

## **ERCOT Steel Mills “Business Function” Comments on NPRR 1191**

The ERCOT Steel Mills appreciate the opportunity to submit these comments on ERCOT’s proposed NPRR 1191 and associated revision requests NOGRR 256, PGRR 111 and RRGRR 036.

The Steel Mills are a group of large steel production loads within ERCOT that have been operating in the ERCOT region longer than ERCOT has been operational, with similar physical operational characteristics as seen today. The Steel Mills are familiar with the costs, benefits, and challenges of operating large industrial loads and have a keen interest in assuring the reliability of electric service to all consumers in ERCOT.

However, absent substantial modification, NPRR 1191 would prevent the continued operational viability of the ERCOT Steel Mill loads and preclude the location of any new mills within ERCOT. The steel industry in Texas is at stake with these proposals. Steel manufacturing is a critical industry for the Texas economy, employing thousands of highly paid workers. Their livelihood, as well as the continued economic viability of the ERCOT Steel Mills, will be imperiled if NPRR 1191 is adopted as written.

The Steel Mills offer the following “business function” comments for consideration by ERCOT and reserve the right to modify or supplement our comments as this process continues.

### **1. Ramp Rate Constraints.**

Imposition of the proposed ramp requirement is fundamentally at odds with the design and operational characteristics of electric arc furnaces (“EAF”) used by the Steel Mills to produce steel. An EAF generally does not change power demand except to totally stop consuming or to reinitiate consumption almost instantaneously. An EAF is either on or off and the operator does not control the EAF’s electrical power throughout a melt cycle. An EAF’s electricity consumption moves up and down based on natural physical characteristics of the raw materials being melted and the process steps of steel production. For example, a large piece of scrap metal shifting inside of the EAF will cause a temporary increase or decrease in electricity consumption. Simply stated, our steel mills are physically incapable of following the ramp rates specified in the draft NPRR. These mills have been operating in the same manner within the ERCOT region for longer than ERCOT has been formed. The imposition of ramping requirements on steel melting facilities would not only impact the current operation of these type of plants but would also preclude the improvement and expansion of these facilities and prevent the siting of new steel plants in Texas. The ramping requirement must not be applicable to steel mill loads and/or any loads that cannot control and change load according to a set MW per minute constraint for operational reasons.

Even were a steel mill capable of ramping, which it is not, a ramping requirement would prevent a steel mill from operating in an economically viable manner, as the mill would not be able to follow the ramping requirement specified in NPRR 1191 without severe disruption of the steel production batch-process. By our calculation, the ramping requirement in NPRR 1191 would enormously increase the time to produce a heat (batch) of steel, by adding as much as 50 minutes (2% of peak demand per minute) of time to reach full peak demand and 20 minutes (5% of peak demand per

minute) to reduce peak demand to zero every time EAF operations would require ramping power up or down. As a simple illustration, assuming a 35-minute heat to currently produce a batch of steel, just a single ramp up and down would increase the time to produce the batch of steel by up to 70 minutes and thereby reduce steel production by approximately two-thirds, destroying the mill's ability to produce and market its products at a competitive price (as compared with mills that do not operate in ERCOT and would not be subject to such ramping requirements). However, this description of the economic harm the proposed ramping requirement would impose on steel mills may be an academic exercise, given that the ERCOT Steel Mills are physically incapable of the proposed ramping.

ERCOT should also be aware that applying the proposed ramping constraints to existing large loads will have an enormous negative impact on the ability to provide meaningful demand response by these loads, many of which have been providing demand response as a useful reliability tool. Most facilities have only the capability to reduce load quickly by opening feeder breakers that may be located within the consumer's physical plant. ERCOT must be wary that such ramping constraints will have a significant impact on industrial loads that respond to price. For example, although the real-time market price would continue to change every 5 minutes, the customer could only fully ramp down over 20 minutes and fully ramping up could require 50 minutes. As a result, the imposition of ramp rates on Large Loads would impair, if not virtually eliminate, their ability to engage in meaningful passive price responsive demand response-- a key element of our "energy only" market which relies on load response to temper real-time scarcity prices and increase available reserves. After all, in an energy only market, high real-time prices usually indicate the need for a reliability-based action that is currently provided by the demand response of Large Loads.

An end-use customer's ability to cease consumption when prices have increased to scarcity levels is a fundamental consumer right and critical to the effective operation of the market. The imposition of a ramping requirement on Large Loads would require the end-use customer to continue to consume electricity, potentially at very high prices, (or not to consume electricity depending on circumstances) during the ramping period, regardless of the economic consequences to the end-user. This would likely prove economically unacceptable for many loads subject to the ramping requirement.

## 2. **Grandfathering.**

The Steel Mills appreciate the effort by ERCOT to grandfather existing Large Loads from the ramping provisions. Indeed, we support grandfathering all existing Large Loads from all of the proposed new requirements. Unfortunately, however, the grandfathering provision in NPRR 1191 is unworkable as written and does not provide reasonable assurance of the continued ability of existing steel mills (or potentially other existing large loads) within ERCOT to operate. Moreover, the grandfathering provision does not provide for reasonable modification to or expansion of such existing manufacturing facilities.

First, NPPR 1191 (specifically, sec. 6.5.7.12(6)) would require a steel mill to notify ERCOT whenever any piece of equipment is to be “retired, replaced, or otherwise modified...” A steel mill would then need to obtain a determination from ERCOT that the retirement, replacement or modification would not be deemed by ERCOT, in its sole discretion, a “material change.” Absent that determination, the mill would lose its grandfathered status and would be required to comply with a ramping requirement that is neither physically nor economically possible for the mill to comply with, given the operational and design characteristics of an EAF. This is unworkable and must be addressed. In a large industrial facility, changes or modifications of equipment are a routine occurrence. A steel mill cannot operate efficiently if it is subject to regulatory reporting and oversight of any equipment changes or modifications that are routinely required. The risk of losing grandfathered status would also serve as a serious disincentive for a mill to undertake equipment replacements or modifications needed for environmental, safety, or efficiency reasons, or for any other reason for that matter. Requiring a steel mill to have constant interaction with ERCOT would also grossly interfere with the facility operator’s ability to manage efficiency, environmental, and maintenance requirements on a daily basis.

Another element of the proposed grandfathering language that is unworkable is the specification that an increase in load of as little as 1 MW could, under the material change language, cause the loss of grandfathered status if deemed a material change. In an industrial facility the size of a steel mill, a 1 MW change in load is not an unusual occurrence. A much larger number than 1 MW is necessary if meaningful grandfathering protection is intended to be extended to existing loads. How much larger would in part depend upon how the MW threshold is measured. In our view, the MW threshold should be based on average power use/demand, not peak demand.

The “material change” language of NPPR 1191 is also highly problematic because there is no guidance by statute, rule, or protocol as to how the language is to be interpreted or applied. It requires a subjective determination on ERCOT’s part with no assurance that the load would have any advance knowledge of whether a change in demand constituted a material change, and no meaningful input by the load into ERCOT’s determination. Any grandfathering provision in NPPR 1191 should provide a meaningful and substantial safe harbor within which load changes will not be considered a “material change”. Loads need the assurance that changes within the MW threshold will not be considered material by ERCOT in order to properly evaluate potential investments and operational changes.

Given these issues, the best course, would be to simply fully grandfather and exempt all existing non-crypto loads/customers/sites, including increases in load, modifications and/or expansions, from proposed new Large Load requirements, including ramping.

### 3. **Authority to impose registration and associated reporting requirements on load.**

The Legislature in SB 1929, relating to the registration of virtual currency mining facilities in the ERCOT power region, authorized ERCOT to impose registration requirements on loads that specifically use electric power for the purpose of virtual currency mining. The legislative mandate

in SB 1929 does not, however, apply to other types of loads. The fact that the Legislature imposed a registration requirement only on virtual currency miners indicates that the Legislature thought it necessary for ERCOT to require registration only for those specific loads. The fact that the registration requirement was not extended to other specific load types clearly suggests that ERCOT was not intended by the Legislature to extend its authority with respect to other end-use customers, absent legislation.

ERCOT already has the ability to obtain information about significant changes in plant load or operations from the facility's TDSP. The TDSP should be aware of the type of load it is serving and of any major facility changes a mill might make that would affect the facility's total demand, as part of its obligation to monitor and ensure the adequacy of its facilities serving its customers. TDSPs already collect annual information requests on any planned changes in load for a Large Load, as well as on the load's load type and operating characteristics. TDSPs already conduct formal processes for interconnection and any necessary upgrades due to load changes. TDSPs are therefore well positioned to notify ERCOT of any significant changes contemplated by a Large Load. The TDSP already has all of the relevant data, and there is an established business relationship between the TDSPs and ERCOT. Any significant material change in a load's demand or load characteristics would be known to the TDSP. As ERCOT has undisputed authority to impose operational, reporting, and compliance requirements on TDSPs, and ERCOT does not for end-use customers, the TDSP might be a more logical entity on whom the reporting requirement can be placed, if a registration requirement for non-crypto loads is ultimately required.

#### 4. **Confidentiality.**

The Steel Mills raise the additional concern of confidentiality of proprietary business information that may arise through registration and other reporting requirements. ERCOT is seeking disaggregated information that is essential to the business operations of large loads. This information should be treated with the upmost confidentiality and publicly reported only in aggregated format.

#### 5. **Large Load Information.**

The Steel Mills understand the value of information on Large Loads in providing load forecasting and real-time operator information. However, ERCOT already has a wealth of information available to it due to the fact that ERCOT's State Estimator software already produces quality load information on most large substations on the ERCOT grid. The State Estimator software is critical to the accuracy of recommended actions and real-time pricing resulting in Security Constrained Economic Dispatch. ERCOT stated in the last workshop that there are 170+ Large Loads currently modeled in their EMS systems. It is not too farfetched to link displays and aggregate totals of Large Loads on Operator displays along with current real-time prices. ERCOT could source software that "empirically" studies the actions of these loads' response to prices and could predict their actions

by observation over long periods of study. This information could then be used to feed Bus Load Forecast software and feed into ERCOT's security analysis programs that study reliability issues for the next 168 hours. All the data needed to understand power use of Large Loads is already available to ERCOT and should be used to improve the reliability of its existing processes without increasing impositions on Large Load facilities.