



**GULF STATES UTILITIES COMPANY**

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February 1, 1979

RBG-6081  
File G9.5

Mr. W. C. Seidle, Chief  
Reactor Construction & Engineering  
Support Branch  
U. S. NRC, Region IV  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011

Dear Mr. Seidle:

River Bend Station - Units 1 & 2  
Docket Nos. 50-458, 50-459

Reference: RIV Docket Nos. 50-458/Rpt. 78-04  
50-459/Rpt. 78-04

Audit report 78-04 requested certain additional information from Gulf States Utilities concerning the culvert crossing over the Alligator Bayou at the River Bend site. In response thereto, Gulf States is submitting the following:

- Attachment 1 - "Alligator Bayou Flood Study" which addresses the NRC's request for an additional hydrology case to consider coincidental River flooding and anticipated rainfall
- Attachment 2 - "Discussion of Possible Mitigating Actions - Alligator Bayou Crossing" which addresses the NRC's request for a discussion of possible mitigating actions as they pertain to potential environmental impacts.

Sincerely,

L. L. Humphreys  
Senior Vice President  
Engineering & Construction

Attachments

7903080544

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

STATE OF TEXAS

COUNTY OF JEFFERSON

In the Matter of

GULF STATES UTILITIES COMPANY

(River Bend Station,  
Units 1 and 2)

Y  
Y  
Y  
Y  
Y  
Y  
Y  
Y  
Y  
Y

Docket Nos. 50-458  
50-459

AFFIDAVIT

L. L. HUMPHREYS, being duly sworn, states that he is a Senior Vice President of Gulf States Utilities Company; that he is authorized on the part of said Company to sign and file with the Nuclear Regulatory Commission the documents attached hereto; that he has read all of the statements contained in such documents attached thereto and made a part thereof; and that all such statements made and matters set forth therein are true and correct to the best of his knowledge, information and belief.

L. L. Humphreys  
L. L. HUMPHREYS

Subscribed and sworn to before me, a Notary Public in and for the State and County above named, this 1<sup>st</sup> day of February, 1979.

Clara S. Ellis  
Notary Public in and for  
Jefferson County, Texas

My Commission Expires:

10-26-80

2/1/79

Attachment#2

Discussion of Possible Mitigating Actions - Alligator Bayou Crossing

The following is being submitted in response to NRC request 2 of Attachment 2 to Audit report 78-04 (RIV Docket Nos. 50-458, 50-459/Rpt 78-04).

Since the completion of construction of the Alligator Bayou culvert crossing (approximately 16 months ago), actual conditions at the site have not led to the identification of a significant adverse environmental impact. Gulf States believes as it did when it originally installed the culverts, that the culvert crossing represents the best alternative for crossing Alligator Bayou when considering the combined environmental and economical impacts. Also Gulf States is committed to take appropriate action should the on-going aquatic study identify an actual significant adverse environmental impact.

Addressing mitigating actions is a difficult task with regard to the culvert crossing of Alligator Bayou in that a significant adverse environmental impact attributable to the culverts has yet to be defined at the site. It then becomes very difficult to project what action will be taken to mitigate an as yet defined significant adverse environmental impact. In order for this to be more meaningful, GSU examined potential significant adverse environmental impacts and possible mitigating actions.

In formulating this mitigating action plan it was necessary to identify the areas where potential for significant adverse environmental impacts exist and then to examine the possible ways of reducing or eliminating these impacts. Potential adverse environmental impacts may present themselves with regard to the hydrology and the aquatic life of the floodplain.

With regard to the potential for a hydrology impact, a hydrology modeling effort undertaken by GSU predicts that the 12 culvert design represents a potential for increased flooding on the floodplain and also indicates a potential for over bank topping. The possible impact resulting from the predicted flooding is not believed to be significant when compared to normal floodplain inundations resulting from the natural cycles of the Mississippi River. Also since the culverts have been open for flow, actual over bank topping has not occurred. Several factors may account for this variation from the model. Consequently to better understand the hydrology of the area and the modeling, level gages are being installed on both sides of the culverts and rain gage equipment is being placed in the drainage basin.

The potential for an aquatic impact centers on the possible hindrance to the movement of the riverine fish on the floodplain during River flood periods. This is presently being studied by Louisiana State University under contract to GSU. No significant River flooding has occurred since actual data collection began which has prevented determining an aquatic impact.

The following alternatives are being considered with regard to their ability to lessen the restriction to water flow as is present by the 12 culvert design. Lessening this restriction would increase water flow at the Bayou crossing and therefore reduce the potential for flooding, over bank topping, and possibly the hindrance to riverine fish movement.

One possible alternative examined was the feasibility for installing an additional 12 culverts resulting in a 24 culvert design. This would increase the flow area and therefore pass more water than the 12 culverts. This alternative would then reduce the potential for a hydrology impact. The preliminary cost estimate for this alternative (which like the cost estimates for all alternatives addressed in this plan are subject to some change if and when detailed engineering is necessary) is approximately \$500,000.

A second possible alternative would entail replacing the 12 culvert design with a light weight bridge. Since the light weight bridge would not accommodate the heavy reactor pressure vessel hauls, initiation of this alternative would be dependent on the schedule for these hauls. Bayou flow for this case would be enhanced which would reduce the potential for hydrology and aquatic impacts. The preliminary cost estimate for this alternative is approximately \$950,000.

A third possible alternative would involve maintaining the existing 12 culvert design and augmenting it with the installation of a light weight bridge and the formation of an opening in the River Access Road adjacent to the bridge. This would allow all weather

construction access and would also increase flow (12 culverts plus bridge and opening). Then when a reactor pressure vessel haul is made across the Road, the opening would be refilled allowing passage. Once the heavy haul was made, the opening would be formed again, thus accommodating the additional water flow. Increasing the flow of water in the Bayou reduces the potential for a hydrology impact and the out of flood season scheduling of the reactor pressure vessel hauls would then reduce the restriction to the movement of the riverine fish during River flooding. The preliminary cost estimate for this alternative including fill and openings for two reactor pressure vessel transports is estimated at approximately \$1,000,000.

A fourth possible alternative considered could be the replacement of the existing 12 culvert design with the ER (Section 4.1.1.4 and 4.1.3) type bridge. This would minimize the potential for flooding and fish movement impacts to the levels that would have resulted from the ER approved design. A bridge of this type would also be substantial enough to accommodate the reactor pressure vessel hauls. The preliminary cost estimate for this alternative is approximately \$3,000,000.

To initiate a mitigating action, a significant adverse environmental impact must first be identified and a viable alternative must exist. GSU will advise the Nuclear Regulatory Commission (NRC) Office of Inspection and Enforcement Region IV of the identification of any significant adverse environmental impact and will apprise the NRC of GSU's corrective action to mitigate that impact prior to initiating the construction of the corrective action.

GSU also recognizes the possibility that other significant adverse environmental impacts may be discovered in relation to this matter. Should this occur, GSU will notify the NRC of the discovery and GSU's plans for mitigation. There is also the possibility that GSU may wish to employ other alternatives as yet identified as mitigation actions. Should this occur, GSU will notify the NRC of its intent to initiate this new alternative prior to the start of construction of this alternative.