

Entergy Operating Companies' Response to NRG Comments on ICT Base Plan September 16, 2013

On September 4, 2013, NRG provided comments (“NRG Comments”) in response to the posted Entergy 2014-18 Construction Plan and the ICT Base Plan 2014-18, specifically with regard to the treatment of the Nelson flowgate. NRG makes several claims about the planning model assumptions and the economic impact of the Nelson flowgate on electric ratepayers. NRG’s comments misstate basic facts, and Entergy believes a response is warranted to correct misinformation about the planning process, the Nelson flowgate, and the appropriate classification of the Nelson Autotransformer project (“Nelson Auto”).

Entergy Response to NRG’s Modeling Allegations

Base Plan Modeling Methodology. NRG’s September 4 Comments identify several so-called “issues” in the modeling process. First, NRG claims that MISO as ICT has not developed a specific methodology for setting the base case dispatch, which results in what NRG alleges is an inconsistency between the Base Plan models and Entergy’s seasonal planning models. These claims have no merit. Contrary to NRG’s claims, both the ICT Base Plan and Entergy’s seasonal models do, in fact, have a consistent base case dispatch model methodology in which units are dispatched based on resource plans submitted by Load Serving Entities (LSEs) and firm transmission rights, as set forth in Attachments K and D of the Entergy OATT.¹ The network resources identified by the LSE are dispatched in a “block order” provided by the LSE. Block order dispatch assumptions are widely used throughout the industry to set base generation assumptions used for long-term planning analysis and are prevalent in MISO and other RTOs. Models used in MISO’s Reliability Assessment used to develop the Base Plan are the same models used by Entergy to develop the Construction Plan.

MISO also reviewed an “alternate dispatch” scenario where Nelson 4 was modeled off-line in the base case. Subsequent reviews concluded that the historical operating characteristics of Entergy’s designated resources in the region did not support the hypothesis that the “alternative dispatch scenario” was reasonable. This “alternate dispatch” is not the dispatch used in the base case for development of the ICT’s Base Plan 2014-18. Moreover, because the “alternate dispatch” case assumes that Nelson Unit 4 is not running in the base case, it effectively results in applying N-1/G-2 criteria, which goes well beyond NERC reliability criteria.

NRG further maintains that certain assumptions for unit dispatch are inconsistent with the historical dispatch of those units. NRG fails to recognize that the base generation dispatch in long-term planning models reflects the purposes for which those models are created. Long-term planning models are developed to ensure that firm resources can supply forecasted load, while maintaining firm transmission rights. Consistent with that purpose, units that have been designated as network resources (and thus are obligated to serve network load) are dispatched based on a block-order dispatch methodology. As has been noted in numerous other forums, historical dispatch reflects the fact that long-term firm resources can be displaced in the operating horizon with short-term resources. Modifying the generation dispatch in long-term planning models to reflect this historical dispatch would result in a less reliable transmission

¹ See Attachment K § 11.1; Attachment D § 2.3.4.

plan, *i.e.*, a transmission plan based on as-yet-unknown short-term resources that have not committed to serve network load and do not have firm transmission service. For these reasons, the models used to develop both the ICT Base Plan and Entergy's Construction Plan use a block-order dispatch of firm resources consistent with the practice widely used by other transmission providers. This dispatch process, with respect to the relative dispatch priorities of Willow Glen and Nelson, has remained unchanged for at least the previous three years. It should also be noted that if base case dispatch assumptions were to arbitrarily be changed to favor the project NRG supports, both the Willow Glen auto and the Fancy Point auto projects could likely be delayed. However, as discussed below, given that the new standards do not require transmission planners to mitigate N-1/G-1 events before the year 2020, absent a change in load or other modeling assumptions, there is no reliability driver that would result in an earlier planned in-service date for the Nelson Auto.

Comparison of Long-Term and AFC Models. NRG also alleges inconsistent treatment of the Willow Glen project and the Nelson Auto project, and claims additional review is warranted, based on alleged discrepancies between the long-term planning models and the AFC models. NRG's claims of inconsistent treatment are without merit. The planning models and the AFC models are, in fact, different and such differences are appropriate. Near-term AFC models do, in fact, have units dispatched differently from the long-term models. Near-term AFC models reflect near real-time information; they are updated hourly and daily based on generation dispatch information that is not available when developing long-term models. For example, long-term models are developed far in advance of the operating day and generally do not include planned outages that are scheduled in the less-than-one-year horizon because such outages are not known when the long-term models are developed. In addition, near-term AFC models may reflect newly designated, short-term resources which further alters generation dispatch. Accordingly, in the AFC models, accounting for planned generator outages and short-term transmission service results in long-term resources that are assumed to operate in long-term models being altered to reflect those short-term transactions and to provide reliability in the operating horizon. For these reasons, it is no surprise that the respective dispatch of the Willow Glen unit and Nelson 4 unit differs between the AFC and long-term models for those units. Moreover, with respect to the long-term models, the Nelson 4 unit is higher in the block-order dispatch priority than the Willow Glen unit and has been so for at least the previous three Construction Plan / Base Plan cycles and therefore, dispatches before Willow Glen.

Entergy does not modify its base case generation to pre-determine the outcome of the upgrades identified in the Base Plan, and NRG's claims in this regard are baseless. The different methodologies for dispatching generation in the AFC models versus long-term models are described in Attachments C and D of Entergy OATT, both of which have been approved by FERC. The methodology for dispatching generation in long-term planning models was not modified for this year's Construction Plan or Base Plan. Moreover, these claims disregard completely the SPP ICT's independent participation in the development of these dispatch methodologies, and the MISO ICT's independent participation in the development and oversight of the base case models for this year's Construction Plan and Base Plan.

Contrary to NRG's alleged "concerns" about inconsistent planning criteria being used for Willow Glen and Nelson, the N-1/G-1 criteria apply for both units. The difference is that, based

on the present facts and circumstances, reliability criteria drive the planning need at Willow Glen because, for the reasons noted above, generating units at Willow Glen are turned off in the long-term models, whereas Nelson is running in these models, and as a result, no reliability need in the Nelson area is identified -- a fact independently confirmed by the ICT. NRG further maintains that locations of potential new loads for Entergy (e.g., new load in the Willow Glen area) are driving the planning criteria, rather than consistently applied planning criteria. This claim is without merit. NRG fails to recognize that there are potential new loads in both the Willow Glen and Nelson areas. Load forecasts reflect the current obligations for electric service and are planned for through Entergy's planning processes. Pursuant to the applicable planning criteria, until potential future Nelson load is confirmed, it cannot be included in the models, and therefore, cannot affect the results of the model. NRG further claims that the congestion in the Nelson area is greater than that in the Willow Glen area. First, there has been and continues to be congestion in the Willow Glen area; the Willow Glen project is not proposed to address congestion, but instead to maintain compliance with reliability standards. Upgrades proposed in the Nelson area for 2017 are specifically designed to address congestion and provide an enhanced level of reliability beyond what is required by the applicable NERC standards. Projects whose purpose is to relieve congestion and provide enhanced reliability, per Entergy's tariff, are not reliability projects, but instead economic/Supplemental projects and thus are not included in the ICT's Base Plan. As such, the ICT did not include the Nelson Auto project in the Base Plan as presented at the September 11th Transmission Summit. Entergy agrees and has correctly designated the Nelson Auto project as an "Enhanced Reliability" project in the Entergy Construction Plan.

Redispatch Claims. NRG's concerns about the use of redispatch as a means to manage the congestion in the Nelson area are misguided. Redispatch is well recognized by the NERC Reliability Standards as a means to mitigate congestion, and it is widely applied in the industry. Furthermore, NRG's claims that redispatch capability exists only on paper are flat wrong. If such allegations were accurate, load-shed events in the area would have occurred routinely; conversely, historical experience has shown that, when TLR-5 events have occurred in the Nelson area, the Nelson 4 unit and other units in the area have successfully been redispatched through the NNL requirements. NRG's claims that "actual operational data" for Nelson 4 show that redispatch is unavailable is unsupported. In fact, Nelson 4 has run approximately 65% of the hours over the past three years. Lastly, the redispatch criteria are applied, consistent with the NERC Standards, to all N-1/G-1 based projects, and are applied consistently across all areas of system. Furthermore, application of the N-1/G-1 criteria is not mandatory in the Nelson area. In fact, currently applicable NERC standards **allow for the planned curtailment of firm transmission service (TLR-5 Events) to mitigate N-1/G-1 events**. New standards expected to become effective soon are more stringent, and thus Entergy has elected to begin planning to those more stringent standards in advance of their final acceptance by FERC. These new standards include a seven-year implementation plan which at the earliest would require the N-1/G-1 upgrades to be completed by the year 2020. Again Entergy has elected to stage some N-1/G-1 projects earlier than 2020 to ensure that all of the projects that are needed can be completed on time. It should again be noted that the Nelson Auto project is not needed to meet even the more stringent, but not yet applicable, reliability standards.

Response to Economic Analysis Claims

NRG's claims that the Nelson Auto project is justified as an economic project based on congestion costs shown in MISO's recent modeling are likewise without merit. As a preliminary matter, Entergy's historical planning analysis – before the advent of MISO's Day 2 Market -- shows potential adjusted production cost ("APC") savings of less than \$3 million annually even with extreme assumptions for heat rate differentials in the region based on current gas prices, which is a level of benefits insufficient to exceed the costs of the project. Further, while the MISO modeling of congestion costs on which NRG relies provides a preliminary indication that, with the advent of MISO's Day 2 Market, the benefits of the Nelson Auto project to Market Participants in Local Resource Zone 9 (which include all MISO South loads outside of Arkansas) may exceed the costs, further analysis is needed in order to refine the expected production cost savings resulting from the project and the beneficiaries of those savings, as MISO itself has noted. Moreover, the congestion costs relied upon by NRG are based on economic models that are preliminary and as to which further adjustments may be needed. It is certainly possible that the Nelson Auto project may, upon further, more detailed and accurate modeling, be shown to be economic with the advent of MISO's Day 2 Market. But NRG's suggestion that the current modeling provides a reasonable basis to conclude the project should be considered as an economic project to be funded by Entergy is simply without merit. Finally, NRG argues that because the Nelson Flowgate showed up as a limit in a previous MISO analysis, it should be considered a reliability project. NRG fails to acknowledge, however, that, as noted above, Nelson only showed up under the "alternate dispatch" scenario; that is, where Nelson 4 was turned off in the base case and then N-1/G-1 criteria were applied. As noted above, this "alternate dispatch" case thus effectively applied a more stringent N-1/G-2 criteria, not the criteria applicable to the Nelson area under current NERC regulations, as NRG suggests. Accordingly, while new loads or other changed circumstances in the Nelson area that, pursuant to the planning criteria, may affect the results of the planning models and may, in the future, trigger a different result, NRG's arguments based on the "alternate dispatch" case provide no support for classifying the Nelson Auto project as a reliability upgrade for inclusion in the Base Plan. The ICT's exclusion of the project from its Base Plan confirms that.

Response to NRG's Procedural Questions Directed to Entergy

The NRG Comments pose several questions to MISO and Entergy. Entergy provides the following responses to the questions directed to Entergy:

What is the Entergy redispatch criteria? Entergy uses redispatch as mitigation for N-1/G-1 situations. The Entergy methodology for applying redispatch mitigation is similar to that applied by MISO as the RTO, as well as other Transmission Providers. Units that are eligible for redispatch must be on-line in the base case model; Entergy cannot recommit or de-commit units in order to apply redispatch as a mitigation measure. All resources eligible for redispatch must be Entergy-owned resources. No more than ten units may move (either up or down) in order to apply the redispatch, and not more than 1000 MW (in either direction) can be used.

The Entergy criteria differ from those applied by MISO and some other Transmission Providers in one key way. That is, as noted above, the Entergy criteria do not permit Entergy to

commit or de-commit units in this process, whereas MISO and some other Transmission Providers allow units to be committed in the long-term horizon. This means that in this instance, the Entergy criteria are more conservative and stringent than those used by MISO and some other Transmission Providers. If, however, in this instance the Entergy criteria permitted committing units in this process, the need for the Willow Glen autotransformer would be eliminated, because Entergy could commit the Willow Glen units. However, applying that same approach to the Nelson Auto, the same result would occur under the NRG-supported “alternate dispatch” base case model because Nelson 4 could be committed and the need for the Nelson Auto would thus also be eliminated, even if the “alternate dispatch” scenario were reasonable, which it is not. Changing the criteria in this instance would not achieve the result NRG seeks with regard to the Nelson Auto project.

Was Entergy dispatch tested as potential mitigation for other constraints in lieu of including upgrades in the Base Plan?

Yes, it was tested, and the ICT confirmed the analysis.

Conclusion

NRG’s claims that there are flaws in the planning process are unfounded, and its claims that the Nelson Auto should be included in the Base Plan, particularly because of the anticipated integration into MISO in December, are likewise unsupported under the current facts and circumstances. Based on the current loads and other modeling assumptions, no reliability need exists that would justify the inclusion of the Nelson Auto project in the Base Plan. While removing the Nelson 4 unit from the base case models may lead to a different result, no basis exists for such treatment, and NRG has not provided any. At this time, and absent material changes in the loads or other circumstances underlying the model assumptions, it is appropriate for the Nelson Auto project to remain as an “Enhanced Reliability” project and thus excluded from the ICT’s Base Plan. Finally, while early estimates of the cost of that project in 2017 were less than \$10 million, subsequent revisions to that estimate range from \$21-23 million. Early estimates did not include necessary work associated with constructing the necessary supporting infrastructure to move the Willow Glen auto to Nelson.