Docket Number: **EL25-013**
Subject Matter: **Second Data Request**
Request to: **NorthWestern Energy Public Service Corporation dba NorthWestern Energy (NorthWestern or Company)**
Request from: **South Dakota Public Utilities Commission Staff**
Date of Request: **June 2, 2025**
Responses Due: **June 16, 2025**

Small Modular Nuclear Reactor Generation

2-8. Refer to page 5 of the Petition. NorthWestern states: "Considering the cost of additional infrastructure needed to provide natural gas (and existing pipeline capacity constraints) to large natural gas generation units that will operate as baseload generation – SMR generation becomes an attractive option from a pricing perspective."

a) Provide analysis that indicates SMR generation is an attractive option compared to natural gas generation units when these additional costs/constraints are considered.
b) Provide any documentation or analysis regarding the costs of additional infrastructure needed to provide natural gas that is not considered as part of the 2024 IRP analysis.
c) If the cost of additional infrastructure needed to provide natural gas was included as part of the 2024 IRP analysis, how would that impact the results?
d) Further explain the existing pipeline capacity constraints and any efforts/analysis conducted by NorthWestern and/or the pipeline companies to relieve these constraints in the future. If additional pipeline capacity was added to relieve the constraints, what would be the impact on the cost effectiveness of adding natural gas generation?

NWE Response:

2-8 a) NorthWestern has not completed a comprehensive study on SMR vs natural gas generation. However, even without detailed modeling, available public data shows SMRs beating new natural gas generation on a risk-adjusted cost basis once pipeline congestion, potential three-fold turbine CAPEX inflation, varying environmental regulations, and fuel-price volatility are factored in. All these factors need to be continually evaluated. Natural gas single and combined cycle needs to be closely compared to SMRs as generation risks and available fuel supply and volatility change over time, especially when considering natural gas as an energy resource in addition to a capacity resource.

2-8 b) See attachment Docket EL25-013 DR 2-8b CONFIDENTIAL for the response to this question.

2-8 c) If the additional costs of natural gas infrastructure were included in the capital cost of natural gas generating resources, then the natural gas resources would be more expensive in the PowerSIMM Automatic Resource Selection (ARS) analysis, i.e. capacity expansion analysis. If the natural gas resources were more expensive in ARS, then it is possible that other lower cost resources would be chosen instead of the natural gas resources, if there were in fact lower cost resources to choose from with an equivalent capacity accreditation. It should be noted that

including natural gas infrastructure costs as part of the resource capital costs is challenging from a modeling perspective because the next infrastructure upgrade is dependent on the previous infrastructure upgrade. It's possible that the infrastructure upgrades would change from scenario to scenario just as the natural gas resources change from scenario to scenario as shown in Figures 29 through 33 of the 2024 SD IRP.

2-8 d) See response to 2-8b and 2-8c.