**Context and Background:**

This testimony, submitted by Daniel Kline, Director of Power Delivery Planning at Entergy Services, LLC, supports Entergy Louisiana, LLC’s (ELL) application in LPSC Docket U-37425, which seeks approval for significant generation and transmission projects intended to serve a substantial industrial customer project in Richland Parish, North Louisiana.

**Key Components Discussed:**

**1. Project Overview:**

* The customer plans to construct a significant facility in Richland Parish requiring substantial and continuous electricity supply.
* ELL proposes constructing three combined-cycle combustion turbine (CCCT) generation units, each approximately 754 MW, totaling 2,133 MW of new baseload capacity to serve the customer’s demands (p. 11).

**2. Transmission Infrastructure Requirements:**

The testimony details various transmission infrastructure enhancements essential for the new load:

* **Smalling Substation**: A new substation adjacent to the Baxter-Wilson to Perryville 500 kV transmission line with 500/230 kV transformers (pp. 13-14).
* **Car Gas Road 500 kV Substation**: A new 500 kV switchyard to facilitate connections due to constraints at the existing Perryville Substation (p. 13).
* **Customer Substations**: Six new substations to be located on the customer’s property.
* **500 kV Transmission Lines**: Including two new 500 kV lines connecting Smalling Substation to the Car Gas Road substation, and a significant 500 kV line from Mount Olive to Sarepta, enhancing system robustness (pp. 13-14).
* **Sterlington Substation Equipment Upgrades**: Upgrades to meet increased power flows (p. 16).

The proposed infrastructure would cost significantly, with the customer directly funding most new facilities, while the Mount Olive to Sarepta 500 kV line and Sterlington upgrades (costing approximately $546 million) would be funded by ELL (pp. 15-16).

**3. Transmission Planning and Alternatives:**

Multiple scenarios were analyzed for transmission and generation solutions, exploring various configurations and siting options. ELL selected the scenario balancing cost-effectiveness and reliability, including:

* Mount Olive to Sarepta 500 kV line
* Smalling substation configurations
* Strategically located CCCTs to balance load and generation effectively (pp. 25-38).

**4. Midcontinent Independent System Operator (MISO) Processes:**

* The document discusses MISO’s roles and approval processes, specifically the Expedited Project Review (EPR) for rapid transmission project approval and the Generator Interconnection Process.
* ELL plans to engage these processes to timely facilitate interconnections and compliance with reliability standards (pp. 42-50).

**5. Economic and System Benefits:**

* Strengthened transmission capabilities enhancing reliability, resiliency, and sustainability of the regional power system.
* Improved power quality and system stability through additional dynamic reactive power capabilities provided by the new CCCTs.
* Enhanced capability to integrate renewable energy into ELL's generation mix (pp. 37-40).

**6. Exhibits:**

The testimony includes several supporting exhibits such as:

* Single-line diagrams and structure drawings (Exhibits DK-2 and DK-3).
* Detailed cost breakdown (Exhibit DK-5).
* Maps illustrating planned transmission expansions (Exhibit DK-6).
* Flowcharts detailing MISO processes (Exhibit DK-7).

**Conclusion:**

The testimony strongly supports the proposed infrastructure as essential to meeting the customer's energy demands while enhancing the reliability and economic development prospects for North Louisiana. It emphasizes compliance with regional planning and reliability standards and the necessity of timely regulatory approvals to meet project schedules.