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| **NPRR Number** | [**1087**](http://www.ercot.com/mktrules/issues/NPRR1087) | **NPRR Title** | **Prohibit Participation of Critical Loads and Generation Resource Support Loads as Load Resources or ERS Resources** |
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| **Date** | | August 25, 2021 | |
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| **Submitter’s Information** | | | |
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| **Market Segment** | | Industrial Consumer | |

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| **Comments** |

Pioneer Natural Resources appreciates the discussion at ERCOT’s Nodal Protocol Revision Request (NPRR) 1087 workshop on August 19, 2021. As a follow up to the workshop discussion, Pioneer submits the following comments to enumerate upon key points made and discussed during the workshop. Pioneer continues to support ERCOT’s goal and efforts to help ensure Texas has sufficient critical natural gas supply and electricity grid reliability during all hours of the year and weather conditions.

During the August 19 workshop hosted by ERCOT, a summary was given by Dr. Rhodes of the University of Texas report (funded in part by the Public Utility Commission of Texas) published in July 2021 regarding the February 2021 winter storm event (“The Timeline and Events of the February 2021 Texas Electric Grid Blackouts” by Dr. Carey W. King, Dr. Joshua D. Rhodes, et al, hereafter referred to as the “UT Report”). As discussed during the workshop, the UT Report discusses and illustrates multiple key points relevant to NPRR 1087:

1. Page 9: Around 46,000 MW of power plants went offline throughout the event for reasons that “include ‘weather-related’ issues (30,000 MW, ~167 units), ‘equipment issues’ (5,600 MW, 146 units), ‘fuel limitations’ (6,700 MW, 131 units), ‘transmission and substation outages’ (1,900 MW, 18 units), and ‘frequency issues’ (1,800 MW, 8 units).”[[1]](#footnote-1)
2. Page 31: “Fuel issues for natural gas existed before the blackouts began (3,500 MW at noon on February 14) and increased as the event continued (6,700 MW at 10:00 a.m. on February 17).”
3. Page 31: “While there were no fuel-related outages associated with coal on February 14, issues appeared on February 15 and caused the outage of a maximum of 2,100 MW at 4:00 p.m. on February 16.”
4. Page 32: “Generator reports to ERCOT indicate that natural gas fuel shortages preceded the firm load shed directives from ERCOT, occurring as early as February 10.”
5. Page 32: “Additional natural gas outages are potentially due to the loss of electricity affecting the ability of the natural gas infrastructure to operate and thus deliver fuel, but we did not have data to evaluate the magnitude of this interdependence, or determine causality.”
6. Page 36: “As the freezing temperatures increased demand for electricity-based heating of homes and other buildings, ERCOT, the TDSPs, load-serving entities, and customers undertook a variety of actions to reduce demand on the system during the winter event, including:
   1. Involuntary load reduction due to selective outages of distribution circuits or substation loads chosen by the TDSPs and directed by Transmission Operators (TO) when ERCOT issues load shed orders.
   2. Customer response to high market prices by customers exposed to wholesale electricity prices or natural gas prices.
   3. Deployment of load resources.
   4. Deployment of ERCOT’s Emergency Response Service (ERS) program.
   5. Automated load shed triggered by under-frequency relays.
   6. Deployment of various demand response (DR) programs by load-serving entities.”

As stated in the UT Report, over half (3,500 MW) of the Generation Resource capacity that went offline due to fuel limitations occurred by noon on February 14. Of the remaining 3,200 MW of Generation Resource capacity that went offline due to fuel limitations, 2,100 MW was coal fuel related that appeared on February 15 and continued into February 16. That leaves 1,100 MW of natural gas fueled generation resource capacity that was impacted due to fuel limitations. It is high likely that some portion of the 1,100 MW remaining Resource capacity affected went offline between noon of February 14 and before ERCOT’s Verbal Dispatch Instruction (VDI) of Load Resources and ERS loads on February 15 between 1:09 – 1:21 AM. 1,100 MW represents less than 3% of the total ERCOT Generation Resource capacity that went offline during the storm.

(It should also be noted that while the UT Report discusses load shed triggered by under-frequency relays on the TDSP system, it does not detail impact from loads shed due to under-frequency relay protection devices at the load level (motor protection devices). Given the drop in grid frequency to below 59.4 Hz on February 15 around 1:50 AM, it is almost certain there was some modicum of impact to loads from such devices and would warrant inclusion in the UT Report list on page 36.)

As stated on page 32 and 36 of the UT Report, the 1,100 MW of natural gas related power outages could have been impacted by involuntary load reduction, customer response to market price, automated load shed triggered by under-frequency relays (for loads with motor protection devices not yet triggered by demand response participation), and deployment of demand response programs outside of ERCOT’s supervision (other than impact from ERCOT demand response program participation). The UT Report goes on to say that:

1. Page 38: “An analysis of load data suggests that maximum load reductions from Load Resources were over 1,400 MW on February 15, 16, and 17, and just under that level on February 19.”
2. Page 39: “Overall, the [ERS] program achieved its targeted level of demand reduction of roughly 1,100 MW during the morning of February 15.”
3. Page 44: “The data indicate that natural gas output started to decline rapidly before the electricity forced outages (load shed) began early on February 15, with production declining about 700 million cubic feet per day (MMcfd) from February 8-14. This decline is likely due to weather-related factors and not a loss of power at natural gas facilities. However, some of the additional 600 MMcfd output decline from February 14-15 could be partly due to natural gas facilities residing on circuits that the TDSP selected to follow ERCOT’s load shed orders.”

The UT Report details multiple factors could have impacted the 1,100 MW and 3% of generation resource capacity that went offline after noon on February 14 due to fuel limitations. There is no preponderance of evidence that shows curtailment of Load Resrouce and ERS loads caused severe consequences on Texas natural gas supply. It seems more likely that Load Resource and ERS loads helped save the Texas (ERCOT) electricity grid from reaching full Blackout condition.

As stated previously, Pioneer applauds ERCOT’s goal and efforts to help ensure Texas has sufficient critical natural gas supply and electricity grid reliability during all hours of the year and weather conditions, but in our opinion, these goals will not be achieved through a broad prohibition on natural gas related load participation in ERCOT Load Resource and ERS programs. There would not likely be an overall net benefit for the Texas (ERCOT) electricity grid without consideration for seasonality risk (higher in winter) or the ability of natural gas loads to reduce power Demand or shift load to backup gas engine, local on-site power generation, or other equipment while simultaneously continuing to provide natural gas supply to Texas consumers and power generators. The UT Report says:

1. Page 56: “…it does appear that some power plant fuel supply chain infrastructure, including some self-identified as critical, were participating in paid load reduction programs that would have turned them off when ERCOT deployed ERS resources.”

That is not an accurate characterization of how many ERS (or Load Resources) curtail to meet their demand response obligation. While there are loads that fully curtail to off status, many ERS and Load Resources reduce non-critical power demand and loads rather than full curtailment or “turning off.”

There are separate ERCOT proceedings considering redesign of ERCOT Ancillary Services, and Pioneer supports a market design that increases opportunities for non-critical controllable and non-controllable loads (or portions of load) to participate in ERCOT demand response programs and provide an important backstop to the Texas (ERCOT) electricity grid. There are also refinements and issues brought to light during the February 2021 demand response event that ERCOT should consider such as:

1. The need for a more formal process during a Demand response event to request and be considered for a waiver to ERCOT’s Nodal Protocol 3.14.3.3(2)&(3)(a) and 6.5.7.6.2.2 which require full curtailment to meet obligation by ERS and Load Resource loads for 12 hours (ERS) and until instructed by ERCOT to stop providing RRS (Load Resources). Lack of a defined process in the ERCOT Nodal Protocols caused confusion for Market Participants and QSEs during the February 2021 event.
   1. Should such waivers be granted at the QSE level or to specific Load Resource or ERS loads requesting a participation waiver only?
   2. Should a QSE be allowed to request an exemption for all loads in its portfolio and not just for the specific load(s) requesting a participation waiver?
2. The need for a more formal process after a demand response event to review and determine whether ERS or Load Resource loads that requested a participation waiver in order to come back online (while still obligated to provide ERS or RRS) should continue to be eligible to participate in the ERS or Load Resource program.
3. Whether or not Load Resources that are curtailed due to a demand response event are allowed to continue offering daily RRS MW capacity for the already curtailed portion of the Load Resource into the Day-Ahead Market (DAM) if the Load Resource MW currently curtailed cannot meet the ERCOT Nodal Protocol requirement to have capability of restoring enough load to meet its RRS obligation within 3 hours following ERCOT recall instruction? (8.1.1.4.2(6): “A Load Resource providing RRS excluding Controllable Load Resources must return to at least 95% of its Ancillary Service Resource Responsibility for RRS within three hours following a recall instruction unless replaced by another Resource as described below.”)
   1. Is there a method for ERCOT to assess or QSEs to report to ERCOT whether or not a Load Resource currently curtailed can (or cannot) meet its 3 hour restoration requirement?
   2. If a Load Resource has no RRS obligation for the hour in which ERCOT issues a recall instruction, how long is that Load Resource obligated to demonstrate it has restored within the required 3 hour time limit?
4. Increased communication between ERCOT and QSEs during a demand response event. There were multiple times throughout the February 2021 event that different messages were received by different QSEs, at times causing significant confusion for Market Participants.
5. ERCOT sponsorship of more frequent meetings and communication between ERCOT, natural gas industry, TDSP, and generation resource Market Participants. According to the ERCOT website, there are no future scheduled meetings for the ERCOT Gas Electric Working Group, and only one meeting was held thus far this year on April 19. The Texas (ERCOT) electricity grid could benefit from more frequent communication and detailed planning between the parties before the next winter storm and inclusion of more midstream and upstream Texas oil and gas companies.

If there is an eventual NPRR approved by ERCOT related to participation of natural gas related loads in the LR or ERS programs, Pioneer continues to support the Texas Industrial Energy Consumers (TIEC) comments and requested language adjustment regarding the removal of a new definition for “Generation Resource Support Load” in combination with Pioneer’s tailored approach recommended above and in our August 6 comments. Pioneer recommends consideration in any NPRR language for the potential negative second and third order effects on non-critical loads and no unintended prohibition of non-critical LR and ERS loads from participating in demand response programs and providing an important backstop to the Texas (ERCOT) electricity grid. During the NPRR1087 workshop, Pioneer made an offer to assist ERCOT and interested Market Participants (or their representatives) with the effort to draft NPRR language that would address points raised in these comments and that offer still stands.

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| **Revised Cover Page Language** |

None.

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| Revised Proposed Protocol Language |

None.

1. “Some power plants experienced multiple outages and may be included in more than one category.” [↑](#footnote-ref-1)