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Docket Nos. 50-458/459

Mr. William Cahill, Jr.
Senior Vice President
River Bend Nuclear Group
Gulf States Utilities Company
P. O. Box 2951
Beaumont, TX 77704
Attn: Mr. J. E. Booker

Dear Mr. Cahill:

Subject: River Bend Station Units 1 and 2 - Request for Additional Information Regarding Hydrologic Engineering Safety

As a result of our review of your application for operating licenses for the River Bend Station, we have need for additional information relative to the FSAR. Enclosed please find hydrologic engineering questions raised by our contractor (PNL).

Please contact either R. Perch or J. Stefano within seven (7) days of receipt of this letter to provide your planned response date. Your expeditious action on this request is urged in order that we may maintain current review schedules.

Sincerely,

A. Schwencer, Chief
Licensing Branch No. 2
Division of Licensing

Enlosure:
As stated

cc: See next page

OFFICE	DL:LB#2/PM	DL:LB#2/BC					
SURNAME	JStefano:pt	ASchwencer					
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Hydrologic Engineering FSAR Questions
River Bend Station
Docket Nos. 50-458/459

240.5 (2.4.3.2) A minimum soil retention rate of 0.2 in/hr. was used in computing runoff due to PMP rainfall. Provide evidence that this value is conservative for the soil and cover conditions for the Grants Bayou drainage basin (including West Creek) during extremely intense rainfall events such as the PMP.

240.6 (2.4.3.2) Figure 2.4.4 (Site Area Ponds) shows a 6.7 acre pond on the eastern side of Grants Bayou about 1900 feet from the plant (Pond Number 11). Provide dam height and storage capacity of this pond. If the elevation of the top of the dam is greater then plant grade, provide an analysis showing what effect, if any, failure of the dam will have on any safety related structures, systems, and components.

240.7 (2.4.2.2) At the construction permit stage the results of the analysis of flood conditions on West Creek indicated the peak water level could reach an elevation of 98.49 ft MSL. It is stated in Section 2.4.2.2 of the FSAR that the maximum water elevation that would be produced is 95.1 ft MSL. Also, the SER for the construction permit stage discussed a PMF peak discharge of 5460 cfs for West Creek. Section 2.4.3.4.2 of the FSAR indicates a West Creek PMF of 4000 cfs. Provide a detailed discussion of the reasons for the modifications in water surface elevation and PMF discharge estimates. The data to be provided in your discussion should include channel cross sections, assumptions, and calculations to allow for an independent staff evaluation.

240.8 (2.4.3.5) During the site visit, significant sedimentation and debris accumulation was observed in the West Creek Fabriform channel. In this condition, the ability of the channel to pass the PMF or even one half of the PMF is questionable, particularly if super elevation is taken into account along the concave bankline. It appears possible that the creek could overflow the Fabriform channel and follow the course of its original channel to the open excavation for Unit 2. Depending on the volume of the flood which overtopped the channel, this could lead to high hydrostatic loads on the walls of Unit 1 which could act alone or in combination with other severe environmental loads.

a) Perform an analysis showing the effects of sediment and debris accumulation on the ability of the channel to pass the PMF, ½ PMF and 25 yr. flood. If overtopping occurs, determine the maximum water level that will result in the open excavation for each flood and discuss the effects of the resulting load combinations (OBE with ½ PMF and SSE with 25 yr flood) on safety related structures, systems and components.

List all openings and penetrations below the highest water level and describe the flood protection provided for each.

b) Describe the inspection and maintenance program that will be used to control sediment and debris accumulation in the West Creek channel. Discuss the frequency of inspections, items to be inspected, the nature of findings that will result in corrective action, and the type of action to be taken.

240.9 (9.2.5.2) In your analysis of the standby cooling tower performance following the design basis accident, you have provided the resulting evaporative water losses and water temperatures calculated using vendor supplied performance curves. Please provide these curves, and the bases therefore, which relate cold water temperature and wet bulb temperature for varying values of cooling tower flow ranging from 50 percent to 110 percent of the design rate of 33,000 gpm. Present details of and results of cold water temperature calculations using the above, including all assumptions in sufficient detail to allow an independent staff evaluation. Describe plans for verifying heat rejection performance capabilities of the standby towers.

240.10 (2.4.2.3) The characteristics of the site drainage network is highly dependent on grading and railroad track rail elevations. Provide detailed drawings of drainage areas that includes ponding locations, direction of flow, and a profile of the top of railroad track steel rails.

240.11 (2.4.13.3) A critical value in determining the probable travel time of a contaminant from a source to a potential user is the effectve porosity (n_e). Table 2.4-35 states that the value used is 0.28. This value seems to be high; justify the use of this porosity value with the geotechnical data available.

240.12 (2.4.13.2) The FSAR states that the make-up water required for the 100,000 gallon well water storage tank will be less than 200 gpm. What is the maximum sustained make-up water requirement? To what safety related use will any groundwater be made? Will one well (150 gpm) be sufficient to supply make-up water allowing the other to be held in reserve? How will pump breakdowns be handled?

240.13 (2.4.13) A number of wells and piezometers located on site are listed in Table 2.4-33. No mention is made as to the present and future disposition of all such ground penetrations. What is the method of construction used? Will they be grouted to the surface to eliminate them as a potential pathway to the groundwater in the event of a radioactive spill? Will you operate any groundwater underdrain system? If so please provide the information identified in Branch Technical Position HGEB-1 (See SRP Section 2.4.12, NUREG 0800).