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**PROJECT NO. 24770**

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| **REPORT OF THE ELECTRIC** | § | **PUBLIC UTILITY** |
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| **(ERCOT) TO THE PUCT REGARDING** | § | **COMMISSION** |
| **IMPLEMENTATION OF ITS** | § | |
| **PROTOCOLS** | § | **OF TEXAS** |

## RESPONSE OF TXI TO ORDER NO. 13

Texas Industries, Inc ("TXI") offers the following comments in response to Question No. 3 in Order No. 13, which asks:

> 3. What other proposals would encourage the participation of load in the ancillary services market? Describe each proposal in detail and state whether it is intended to supplement or supplant the load-only QSE proposal set forth above. Compare the benefits and problems associated with each proposed alternative. With respect to each such proposal, specifically address anticipated systems related ERCOT implementation issues.

### I.
### Introduction

Chaparral Steel, a wholly owned subsidiary of TXI, has been an instantaneously interruptible customer under TXU's Rider I for almost 20 years. Its role as a demand side resource ended on December 31, 2001, with the termination of TXU's regulated tariffs and TXU's removal of existing under frequency relays ("UFR") on the TXU system. Prior to termination of Rider I, almost all of Chaparral's loads were instantaneously interruptible and TXU was able to count Chaparral's loads, as well as other Rider I loads, toward satisfaction of TXU's spinning reserve requirement. Furthermore, TXU was able to exclude Chaparral's loads from TXU's long term load forecasts, thereby reducing the amount of capacity that TXU would otherwise have been required to build. TXU has acknowledged in prior rate cases that Chaparral's UFR load helped meet TXU's spinning reserve requirement. This is a very important issue because, absent changes to the current ERCOT Protocols, Chaparral Steel's loads, as well as many other loads on the TXU system, will find themselves unable to cost justify the continued use of UFRs. Indeed, the creation of the Demand Side Working Group



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("DSWG") was attributable in part to the Commission's concern that traditional UFR loads would no longer be able economically to continue to operate as instantaneously interruptible loads on the ERCOT system. TXI has been an active participant in the DSWG. In addition, these issues are being addressed at the Commission in Project No. 24333, *PUC Activities Promoting Price-Responsive Demand for Electricity.*

TXI is grateful that the Commission found the funds to hire a third party independent consultant to evaluate demand participation issues in ERCOT's ancillary services market. The Preliminary Memorandum prepared by Lauritis R. Christensen Associates, Inc. does an excellent job of focusing the issues that have been the subject of much discussion during DSWG meetings over the past year. The preliminary recommendations, if adopted, will greatly facilitate the use of demand side resources to provide Ancillary Services, which in turn should provide cost savings for ERCOT consumers. TXI fully supports the analysis undertaken by Dr. Kelly Eakin, as indicated by the following comments.

## II.
## Problems with Protocols for Variable Loads

Two major problems which Chaparral Steel and other variable loads have with the Protocols are readily identifiable. First and foremost, the Protocols make it difficult if not impossible for loads to be able to bid a quantity of load that the loads are confident will be available on the system at the moment of interruption. A principal reason for this is that ERCOT looks at the two second interval immediately preceding interruption to determine, in the case of Responsive Reserve, how much Responsive Reserve has been provided. Chaparral can give a pretty good estimate of what its energy consumption and demand will be on a day ahead basis. On an hourly basis, or even a 15 minute ahead basis, Chaparral can give a much better estimate of its demand and energy levels for the next time interval. However, there is no way in which Chaparral can predict with any accuracy what its load will be from second to second. Effectively, ERCOT is looking at instantaneous demand instead of demand spread over some reasonable time interval for purposes of determining the amount of load shed.

This is problematic for many types of loads, not just arc furnace loads. TXI recognizes that under the current Protocols, performance is measured at the QSE level, not at the load level, but if a load on a stand alone basis cannot meet the Protocols' requirements, the load may not be valued by the QSE as a demand side resource and the compensation provided by the QSE to the load may be nominal, at best. The Preliminary Memorandum resolves this issue in a reasonable way by recommending that for each load or aggregation of loads, historic performance should provide a reasonable basis for assessing the uncertainty as to how much load will be on line at the moment of interruption. TXI agrees with this recommendation, and submits that many loads will not be able to participate as a demand side resource absent its adoption. The importance of the use of "effective quantities" to quantify the uncertainty in each resource's performance cannot be overstated. As noted by Dr. Eakin, there is no qualitative difference in the provisioning of Ancillary Services by loads as opposed to generation–only quantitative differences, and quantitative differences are easily resolvable by the use of "effective quantities", with performance measured based on historical performance.

As Dr. Eakin further noted, for each resource that promises to provide a service, any capacity payments should reflect the reasonably anticipated performance of that resource, where the "reasonably anticipated performance" should generally be based on past performance. This is a critical issue for many loads. How this issue is resolved by ERCOT and the PUCT will determine in large measure whether many ERCOT loads that historically provided spinning reserve will now be able to bid into the Ancillary Services market for Responsive Reserve.

A second problem for variable loads concerns the current 20% cap on the amount of load that can be shed without penalty, relative to the amount of UFR load bid as Responsive Reserve in the Ancillary Services market. Again, the two second measurement interval is a real problem in this context. If ERCOT is going to monitor whether a load at all times prior to interruption is at a level or in excess of the bid amount, measured in two second intervals, the load has no choice but to bid as conservatively as possible. Amazingly, a 50 MW load can have a 98% load factor but still have a load of 0 MW in a given two second interval. In that case, the load really cannot bid unless the measurement interval is greatly expanded. Where a given load can

fluctuate between 25 MW and 50 MW, for example, the load cannot bid above the 25 MW floor without virtually being assured that at some point prior to being called on to interrupt, the load will be less than the bid amount during at least one two-second interval. To avoid this problem, the measurement has got to be based on average demand over some reasonable time period. Whatever the measurement interval adopted, there has to be acceptance of the possibility of over-provisioning, since that result goes hand in hand with the need to bid conservatively. TXI commends Dr. Eakin for again offering a real solution to this problem. As noted by Dr. Eakin, he believes that over-performance should not be prohibited. Instead, as Dr. Eakin observed, if over-performance has value, resources should be paid for that value, even if it is in excess of 120% of the amount promised, and if the value of the over-performance is lower than that of promised performance, the price paid for over-performance should be lower than that paid for promised performance. This is a far more rational way of dealing with the over-performance issue, than is equating over-performance with non-performance. Furthermore, TXI believes that over-performance does indeed provide value for ERCOT.

The only argument TXI has heard against over-provisioning is the notion that over-performance creates ERCOT system reliability concerns in the form of "frequency over-shoot." This argument should not be accepted without critical examination. TXI submits that this claim has been blown wildly out of proportion, and in fact may not present a credible scenario at all. Prior to January 1, 2002, TXU had amounts of instantaneously interruptible UFR loads on its system far in excess of the amounts needed to meet its spinning reserve obligation. Yet to the best of TXI's knowledge (and we would have known), not once did TXU ever state to the Commission or its Rider I customers that the excess UFR load caused "frequency over-shoot." It did not occur, and TXI submits that the claims being made now regarding frequency-overshoot cannot be substantiated.

At the ROS meeting in early July, Vance Beauregard gave a status report presentation regarding the study currently underway to determine how much Responsive Reserve can be supplied by UFR loads without causing reliability problems for the system. Two very interesting points were made in that presentation. First, the presenters noted that, at least during the Fall and Spring, ERCOT needs substantially more

Responsive Reserve than it currently requires. This suggests that the over-provisioning of Responsive Reserve by UFR loads is unlikely to cause "frequency over-shoot" any time soon, and may actually improve the reliability of the ERCOT system. Second, the presenters advised that they are getting unexpected results from their computer runs. Despite their adjustment of a variety of variables they have not been able in any of their runs to date to produce a frequency-overshoot situation. According to the presenters, this can only mean one of two things: either there is a flaw in the model that they have not been able to identify and isolate to date, or frequency over-shoot is not a concern and does not represent a valid basis for limiting the amount of UFR load that can provided as Responsive Reserve. That analysis has yet to be finalized and so we must all await the final conclusions. However, this drives home the fact that the reliability concerns raised by certain parties should not necessarily be taken at face value. It may indeed be the case that there is no credible engineering reliability argument that can be made for prohibiting UFR loads from over-performing at the time a load's UFR is tripped.

In summary, TXI believes that Lauritis R. Christensen Associates, Inc. has done a very good job in its Preliminary Memorandum of identifying impediments to demand side participation in the Ancillary Services market, and has for the issues of most importance to TXI proposed conceptual solutions that TXI believes will work for all stakeholders. TXI encourages the Commission and its consultant to move forward with the proposals outlined in the Preliminary Memorandum.

Respectfully Submitted,

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