BEFORE THE

LOUISIANA PUBLIC SERVICE COMMISSION

***IN RE*: APPLICATION OF ENTERGY LOUISIANA, LLC FOR APPROVAL TO CONSTRUCT BAYOU POWER STATION, AND FOR COST RECOVERY**	))))	**DOCKET NO. U-_____**

DIRECT TESTIMONY

OF

SEAN MEREDITH

ON BEHALF OF

ENTERGY LOUISIANA, LLC

MARCH 2024

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EXHIBITS

I. INTRODUCTION AND PURPOSE

A. Qualifications

Q1. PLEASE STATE YOUR NAME AND CURRENT BUSINESS ADDRESS.

A. My name is Sean Meredith. My business address is 2107 Research Forest Dr., Suite 300, The Woodlands, Texas 77380.

Q2. ON WHOSE BEHALF ARE YOU FILING THIS DIRECT TESTIMONY?

A. I am testifying before the Louisiana Public Service Commission ("Commission") on behalf of Entergy Louisiana, LLC ("ELL" or the "Company").

Q3. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed by Entergy Services, LLC ("ESL")[1] as Vice President, Project Delivery.

Q4. PLEASE DESCRIBE YOUR EDUCATION AND BUSINESS EXPERIENCE.

A. I have a Bachelor of Science degree in Systems Engineering from the United States Naval Academy, and I completed the Naval Nuclear Propulsion Program. I served in the United States Navy as a submarine officer aboard three fast attack submarines over a ten-year period. In my last assignment, aboard the USS Hartford, I served as the Engineer Officer responsible for the operation, maintenance, and repair of the nuclear

[1] ESL is an affiliate of the Entergy Operating Companies ("EOCs") and provides engineering, planning, accounting, technical, and regulatory-support services to each of the EOCs. The five EOCs are Entergy Arkansas, LLC, ELL, Entergy Mississippi, LLC, Entergy New Orleans, LLC, and Entergy Texas, Inc.

reactor plant and all support systems, as well as training and qualifying all sailors in the engineering department.

In 2014, I joined Entergy's nuclear organization as a supervisor of the Instrumentation and Controls department at the James A. FitzPatrick Nuclear Power Plant in Scriba, New York, where I was responsible for the maintenance and repair of various systems in the plant. In 2016, I joined Entergy's transmission organization as a senior program manager and became the Training Manager for transmission in the spring of 2017. In that capacity, I led a team that established and executed a Journeyman Training Program for all craft journeymen and transitioned the apprenticeship training programs to utilize a new training facility. In 2018, I became the director of operations for the Transmission Control Center North with responsibilities for the EOCs' transmission operations that included bulk power operations, generation coordination with the Midcontinent Independent System Operator, Inc. ("MISO"), and outage management. From April 2020 to October 2021, I served as Vice President, Power Plant Operations, where I was responsible for the safe, compliant, and reliable operation of the EOCs' non-nuclear generation fleet, including the strategic planning for all generation assets across the EOCs' service areas. In October 2021, I assumed the role as Vice President, System Resilience. Finally, in May 2023, this role was expanded to also include the responsibilities of the Vice President of Project Delivery.

Q5. PLEASE DESCRIBE YOUR CURRENT JOB RESPONSIBILITIES.

A. As the Vice President, Project Delivery, I am responsible for the strategic leadership and oversight of the EOCs' efforts related to resilience. I am responsible for leading the development of the Company's strategic initiatives and goals to achieve excellence in resilience project performance and drive continued project efficiency around the execution of resilience projects. As part of that effort, I help ensure that the Company's standards incorporate resilience aspects and are properly included in all new generation, transmission, and distribution projects. Moreover, I provide leadership, direction, and oversight to a geographically dispersed organization of technical professionals, field leadership, and contract personnel, ensuring that internal and external resources are available to meet the projected workload. I work collaboratively with senior leadership and key stakeholders to accomplish strategic imperatives and deliver on desired outcomes of the Company's resilience-based programs.

I also oversee all aspects of safely delivering transmission and distribution capital projects. I am responsible for implementation and monitoring of company safety measures throughout the Construction Management organization, providing a clear, consistent message to all project contract partners and ensuring that the Company's resilience initiatives are properly incorporated into the transmission and distribution capital portfolios. I also serve as the liaison with senior leadership and other key stakeholders to ensure delivery of strategic imperatives and desired outcomes for these projects.

I performed and managed work related to these various roles and functions with respect to the BPS.

B. Purpose of Testimony

Q6. WHAT IS THE PURPOSE OF YOUR DIRECT TESTIMONY?

A. My testimony supports the Company's Application in this proceeding, which seeks, among other things, approval to construct and operate the Bayou Power Station ("BPS" or the "Project"). I address the expected resiliency benefits of the proposed Project and the accompanying microgrid.

Q7. HAVE YOU PREVIOUSLY TESTIFIED BEFORE A REGULATORY COMMISSION?

A. Yes. Attached as Exhibit SM-1 is a list of my prior testimony.

II. PROJECT RESILIENCE BENEFITS

Q8. PLEASE PROVIDE A BRIEF OVERVIEW OF THE BAYOU POWER STATION PROJECT.

A. As more thoroughly detailed in the Direct Testimony of Company witness Gary Dickens, the Project is a new 112 megawatt ("MW") power barge generating station consisting of six natural gas-fired Reciprocating Internal Combustion Engines ("RICE") units with black-start capability in Leeville, Louisiana and an associated microgrid that would serve downstream of the Clovelly substation, including Port Fourchon, Golden Meadow, Leeville, and Grand Isle. The Project and the associated microgrid are expected to provide resilience benefits to ELL's electrical system in the surrounding area.

Q9. CAN YOU EXPLAIN WHAT YOU MEAN BY THE USE OF THE TERM RESILIENCE?

A. For purposes of my testimony, resilience is the ability to prepare for, adapt to, and recover from non-normal events, such as hurricanes, floods, winter storms, and other major weather disruptions. While often complementary, it is important to note that resilience is different from reliability. The reliability related solutions and benefits associated with the Project are discussed in the Direct Testimony of Company witness Samrat Datta. My testimony focuses solely on the resilience benefits offered by the Project and the associated microgrid.

Q10. PLEASE EXPLAIN WHAT A MICROGRID IS.

A. Although there are various definitions of what constitutes a "microgrid," generally speaking, a microgrid consists of localized, distribution-scale resources and/or storage integrated by a controller that can island the targeted load and continue serving customers in response to an outage event or, in certain instances, can respond to market conditions and enhance reliability during times of peak usage. In other words, microgrids are able to provide a local source of power that can swiftly restore power to a substation, to the feeders that are connected to a substation, or to certain critical loads on the Company's distribution system.

Most microgrids are associated with providing enhanced resilience to a single entity (*e.g.*, a hospital or a campus that has the capability to be islanded and stay in operation during an outage). However, there are also instances in the United States of microgrids that serve a broader area involving multiple electricity consumers. One

obvious benefit to constructing a microgrid that serves a broader area (*i.e.*, an entire substation, feeder, or lateral) as opposed to a single customer, is that the wider coverage brings incremental resilience to more customers who are contributing to its costs.

As discussed by Laura K. Beauchamp and Mr. Datta, the microgrid associated with the Project is intended to encompass the area downstream of the Clovelly substation, including Port Fourchon, Golden Meadow, Leeville, and Grand Isle. The microgrid control system would serve load from the power station in the event of an outage on the existing Valentine – Clovelly 115 kV transmission line that currently serves as the only source of power to a diverse group of customers, including several industrial customers located at Port Fourchon, Louisiana.

Q11. CAN YOU PROVIDE AN OVERVIEW OF THE EXPECTED RESILIENCE BENEFITS FROM THE PROJECT?

A. It is important to note that the Project itself is expected to offer resilience benefits as it would be the only generation source in the area, thereby acting as a distributed energy resource. Beyond that, the Project has been designed with significant fundamental design aspects that are expected to provide significant resilience benefits. The major aspects of the project that are intended to provide significant resilience benefits are the Project's design as a floating power plant as well as the fast start and black-start capabilities. Finally, the associated microgrid offers further resilience benefits. The technical aspects of the Project's design are described in further detail in Mr. Dickens's Direct Testimony, while the details of the proposed microgrid are included in the Direct Testimony of Mr. Datta. In its totality, the Project and microgrid will assist the

Company's efforts to prepare for, adapt to, and recover from extreme weather events in the Leeville/Port Fourchon area and beyond.

Q12. CAN YOU EXPLAIN HOW THE PROJECT'S LOCATION OFFERS RESILIENCE BENEFITS?

A. As noted in the Direct Testimony of Ms. Beauchamp and Mr. Datta, the area in which the BPS would sit is vulnerable to storms and is served by a single transmission line with no nearby generation. This Project, if approved, would provide the area with a second source of electricity as well as local generation. This reality, combined with many of the resilient design features I discuss below, may be able to provide significant resilience benefits to local customers by acting as proactively-installed distributed generation. Proactively-installed distributed generation is generally more cost effective than post-event distributed generation – such as the temporary generators that may be brought in to serve critical loads in the aftermath of an extreme event – and is more likely to be available in the immediate aftermath of a major event or unexpected outages.

Q13. CAN YOU EXPLAIN HOW THE PROJECT'S DESIGN AS A FLOATING POWER PLANT OFFERS RESILIENCE BENEFITS?

A. As detailed by Mr. Dickens, the Project has been designed as a floating power station. The barge and mooring system are designed for 100-year storm events and are able to withstand 178 mph, 3-second gust wind and a maximum design surge including tide of 18 feet. These design features should enable the BPS to weather significant storm

events while continuing to provide power through the event or to withstand the event so that it may take advantage of its fast start and black start capabilities to return to power generation as soon as is safely possible following the event. These design features also enable the BPS potentially to shorten the duration of outages and benefit customers following extreme events.

Q14. CAN YOU EXPLAIN HOW THE PROJECT'S FAST START AND BLACK-START CAPABILITIES OFFERS RESILIENCE AND OTHER BENEFITS TO A GRID WITH INCREASING NUMBERS OF INTERMITTENT GENERATION RESOURCES?

A. As explained in more detail by Messrs. Dickens and Datta, the RICE units are able to start and achieve full load in a very short period of time (about five minutes from warm engine), and they are able to start and stop multiple times in a single day. Both of these characteristics are critical to supplying generation when renewable resources are not available (e.g., on cloudy or rainy days, or after sunset). The fast start capability is a great option in a peaking or emergency situation. These engines can supply electricity on demand when renewable resources may not be available. This alternative also allows for partial load operation in the event there is not enough renewable energy available. As more and more intermittent resources are added to the grid to meet customer and utility sustainability goals and to achieve the energy savings that such resources provide, the availability of fast start resources such as BPS will become more and more important to ensure reliable service to customers. Moreover, the availability of fast start resources such as the BPS may help enable the reliable addition of more

intermittent generation resources than would otherwise be possible while maintaining reliability on the grid.

Mr. Datta also explains that black-start capability is the ability of the plant to start up under its own power without a back feed of power from the electric grid. Typically, there is an auxiliary load supplied to the unit from the local switchyard. In the event of a complete loss of power, the floating power facility will have the ability to supply its own power to start-up and supply power to the grid as needed. This is a significant and much needed resilience benefit because, in the aftermath of an extreme weather event, due to damage to the grid, there may not be grid power available to start a generation resource that requires such power for startup.

Q15. CAN YOU EXPLAIN HOW THE PROPOSED MICROGRID OFFERS RESILIENCE BENEFITS?

A. As I mentioned previously, system resilience is the ability to prepare for, adapt to, and recover from non-normal events. While these solutions do not prevent damage during a weather event, microgrids and other non-wires alternatives ("NWAs") can improve resilience by helping modernize the Company's system and providing an alternative source to rapidly recover and help restore electric service when outages occur during major events. The distributed and de-centralized nature of the NWAs, especially when incorporated into the Company's larger resilience plan that helps ensure that the nearby wires infrastructure on which NWAs rely is appropriately hardened against extreme events, allows for an alternative, localized means of restoring power quickly after a disruptive event if the transmission or distribution systems in the broader region are

damaged and not immediately available. In this manner, NWAs potentially shorten the duration of customer outages after extreme weather events.

However, in considering the value NWAs could bring to improving system resilience, it is important to remember that the microgrid, the communication and switching devices, and the local source of power must all be capable of surviving major storms or other disruptive events such that they are capable of operating immediately and safely after that event. Furthermore, the distribution system connecting the various parts of the microgrid together, including the local power source and the customers served by the microgrid, also must be hardened such that it is capable of surviving the disruptive weather event. Accordingly, hardening the identified distribution and transmission assets as part of the Company's larger resilience plan plays a critical role in implementing any NWAs, and, in order to take full advantage of these newer technologies, any investment in those technologies must be made hand-in-hand with an investment in hardening the Company's distribution and transmission systems. In this way, the proposed investments in hardening distribution and transmission assets further benefit ELL's customers by establishing a necessary, resilient framework and foundation for new and emerging technologies.

Q16. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY AT THIS TIME?

A. Yes.

AFFIDAVIT

STATE OF TEXAS

COUNTY OF MONTGOMERY

NOW BEFORE ME, the undersigned authority, personally came and appeared, **SEAN MEREDITH**, who after being duly sworn by me, did depose and say:

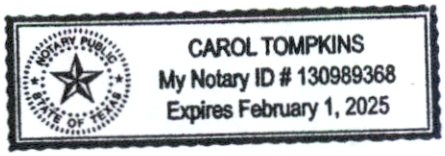
That the above and foregoing is his sworn testimony in this proceeding and that he knows the contents thereof, that the same are true as stated, except as to matters and things, if any, stated on information and belief, and that as to those matters and things, he verily believes them to be true.

Sean Meredith

SWORN TO AND SUBSCRIBED BEFORE ME
THIS 26th DAY OF FEBRUARY, 2024

NOTARY PUBLIC

My commission expires: February 01, 2025



Listing of Previous Testimony Filed by Sean Meredith

DATE	TYPE	SUBJECT MATTER	REGULATORY BODY	DOCKET NO.
04/30/2021	Direct	ELL Storm Recovery Filing	LPSC	U-35991
07/23/2021	Supplemental	ELL Storm Recovery Filing	LPSC	U-35991
12/19/2022	Direct	ELL Resilience Plan Filing	LPSC	U-36625
11/13/2023	Rebuttal	ELL Resilience Plan Filing	LPSC	U-36625