

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Mark R. Vickery, P.G., *Executive Director*



TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 21, 2009

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, DC 20426

Re: Toledo Bend Relicensing FERC Project No. 2305-020

Dear Ms. Bose:

This letter is in response to the request for comments related to the Notice of Intent (NOI), Pre-Application Document (PAD), Scoping Document 1 (SD1), and study requests for the Toledo Bend Relicensing Project (Project) No. 2305 for the Sabine River Authority's hydroelectric project. The Texas Commission on Environmental Quality (TCEQ) appreciates the opportunity to review the above referenced documents and provide comments at this early stage of the relicensing process.

The TCEQ is the Texas agency responsible for conducting the review of the Project under Section 401 of the Clean Water Act (CWA). The purpose of the 401 certification is to ensure that the Project activities under the TCEQ's jurisdiction meet the Texas water quality standards and will maintain the chemical, physical and biological integrity of Texas state waters. The following comments are provided to the Federal Energy Regulatory Commission (FERC) as part of the preapplication process of the §401 CWA water quality certification review of the Project.

The designated uses in the Texas Surface Water Quality Standards (WQS), 30 Texas Administrative Code, Chapter 307, for the Sabine River Above Tidal (Segment 0502), Sabine River Above Caney Creek (Segment 0503), and Toledo Bend Reservoir (Segment 0504) are contact recreation, public water supply, and high aquatic life uses with a corresponding 5.0 mg/L dissolved oxygen criterion. In order to evaluate the attainability of uses within these segments of the Sabine River, it is critical that the Project's zone of operational influence be accurately determined using the best water quality, hydrological, biological, and habitat data available. A clear definition of the zone of operational influence is necessary to define the scope of all other study efforts associated with the Project.

The TCEQ has reviewed the reports and proposed studies plans provided in the PAD. Our comments are focused on addressing data needs for the water quality certification decision and are offered as suggested revisions to studies already identified in the PAD. Since these studies are in the PAD TCEQ offers these suggested enhancements to existing study plans rather than defining new study plans separately for similar studies. We have also provided a new study request to address direct impacts to water quality downstream of the Project consistent with the criteria provided in the scoping document. That request is provided as a separate attachment to this letter.

Ms. Kimberly D. Bose
Federal Energy Regulatory Commission
FERC Project No. 2305
Page 2
January 21, 2009

Appendix C of the PAD provides a preliminary determination for the zone of Project operational influence on the Sabine River downstream of Toledo Bend dam. A visual review of the study's hydrographs (Figures 3.1-1 through 3/1-13) indicates the influence of the Toledo Bend dam releases extend downstream beyond River Mile (RM) 71. As Phillips (2007) notes, under low flow conditions a strong influence from dam releases exists as far downstream as lower Shoats Creek (RM 54). Since the primary hydroelectric peaking releases from the Project occur during the low flow summer months this influence needs to be addressed. Also Phillips and Slattery (2007) state that dam release pulses are clearly imposed on a general downward trend in flow at the Deweyville gaging station (RM 31). The important point for consideration is how the dam releases influence the downstream aquatic resources during low flows and including hourly and daily intervals. Therefore, it is recommended that at a minimum the zone of operational influence include the downstream reach of the lower Sabine River from the Toledo Bend dam to Cutoff Bayou (RM 29). The TCEQ remains available to review additional information if there is additional data or analysis to discount the conclusions of these previous studies.

The License Articles and Amendments for the Project are included in the PAD. The Order Amending License Article 401 (issued August 8, 2006) requires the discharge of a continuous minimum flow of 144 cubic feet per second (cfs) from the spillway from the Toledo Bend Project. The information in the PAD does not explain the basis for this minimum flow leaving the assumption that the minimum continuous flow is required in order to maintain the ecological health of the Sabine River downstream of the Toledo Bend dam. Based on TCEQ staff's conversations with the applicant, TCEQ understands this assumption may not be correct. Review of the technical basis for the determination of the 144 cfs flow level is needed to evaluate the potential for additional ecological benefit that could result from alternative subsistence flow releases. The current WQS define the lowest seven-day two-year low flow (7Q2) for any portion of TCEQ Segment 0502, and Segment 0503 as 438.8 cfs. Details on the use of the 7Q2 value in determining the dilution flows for wastewater discharge permits are described in TCEQ's *Procedures to Implement the Texas Surface Water Quality Standards*.

The Order Amending License Article 402 (issued August 8, 2006) requires the licensee to develop a dissolved oxygen (DO) monitoring plan. The Article requires that the plan include a provision for the rapid alteration of the Project operation to ensure that water quality standards for dissolved oxygen are maintained downstream of the low-flow sluiceway. Discussions between the Project staff and TCEQ staff indicate this provision was only intended to be implemented if a mini-hydro unit was added to the Project. Since the Project has not added a mini-hydro, the development of the plan has not proceeded. However, TCEQ understands the revised license will include this mini-hydro feature. In addition to dissolved oxygen, the monitoring plan, at a minimum, should include temperature and be operational during the period of operation for the Project. Also the article should be amended to reflect that the TCEQ has replaced the Texas Water Development Board as a Texas agency to coordinate with on the development of the monitoring plan. Please see the attached proposed study plan for additional details.

Ms. Kimberly D. Bose
Federal Energy Regulatory Commission
FERC Project No. 2305
Page 3
January 21, 2009

Groundwater flows can have a significant impact on surface water quality and quantity, especially in braided riverine systems. The study provided in Appendix C of the PAD concludes that there appears to be no groundwater connection between the mainstem Sabine River and the interior bottomland oxbow lakes. However, a visual review of Figure 3.1-20 does indicate a rise in the oxbow lake surface elevation following elevated river flows. The report does not provide an explanation for this observed rise in oxbow elevation. The increased oxbow surface elevation could be caused by the preceding increased head pressure from the high river flows followed by a gradual decline in oxbow surface elevation following the lower river stage. Additional data from other oxbows or continued monitoring of existing sites would be helpful in understanding the single oxbow hydrograph presented in the PAD.

The study report also states that two bottomland transects were conducted during the June 2008 data review. Narrative descriptions are provided for three transects located at RM 99, RM 82, and RM 74. It would be useful to have the bottomland transect results presented in a detailed graphic format to evaluate the potential effects of Project operations on the bottomland botanical communities. Based on the Lidar and cross-sectional views of the sample points in figures 3.1-15, 3.1-17, and 3.1-19 it is unclear why the range of elevations present were not sampled. A better understanding of the community composition of the lower elevation areas would be useful in understanding potential consequences of alternative flow regimes regarding connectivity between bottomland wetlands and the Sabine River. Further field investigations including the use a functional assessment tool such as the Hydrogeomorphic (HGM) assessment models currently used by the Galveston district of the U.S. Army Corps of Engineers are needed to evaluate the potential influence of groundwater and bottomland connectivity on the duration of wet periods during high flow events in the main river channel. Additionally National Wetlands Inventory (NWI) maps, such as presented in PAD Appendix E for the Toledo Bend reservoir, for the downstream bottomland areas in the zone of operational impact should be provided. Those maps could then be overlaid on other data layers to better understand the impacts to the bottomland wetlands in the zone of operation influence. These additional information requests are made to support the TCEQ's review of Project impacts and alternatives.

The stated goal of the Downstream Aquatic Resources Study Plan (PAD Appendix G) is to evaluate the extent and magnitude of operational effects of the aquatic resources and to determine the relationship between aquatic resource community health and patterns of physical habitat alteration resulting from the operation of the Project. This analysis should include consideration of connectivity between downstream aquatic resources and upstream of the dam. As proposed, the study only includes the sampling of fishes and mussels at selected sites in Sabine River reaches directly downstream of the Toledo Bend Dam (15 miles plus 1.5 miles of tailrace). Established TCEQ procedures include the assessment of benthic macroinvertebrate as part of the assessment of the aquatic life uses in Texas. It is recommended that benthic macroinvertebrates be included in the study plan for the assessment of the aquatic health of the Sabine River reaches directly downstream of the Toledo Bend Dam. The study plan should also include monitoring of water quality

Ms. Kimberly D. Bose
Federal Energy Regulatory Commission
FERC Project No. 2305
Page 4
January 21, 2009

parameters (i.e., temperature, conductivity, pH, dissolved oxygen, etc.) to document the effects of the Toledo Bend dam releases on aquatic organisms in the downstream receiving waters. TCEQ has worked closely with the Clean River Program partners through the years using standardized and established methodologies for the collection and analysis of biological, hydrological, habitat, and water quality data. These methodologies are detailed in the TCEQ *Surface Water Quality Monitoring Procedures, Volumes 1 and 2*.

The TCEQ supports FERC's proposal to prepare an Environmental Impact Statement (EIS) and considers an EIS as an efficient method to develop and coordinate the TCEQ and other stakeholders participation in the review of the Project. TCEQ recognizes and supports that the review of alternatives does not include either a Nonpower License or Project Decommissioning. However, defining the baseline condition for the comparison of alternatives needs additional detail. The TCEQ *Surface Water Quality Monitoring Procedures, Volume 2* provides reference to existing TCEQ indices for the assessment of biological integrity. Various sections of the PAD mention ecological health but do not define the methodology used to assess that health. TCEQ methods, or an approved Project specific methodology, need to be defined as the baseline for reviewing alternatives at this early stage of the review. Establishing the reference condition for Project review is especially important in the consideration of long term Project impacts if they are cumulative on the downstream resources. Therefore, it is recommended that additional data be collected in order to determine baseline (reference) conditions and potential impacts to the ecological integrity of the Sabine River downstream of the Project.

The TCEQ looks forward to continued coordination with FERC and the applicant in the development of the pertinent information and analysis as part of the Environmental Impact Statement for the Project. Please address all correspondence regarding TCEQ's participation in the FERC process, including the coordination of study plan meetings, to Mr. Robert Hansen of the Water Quality Division MC-150, P.O. Box 13087, Austin, Texas 78711-3087. Mr. Hansen may also be contacted by e-mail at rhansen@tceq.state.tx.us, or by telephone at (512) 239-4583.

Sincerely,



L'Oreal W. Stepney, P.E., Director
Water Quality Division
Texas Commission on Environmental Quality

Enclosure

cc: Mr. Melvin Swoboda, Toledo Bend Project Licensing Manager, P.O. Box 579, Orange Texas,
77631-0579

**TCEQ Study Plan Request
FERC Project No. 2305-020
January 21, 2009**

Goals and Objectives

Determine the longitudinal and lateral range of influence of the Toledo Bend Project (Project) and the ecological health of the lower Sabine River and adjacent bottomlands.

Resource Management Goals

Under §401 of the Clean Water Act (CWA), it is the responsibility of TCEQ to certify that activities under the agency's jurisdiction will maintain the chemical, physical, and biological integrity of the state's waters. It is also the responsibility of TCEQ to insure that activities under the agency's jurisdiction meet the water quality standards and designated uses for classified segments within the state of Texas. This study will provide data necessary to evaluate the baseline (reference) conditions for the classified segments of the lower Sabine River and determine the attainable uses and criteria for these segments.

Need for Additional Information

While some water quality, habitat, flow, and biological data are available for some reaches of the Sabine River downstream of the Project. Additional water quality data are needed to evaluate the zone of operational influence and level of ecological integrity, especially during the months of historical low flows in the lower Sabine River. Most existing data has been collected as a single grab sample. These samples have only rarely been collected more frequently than on a monthly interval.

This study request water quality data (dissolved oxygen, temperature, conductivity, pH, and turbidity) be collected at a minimum of hourly to understand the short and longer term in these parameters. Water quality data should be collected at multiple downstream sites along a longitudinal transect of the zone of operational influence. In order to maximize the ability to integrate this information into the assessment of the overall ecological health for the evaluation of aquatic life uses biological monitoring should include fish, and benthic macroinvertebrates,

Project Nexus

As identified by Article 402 of the existing license, there is a need to study the potential for the project operation to result in direct impact to existing numeric water quality criteria.

Sampling Methodology

Water quality, biological, and habitat monitoring should be conducted in accordance with established TCEQ *Surface Water Quality Monitoring Procedures*. These protocols are well established as a major component of the Clean Rivers Program for monitoring and assessing surface waters throughout the state of Texas. Water quality parameters should be collected by automated samplers at a maximum of 30 minute interval to adequately understand their short and longer term fluxes. Multiple biological and habitat sampling should be conducted consistent with the biological index periods described in the TCEQ *Surface Water Quality Monitoring Procedures* and should be designed to complement the proposed aquatic resource study plan.

Level of Effort and Cost

The proposed study plan can be implemented with a modest effort.

Document Content(s)

TCEQ Comments on FERC RElicensing Project No. 2305-020.PDF.....1-6