Dual Fuel Schedule Requirements

Problem / Opportunity Statement

This Problem/Opportunity Statement is brought by Constellation Energy Generation, LLC and PJM to address ~~a~~ limitations related to offering units which have dual fuel capabilities.

One of these limitations is related to ~~imposed by~~ PJM's software platforms. Current market rules may not accommodate reflecting dual fuel resources that require transition time to switch fuel under all conditions. ~~Under certain circumstances dual fuel resources are unable to enter their schedules for both the primary and alternative fuel for optimization in PJM's software.~~ This is especially the case where a fuel switching period is required. The current Manual 11 language is inconsistent with the Reliability Assurance Agreement (RAA) definition of dual fuel resources and language in Manual 11 regarding the schedule that a dual fuel resource must submit to PJM regarding its alternate fuel, as well as what PJM has previously told FERC regarding its implementation of dual fuel ELCC classes. Furthermore, existing Manual 11 language recognizes other limitations such as "limitations due to energy or environmental limitations imposed on the generating unit by Applicable Laws and Regulations."

The RAA defines either a dual fuel gas combined cycle or dual fuel gas combustion turbine resource as a resource that is "capable of operating on the alternate fuel for two 16-hour periods over two consecutive days at its maximum capacity level." Based on this definition, which contemplates gas as the "primary" fuel, the RAA contemplates a limited schedule for the alternative fuel comprised of 16-hour periods on two consecutive days.

The current language in Manual 11, Section 2.3.3.1 requires the resource submit "an available schedule for the primary fuel *and* an available schedule for the alternative fuel" in order to meet its energy must-offer requirement (emphasis added). This language could be interpreted to require these dual fuel units to submit "available" energy offers for both fuels for each hour of each day, however, the RAA ELCC dual fuel eligibility criteria does not support requiring available cost schedules for both fuels at all times. Nothing in the must-offer rules (Operating Agreement, Schedule 1, section 1.10.1A(d)) compels this result, either. The must-offer rule is satisfied by offering into the day-ahead energy market.

In addition to being inconsistent with the tariff, the new manual changes are inconsistent with what PJM told FERC about how it would implement this new ELCC class. In November 2023, FERC staff issued a deficiency letter in response to PJM's ELCC filing (ER24-99). The deficiency letter asked PJM to explain how the dual fuel ELCC class qualification requirements would be enforced. In PJM's response, PJM said the qualifications would be enforced through a seller attestation and the threat of an Enforcement referral. With respect to the referral, PJM said that if the seller "does not mark their energy market schedule on the alternative fuel as available for the required time . . .," that conduct could lead to a referral. The "required time" presumably refers to the 16-hour rule in the winter season.

As noted above, existing Manual 11 language already recognizes potential limitations on the alternative fuel "due to energy or environmental limitations imposed on the generating unit by Applicable Laws and Regulations." Revised Manual 11 language is needed to recognize limitations imposed by PJM's software platforms.

Revised Manual 11 language is also required to ensure application of the alternative fuel schedule requirements that are consistent with the language of the RAA and PJM's expressed explanation to FERC. Additionally, revised language will ensure that a resource's "fuel switching" time is honored.

This issue is largely a compliance issue.

The second limitation is related to the way the PJM Day Ahead Market selects the most economic (least cost), available schedule. Dual fuel units are obligated to submit valid schedules for both primary (normally natural gas), and backup (diesel, etc.) schedules. The scheduling software selects the least cost schedule that meets the reliability requirement. As observed in Winter Storm Fern, and other winter operations, natural gas prices can increase during peak winter operations. This causes the scheduling software to select the cheaper fuel – in this case – oil, which depletes oil inventory. This situation is likely limited to multi-day, peak load, cold weather operations. However, it is important that PJM have a limited ability to manage backup fuel for limited periods of time. The opportunity here is for stakeholders to develop the limited conditions under which PJM should implement this; the approach to communicate and implement; and the tools needed.

This issue is largely a reliability issue.

An additional observation during Winter Storm Fern was that the fuel types attached to each schedule were not always consistent with the actual fuel being utilized. This led to decreased situational awareness and made it challenging to assess the risks associated with some units associated with limitations like emissions, gas availability, and on-site inventory.–[1]

~~Because the inconsistency between the RAA requirements and Manual 11 can be addressed through clarifying revisions to Manual 11 this~~It is important that this Problem/Opportunity Statement can be addressed ~~through a "Quick Fix" process~~and implemented prior to Winter 2026 - 2027.

[1] PJM Manual 13: Emergency Operations, Section 6.4 Resource Limitation Reporting - For long-duration extreme events that may cause wide-scale fuel disruptions, as outlined in Section 3.5, PJM may adjust "Resource Limited Unit" reporting timeframe and minimum run time requirements to place additional Resource Limited Resources into the Maximum Emergency Category.