENSR 2007 Report". Include any additional information requested by the Army Corps of Engineers to describe wetland and associated aquatic features on the STP site, including: (1) Field data sheets that describe the wetland identification and delineation for all surveys done on the site after the completion of the ENSR 2007 report. (2) Maps and tables indicating the locations, acreages and type of each of these wetlands. (3) Information describing whether each identified wetland would be impacted, either permanently or temporarily, by the project. (4) Survey data and information for wetland features associated with drainage ditches. (5) Detailed description and maps at viewable scale that identify where existing ditches and water features are planned to be re-routed. (6) Information detailing how the re-located portion of Little Robbins Slough was considered (i.e., was it identified as a wetland or on-site water feature.)	8/14/2008
2.4.1 – 6	Terrestrial Ecology	Provide the custom digital GIS coverages (shape files or geodatabases) for figures showing the construction areas and habitats on STP.	Provide the native digital GIS coverages for Figure 2.2-3, and Figure 3.9S-1 from the ER; Figure 3 describing habitats on STP site from the June 2008 ENSR report; and the updated GIS layers that map the spatial locations of wetlands, water bodies, and water features on STP.	New

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
2.4.2 – 11	Aquatic Ecology	Provide dataset for collection of species by station and gear type that is summarized in the ENSR 2008 report.	Raw data used to prepare Tables 2 and 3 in the ENSR 2008 report is needed to prepare Essential Fish Habitat consultation and for independent validation of impact evaluation using Jacard coefficients. (ENSR 2008 report: "Aquatic Ecology - Colorado River Monitoring Report Unit 3 and 4 Licensing Project", prepared by ENSR Corporation, June 2008.)	New
2.5 – 6	Socio/EJ Need for Power	Provide a discussion of non–zoning controls on land development	Provide citations (and copies of them) supporting the original answer to help demonstrate where the data came from and how the conclusions in the original response were reached.	8/14/2008
2.5 – 11	Socio/EJ Need for Power	Confirm whether the 2000 Census is the most recent data available for housing availability in the counties near STP.	STPNOC asserts there are no differences except scale between the 2000 Census and more recent data. Support that assertion by doing an analysis of the differences. In other words, prove the hypothesis by comparing 2000 Census data and more recent information (2005 Census updates, Texas statistics, etc., along with recent housing information available from sources other than Census). If this analysis does not support the hypothesis, then revise the analysis based upon more recent data.	8/14/2008
2.6 – 1	Hydrology	Provide a summary of past and expected surface settlements and how future settlements may impact surface water drainages, a description of various dewatering options, and relative settlements expected for each dewatering option.	The response draws heavily on the assumed similarity of construction dewatering for existing STP Units 1&2 and proposed STP Units 3&4. A summary comparison of the two events is needed to support this assumption. Provide comparative information for the completed units (1&2) and proposed units (3&4) including the area dewatered, depth of dewatering, duration of dewatering, measured and expected dewatering production rates, and distances from dewatering to the site boundary and wetlands.	7/2/2008
2.7 – 2	Met/AQ Accidents	Discuss the likelihood that the combination of the MCR and the STP Unit 3 & 4 cooling towers will have a synergistic effect that increases the frequency or intensity of fog.	The initial response does not address changes in location of cooling towers. Revise the response to include consideration of the revised cooling tower location.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
2.7 – 3	Met/AQ Accidents	Describe which PAVAN files were used and how the 50% χ/Q values were derived.	The response needs further amplification. It is not clear that the approach described in the response can be used to give acceptable 50% X/Q values. The environmental review requires realistic values not conservative values, all directions should be considered. Provide a set of realistic 50% X/Q values that consider all wind directions.	7/15/2008
2.7 – 5	Met/AQ Accidents	Interpret the word “may” as it relates to actions to mitigate potential impacts of construction on air quality.	In general, initial RAI response is ok. However, the response raises the issue of a "Construction Environmental Control Plan." Provide more information about that plan. When? Who? Will there be external review and approval?	7/2/2008
4.2 – 5	Hydrology	Provide information regarding the locations of drainage ditches and retention ponds.	The previous response stated that the final location of the main drainage ditch, which is to be relocated north of the STP Units 3 and 4, is still undetermined. Provide details of the process that is being followed to determine the final location of this ditch and when the decision may occur.	7/15/2008
4.2 – 6	Hydrology	Describe the analytical process used to determine impacts to surface water hydrology would be SMALL.	The previous response details what would be done during construction of STP Units 3 and 4, but still fails to provide a description of the analytical thought process used to determine impact levels. Provide an explanation why the activities detailed in the previous response would ensure that the impacts on surface water from the construction activities related to drainage ditches, swale relocation, soil removal, and grading, are SMALL.	7/2/2008
4.2 – 7	Hydrology	Provide a list and description of pre–construction activities mentioned in ER Section 1.1.2.7.	Power Block Earthwork is mentioned as a pre-construction activity. In addition, structural fill will be placed in some of the excavations and it seems that the fabrication of the reactor building base mat reinforcing module would occur prior to the COL being granted. The staff needs clarification if these additional activities should also be called “pre-construction” under the new LWA rule.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
4.2 – 8	Hydrology	Provide a map or drawing showing the extent of the excavations, and how close they will come to STP 1 & 2, the MCR, and wetlands. Describe the dewatering and excavation process, and provide access to supporting calculations.	The ER (Rev 2) describes two excavations 1000'x1200'; one for each unit. The response to the earlier RAI states that the requested map of excavations can not be provided. However the current revision of the ER suggests that such a figure may now be available. The ER also states an initial rate of water production would be 6700 gpm with a long-term steady-state value of 1000 gpm. Provide the needed figure showing all planned major excavations and their proximity to the site boundary, the MCR, and to wetlands. Also provide the calculations supporting the rates cited, (e.g., 6700 gpm and 1000 gpm).	7/15/2008
4.2 – 10	Hydrology	Demonstrate the lack of connectivity between dewatering wells and the wetlands and shallow surface water features.	Information is needed from the applicant to ensure that water use and quality impact levels during construction are bounded. Dewatering can have a substantial impact on the surrounding aquifer (off-site groundwater users), nearby wetland, and adjacent facilities (STP Units 1 and 2, and the MCR). Staff would prefer to mention the willingness of STPNOC to monitor groundwater and surface features in the vicinity of the dewatering activity, and, if significant impacts are observed, STPNOC's willingness to implement remedies including supplementing flow to the wetlands and installing cutoff walls. Their willingness and intent to perform these activities does factor into NRC staff's evaluation of potential impact level during construction. However, STPNOC's statement that "... dewatering activities could be monitored during dewatering activities to determine if dewatering activities are impacting surface water features ..." is interpreted as less than a commitment. Accordingly, staff needs to be able to refer to monitoring and possible remedies as a commitment by STPNOC, in order for the commitment to monitoring to be considered in assessing the impact levels.	
4.2 – 11	Hydrology	Provide a full description of the potential impacts to nearby groundwater users. Provide access to supporting calculations.	While the response may be adequate, review of the calculation package(s) will be necessary to check the potential drawdown values included in the RAI response. Identify the calculation package(s) and make it (them) available for staff review.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
4.3.1 – 2	Terrestrial Ecology	Clarify information and figures describing the proposed locations and affected areas for the temporary and permanent construction project areas and activities.	Revision 2.0 of the ER refers to figure 3.9S-1 in describing the acreage to be affected by temporary and permanent construction activities. Both the ENSR June 2008 report (Ecological Survey Report: Habitat Assessment) and the August 14 RAI response to Question 04.03.01-02 cite a total acreage of approximately 244 acres that will be disturbed by construction of facilities and list acreages. The acreages identified in figure 3.9S-1 sum to a greater total acreage to be disturbed by temporary and permanent construction activities than 244 acres (e.g., construction parking and laydown areas alone exceed 200 acres). Section 4.1 of ER Rev 2, provides a table that describes more than 700 acres disturbed. **(A)** Reconcile or indicate which acreages are correct in figures and tables. **(B)** Provide information to clarify and address whether the construction borrow/spoil area identified on figure 3.9S-1 and discussed in chapter 4 will be disturbed and whether habitat will be lost due to activities in borrow area. There are conflicting statements regarding whether this area will be affected by construction. **(C)** Identify the complete pathway for the heavy haul road and the affected acreage associated with constructing the road. **(D)** Provide a figure and table that identifies the correct acreage for each construction area, the type of habitat and associated acreage that will be disturbed, and whether the disturbance will cause temporary or permanent habitat loss.	8/14/2008
4.3.1 – 3	Terrestrial Ecology	Provide information regarding planned and potential mitigation required in accordance with local, state and federal regulations.	Provide information and details of any mitigation requirements identified as a result of survey and reviews completed in 2008. Describe and discuss any potential areas that have been identified for mitigation of wetlands and/or terrestrial wildlife habitats.	New
4.4 – 10	Socio/EJ Need for Power	Discuss the impact of construction on housing demand.	In our interviews with local officials, there was considerable informal knowledge concerning the locations of trailer courts during STP 1 & 2 construction, though none of this information was quantitative. Characterize the general locations of trailer parks and other temporary housing during the STP 1 and 2 construction period and explain why this is or is not useful guidance where housing of this type may develop again.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
4.4 – 12	Socio/EJ Need for Power	Describe impacts of overlapping construction and operations workforces.	The answer to the original RAI did not directly answer whether the net total socioeconomic effect of the operations workforce would be greater or less than the construction workforce. Is the net total socioeconomic effect greater than or less than that of peak construction? And why or why not?	7/30/2008
5.3.1.2 – 1	Aquatic Ecology	Describe the design feature of the RMPF that allows an “escape route” for fish to swim back to the river and precluding entrapment.	Based on the response to RAI in ABR-AE-08000052, the fish return system is blocked off when the river flows are high. The ER states that there are restrictions on the pumping of water from the Colorado River during low flow conditions. How often is Colorado River water pumped during high flow conditions when the fish return system is blocked off?	7/15/2008
5.3.1.2 – 3	Aquatic Ecology	What is the magnitude of impingement and entrainment of aquatic species at the RMPF for the species of fish currently found in the Colorado River compared to species present prior to 1993 when the diversion channel directed the river into East Matagorda Bay?	Please clarify the RAI response in ABR-AE-08000063. The 9th paragraph states, "During the 12-month period ending in April, 2008, STPNOC conducted quarterly sampling of fish and macro invertebrates in the Main Cooling Reservoir (MCR) using gill nets, trawls, beach seines, and plankton nets (ENSR 2008, page ES-1)." The reference at the end of the response is: "ENSR Corporation. 2008. Aquatic Ecology - Colorado River Monitoring Report. Unit 3 and 4 Licensing Project. Final." This reference was provided to NRC on June 17, 2008 (ABR-AE-08000045), however, this reference does not discuss the sampling of the Main Cooling Reservoir. Provide the reference that supports the response. This information is needed in order to evaluate the magnitude of impingement and entrainment of aquatic species.	8/14/2008
5.3.3.1 – 1	Met/AQ Accidents	Justify the assumption in the 2nd paragraph of ER Section 5.3.3.1.2 that there will not be increased fogging.	The initial response relies on monthly average values of temperature increase in the MCR to support assumption. The monthly average values indicate a 37% increase in saturation vapor pressure of the MCR during the winter and about a 7% increase in radiative heat loss. The justification for their assumption that there will be no impact on fogging is not convincing.	7/30/2008
7.1 – 1	Met/AQ Accidents	Provide the source of the dose factors used in evaluation of each design basis accident.	The initial response references whole body dose factors from a GE report. Provide a listing of those dose factors. Provide a duration for the instrument line break accident dose calculation.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
7.2 – 6	Met/AQ Accidents	Provide a list of major surface water users within 50 mi of STP Units 3 & 4, especially public water supplies.	The initial RAI response was unresponsive. Information is needed on surface water users to permit NRC staff to interpret/evaluate MACCS2 results.	7/2/2008
7.2 – 7	Met/AQ Accidents	Revise the discussion of the groundwater pathway risks for STP Units 3 & 4 to support the conclusion in the last sentence of ER Section 7.2.2.3.	The initial RAI response still lacks a complete logic chain. Provide a statement on the magnitude of potential releases to groundwater from the ABWR compared to the magnitude of potential releases from existing units.	7/2/2008
7.2 – 9	Met/AQ Accidents	Discuss ABWR DCD COL action items and open items related to severe accidents and how the action and open items will be addressed.	Provide the Appendix 19R referenced in the STP FSAR. STP FSAR, which addresses the COL action items listed in DCD Chapter 19.9, references an Appendix 19R to an unspecified document. There does not appear to be an Appendix 19R supplied with the application.	7/2/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
9.3 – 1	Alternative Sites	Explain how the Limestone alternative site satisfies NRC's siting criteria for candidate sites.	The staff requests further information regarding how the Limestone site is among the best candidate sites that can reasonably be found for the siting of a nuclear power plant (ESRP 9.3) given the water scarcity and mineral rights issues at the site. NRG is one of the planned co-owners of STP Units 3 and 4. In NRG's Limestone 3 Expansion Project Fact Sheet (http://www.nrgenergy.com/pdf/factsheet_limestone.pdf), NRG states that "to conserve scarce water resources in the area, Limestone 3 will use dry cooling to condense the steam back into water." Attachment 60 of STPNOC's RAI 7/15/08 response states that "it assumed that sufficient water could be purchased and developed for cooling at the site." STPNOC's 7/15/08 response also notes that "dry cooling is not necessarily an appropriate alternative cooling technology for ABWR units." The staff is having difficulty reconciling STPNOC's responses with the NRG statements in the Limestone 3 Fact Sheet. Specifically, if sufficient water could be purchased for the Limestone site (as stated in STPNOC's 7/15/08 response), the staff does not understand why NRG would propose dry cooling for Limestone 3 given the economic penalty of dry cooling in comparison to wet cooling. In addition, since dry cooling is proposed by NRG for Limestone 3, the staff does not understand how Limestone could be a candidate site for ABWR units for which dry cooling is an inappropriate cooling technology. In its 7/15/08 RAI response, STPNOC also states that it assumed that it could acquire the mineral and natural gas rights to the Limestone site. During the staff's visit to the Limestone site in March 2008, the staff was told by NRG personnel that the mineral rights issue was a serious concern at the site and that NRG had to initiate legal action to prevent drilling for natural gas under the ash pile at the site. Given this serious concern and assuming the mineral rights at the Limestone site could be acquired as STPNOC's 7/15/08 RAI response states, the staff does not understand why NRG has not already acquired the mineral rights. **(A)** Specify the water source that would be used for cooling STP Units 3 and 4, taking into consideration the information provided above. **(B)** Provide information regarding current ownership of the Limestone site mineral rights and the availability of these rights for purchase. **(C)** Explain how the site meets the NRC's siting criteria.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
9.3 – 2	Alternative Sites	How would inclusion of information regarding the proposed coal–fired unit 3 at the Limestone site affect the discussion of the site in section 9.3.3.1 of the ER?	Attachment 61 of STPNOC's 7/15/08 RAI response states that the siting of Limestone 3 would not change the analysis in section 9.3.3.1 of the ER which currently does not address any impacts from Limestone 3. The response further states that Limestone 3 would take advantage of existing infrastructure and that new ABWR units at the Limestone site would not significantly affect the construction and operation at the site. The staff does not understand how siting of both new ABWR units and Limestone 3 at the Limestone site would not change the analysis in section 9.3.3.1 of the ER. If work on the proposed ABWR units and Limestone 3 were being conducted concurrently, it seems that at a minimum there would be enhanced socioeconomic impacts from the two construction projects that would be pertinent to the discussion in section 9.3.3.1 of the ER. In addition, STPNOC's statement at p. 1 of Attachment 60 to the 7/15/08 RAI response (In assessing the environmental impacts of ABWR units at the Limestone site, STPNOC assumed that the ABWR would be sited there instead of a third coal-fired plant) does not seem consistent with the STPNOC statements in Attachment 61 of the 7/15/08 RAI response (STPNOC anticipated that the ABWR units would be built in the Freestone County portion of the site. STPNOC assumes that the Limestone 3 plant would take advantage of the infrastructure within the coal-fired plant area in Limestone County). The staff requests clarification of the preceding statements. The staff also requests information on who owns the mineral rights at the Freestone County portion of the Limestone site.	7/15/2008

RAI No.	Subject	RAI Summary	Full Text (Supporting Information)	Response Date
9.3 – 4	Alternative Sites	Explain how the Malakoff alternative site satisfies NRC's siting criteria for candidate sites.	The staff requests additional information on practical, specific water sources that could support wet cooling for new ABWR units located at the Malakoff site. The staff needs such specific source(s) to conduct a comparative impact analysis in the EIS. The staff was not able to identify any such water sources during their visit to the Malakoff site in March 2008. The staff also requests specific references to where the Texas Water Development Board has stated that surface water is "plentiful" (see p. 1 of Attachment 63 of STPNOC's 7/15/08 RAI response) in the vicinity of the Malakoff site.	7/15/2008
9.3 – 9	Alternative Sites	Clarify process used to select candidate sites.	The staff requests clarification of the process used by STPNOC to screen potential sites to candidate sites. Specifically, and in light of RAIs 9.3-1 and 9.3-4, the staff does not understand how STPNOC's process could lead to identification of the Limestone site and the Malakoff site as candidate sites.	New
10.5S – 2	Hydrology	Describe the analytical process used to determine cumulative impacts to downstream surface water users.	Operation of Units 3 and 4 will result in greater water withdrawal from the Colorado River than that currently used for Units 1 and 2 alone. Provide an estimate of the additional water required for the operation of Units 3 and 4 over and above that needed for the operation of Units 1 and 2. Also provide an estimate of the frequency of a discharge 300 cfs or smaller in the Colorado River downstream of the RMPF with all four units in operation.	8/14/2008
10.5S – 3	Land Use	How much land would be disturbed at the STP site in conjunction with construction of the proposed units?	There are several figures in the ER and RAI responses for the amount of land that would be disturbed in conjunction with construction of Units 3 and 4 at the STP site. Attachment 21 of STPNOC's 8/14/08 RAI response indicates 540 acres. Table 4.1-1 of Rev. 2 of the ER indicates 768 acres. Section 4.3.1.1 of Rev. 2 of the ER indicates 244 acres. Section 10.2.1.1 of Rev. 2 of the ER indicates 770 acres. The staff requests that STPNOC reconcile these numbers.	8/14/2008