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| **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** |

**Aberdeen Generation Station**

2-2. Refer to NorthWestern's response to DR 1-1, 2020 IRP. Page 43 states that three types of simple cycle units were considered: Frame, Aeroderivative, and Reciprocating Internal Combustion Engines (RICE). The IRP goes on to state on page 47:
"The modeling results suggest that the replacement portfolio consisting of approximately 40 MW of RICE units has the lowest cost of the replacement options analyzed. These results are based on generic proxy resources and are thus suggestive, but any actual resource decisions would only be made following a rigorous analysis of resource-specific information."

a) Provide the generator technology selected for the AGS1 replacement.
b) Provide the analysis that determined the selected technology for the AGS1 replacement was more cost effective than the RICE units, as contemplated by the 2020 IRP.

**NWE Response:**
**2-2 a)** The generator technology for AGS3 & AGS4 is modular simple cycle natural gas combustion turbines (SC CT).

**2-2 b)** Based on the numbers used in the IRP, the RICE units outperformed the CT unit. However, in 2023, when we went to the market with a Request for Proposal ("RFP"), the CT units came in as the lower cost generation resource. In addition, the RICE units described in the IRP were conventional installations. The RICE models reviewed in the RFP were modular units and have a higher cost than conventional installation.

The following chart shows the 2023 comparison of updated costs for these two types of units. Based on these costs, the decision was made to replace the existing unit with 2 modular 13.9 MW SC CT units. The output may increase up to 15 MW per unit with ideal ambient conditions.

| 25-year (2026-2050) NPV (2026$) | Pre-Fab RICE (8 x 4.4 MW) | Pre-Fab SC CT (1 x 33.2 MW) |
|---|---|---|
| Capital Costs | $ 76,036,000 | $ 62,753,000 |
| Market Sales Gross Revenue | $ 7,043,495 | $ 6,653,898 |
| Variable Costs | $ 5,712,816 | $ 5,431,011 |
| Fixed O&M Costs | $ 10,915,894 | $ 3,263,290 |
| Total NPV | $ 85,621,215 | $ 64,793,404 |