STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

In the Matter of the Applications of Benton Solar, LLC for a Site Permit for the 100 MW Solar Energy Generating System, a Site Permit for the 100 MW Battery Energy Storage System and a Route Permit for the 115-kV High-Voltage Transmission Line Associated with the Benton Solar Project in Benton County, Minnesota	Docket No. IP7115/GS-23-423 Docket No. IP7115/ESS-24-283 Docket No. IP7115/TL-23-425 OAH Docket No. 25-2500-40508

DIRECT TESTIMONY OF

Ashley Nunez

On Behalf of

BENTON SOLAR, LLC

June 30, 2025

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Schedules

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name and business address.

A. My name is Ashley Nunez. My business address is 700 Universe Boulevard, Juno Beach, Florida 33408.

Q. By whom are you employed and in what capacity?

A. I am employed by NextEra Energy Resources, LLC ("NEER") in¶ the capacity of Principal Engineer - ESS Fire Safety Engineer.

Q. For whom are you testifying?

A. I am testifying on behalf of the Applicant, Benton Solar, LLC ("Benton Solar"), which is a wholly-owned indirect subsidiary of NEER.

Q. What is your role with respect to the Project?[1]

A. I am the fire and safety expert for battery energy storage for the Project. This includes advising on BESS design to ensure compliance with current fire safety codes and regulations and assisting with training local fire departments.

Q. What is the purpose of your testimony in this proceeding?

A. I testify in support of Benton Solar's Joint Site Permit Application, which seeks the required authorizations and permits from the Minnesota Public Utilities Commission to construct, own, and operate an up to 100-MW battery energy storage system ("BESS"). Specifically, my testimony is comprised of three principal sections: Section II provides an overview of the BESS equipment and location; Section III describes the design

[1] My testimony refers to the up to 100-megawatt ("MW") capacity solar energy conversion facility as the "Solar Facility," the up to 100-MW battery energy storage system as the "BESS," and the approximately 0.5 mile, 115-kilovolt high-voltage transmission line as the "Transmission Line." My testimony uses the term "Project" to refer to all three components collectively (i.e., the Solar Facility, the BESS, and the Transmission Line).

considerations and safety components of the BESS; and lastly Section IV responds to public comments related to the BESS.

Q. What conclusions do you reach in your testimony?

A. For the reasons I provide in my testimony, I conclude that the BESS proposed in Benton Solar's Application should be approved because it: (i) advances renewable energy production and usage in the state of Minnesota in support of state carbon reduction goals and (ii) is a safe and necessary addition to the Solar Facility.

Q. Please summarize your qualifications and experience.

A. I hold a bachelor's degree in mechanical engineering and bring 8 years of experience as a fire protection engineer in the power generation industry. My professional expertise is complemented by my 7 years of service as a volunteer firefighter, where I have developed specialized skills as a hazmat technician and in industrial firefighting.

Q. What Sections of the BESS Site Permit Application are you sponsoring?

A. I am sponsoring BESS Site Permit Application Sections 1–3.

Q. What schedules are attached to your testimony?

A. Attached to my testimony is the following schedule:

- Schedule 1 – Resume of Ashley Nunez

Q. Was this testimony drafted by you or under your supervision?

A. Yes.

II. PROJECT DESCRIPTION

Q. Can you please provide a summary of the BESS and its location?

A. The BESS will be co-located with the Solar Facility in Minden Township in Benton County, Minnesota. The BESS will have a power output of 100 MW and a storage capacity

of 400 MWh. The BESS may also provide frequency response, capacity on demand, generation smoothing, and shifting or firming of the power output from the Solar Facility. The BESS would be a critical part of the Project, working in tandem with the Solar Facility to provide net power generation that is more predictable and cost-effective than that provided by a system without a BESS.

The BESS has a centralized design, meaning that the batteries are placed in steel energy storage system cabinets in one location on the site rather than multiple locations. Each cabinet contains individual sealed battery cells that are assembled together in battery modules. Benton Solar will install multiple battery modules in racks that are then placed in the cabinet. The containerized design provides system segmentation and spatial separation of BESS components that greatly reduces the risk of fire propagation. The BESS also includes a battery management system ("BMS") that monitors battery voltage, current, temperature, charge, discharge, thermal management, fault diagnosis, and more.

The BESS will be located within the Project area and is anticipated to be in the western portion of the Project area adjacent to 55th Avenue NE.

III. CONSTRUCTION AND SAFETY

Q. How has Benton Solar incorporated safety precautions into the design of the BESS?

A. Safety for employees, neighbors, and the public is a top priority for Benton Solar. To that end, Benton Solar will ensure that the BESS is designed in compliance with the latest applicable safety codes—including National Fire Protection Association ("NFPA") Standard 855, the National Electric Code ("NFPA 70E"), the Minnesota State Fire Code ("MSFC"), and Underwriters Laboratories ("UL") safety standards. Those same standards

and codes inform Benton Solar's procurement of BESS equipment and govern the operation of the BESS.

In addition, as explained in more detail in this section, the BESS includes numerous physical protections from thermal runaway events and has monitoring equipment to provide Benton Solar with up-to-date, detailed information about the status of the BESS.

Q. Please explain what is meant by the term thermal runaway?

A. Thermal runaway is a self-sustaining internal chemical reaction within an individual battery cell in which it generates more heat than it can dissipate. The heat that is generated can trigger the same chemical reactions in other battery cells, known as propagation. Additional layers of mitigation, including physical barriers, separation, and active mitigation systems, are in place to prevent propagation in the very rare scenario of a thermal runaway event.

Q. How is the BESS designed to protect against thermal runaway events?

The BESS will utilize a containerized system that was designed and tested to provide protection from thermal runaway events. The BMS is tested and certified as a thermal runaway prevention device, identifying the precursors to thermal runaway, de-energizing, and isolating the system preemptively. The containerized system includes thermal barriers between individual battery cells within a module. Then the modules are isolated from other modules in the same rack, and the racks are mounted with physical barriers separating them. Finally, the racks are placed in a container with exterior steel walls. Each of these layers of separation and containment between cells, modules, and racks is designed to prevent the spread of any fire that occurs in one battery cell and significantly reduce any risk of a thermal runaway event propagating.

The containerized system will be tested under the industry-recognized UL 9540A, the Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems. The test forces the equipment into a worst-case scenario to demonstrate that the containerized system described above works as designed to isolate any excess heat and that a thermal event in one container[2] will not propagate to an adjacent container.

In addition to the design of the BESS, it is subject to 24/7/365 remote monitoring at the NextEra Energy Renewable Operations Control Center ("ROCC"), which allows system operators to remotely observe the status of the BESS and safely shut down or isolate any part of the system in the event of an emergency.

Q. If there is a thermal runaway event, what precautions has Benton Solar taken to protect the community?

A. In the unlikely scenario of a thermal runaway event, any fire would be identified by detection systems in the BESS container, the container would be remotely disconnected by the ROCC, and the thermal event would be isolated to a single container. Any smoke or gas produced from the battery cell would be predominately hydrogen, carbon dioxide and carbon monoxide, which would dissipate rapidly into the atmosphere.

Additionally, Benton Solar has coordinated, and will continue to coordinate with, local emergency responders to provide training and develop an Emergency Action Plan ("EAP") that prioritizes the safety of surrounding residents, structures, and emergency responders. Benton Solar began this outreach and training with Benton County Emergency

[2] The Minnesota State Fire Code and International Fire Code utilize the terms "ESS" or "BESS" to refer to an individual container within a larger energy storage facility. I utilize the term "container" instead to avoid confusion based on the Minnesota statutory definition of an "energy storage system" (often abbreviated ESS or BESS), which generally refers to the larger energy storage facility instead of an individual container.

Management on August 14, 2024, prior to submitting the Joint Site Permit Application. The training advised the responders not to attempt to intervene in any fire limited to the BESS and instead to allow it to self-terminate within the BESS. Any emergency response would be limited to protecting the safety of personnel and the surrounding areas.

As explained in Section 3.4.4 of the Joint Site Permit Application, the EAP will also include site evacuation plans, egress routes, and staging areas. As explained above, however, Benton Solar does not anticipate any evacuations of buildings or residences adjacent to the Project because the design of the BESS includes fire mitigation measures.

Q. Does Benton Solar have emergency plans for incidents other than thermal runaway events?

A. Benton Solar will also develop a more generalized safety plan for emergency procedures in the event of evacuation, fire, extreme weather conditions, injury, and criminal activity. The additional safety plan will be for construction, operation and maintenance employees, and can be shared with Benton County Emergency Management and other response teams as needed.

Q. Has the design of the BESS considered the risks associated with storms and extreme weather?

A. Yes, all of NEER's (and its subsidiaries') BESS facilities, including Benton Solar's BESS, are designed for the worst possible weather conditions in the region where they will be installed. The Benton Solar BESS design takes into consideration lightning, heavy rain, and severe storms that occur in Minnesota. The design includes incorporating short circuit protection that would protect against a lightning strike and ground protection for any lightning strikes or water infiltration.

Q. What experience does NEER have with co-located solar and BESS projects?

A. NEER has been investing in the State of Minnesota since 2000, developing wind, solar, and battery storage projects, and it has significant industry experience nationwide. NEER's nationwide portfolio includes 33 gigawatts ("GW") of operating solar and wind facilities, 3 GW of operating BESSs, and over 25 co-located solar and BESS facilities. As a result, Benton Solar's co-location of the BESS with the Solar Facility is neither a pilot nor an experiment, but a continuation of installing over two dozen safe co-located facilities across the country.

IV. RESPONSE TO PUBLIC COMMENTS

Q. Are there public comments filed during this proceeding that you wish to address in your testimony?

A. Yes, I would like to respond to comments about: (i) the equipment to be used by Benton Solar for the BESS; (ii) potential health risks from the BESS; (iii) risks of electric and magnetic fields ("EMF") from the BESS; and (iii) fire and emergency response.

Q. What is your response to questions about what equipment will be used for the BESS?

A. The BESS will utilize lithium-ion battery technology and will be designed, tested, installed, operated, and maintained in accordance with NFPA 855 and the MSFC.

Q. What is your response to comments about the potential health risks associated with the BESS?

A. The BESS does not pose a risk to the health and safety of the community. Battery cells are completely sealed and do not leak or produce any emissions. In the very rare scenario of a thermal runaway event, continuous monitoring and post-event testing of incidents at other

companies' BESSs have revealed no air, soil, or water contamination.[3] Moreover, a recent report prepared for the American Clean Power Association concluded that battery storage systems pose low environmental and health risks, stating, "In none of the reviewed cases of environmental sampling related to the BESS fire events were contaminant concentrations found that would pose a public health concern or necessitate further remediation."[4] At the end of life for the Project, the battery cells may either be repurposed for another use (second-life) or recycled. As with photovoltaic panels most of the materials used in lithium-ion cells can be recovered and recycled at the end of their useful life.

Q. What is your response to public comments that raised concerns about EMF from the BESS?

[3] For example, testing conducted and reports prepared in response to a fire at a SDG&E battery storage facility in California on September 5, 2024 (not affiliated with Benton Solar or NEER) indicated that no hydrofluoric acid was present and instead "only normal products combustion of a structure fire were detected and at levels considered by NIOSH and OSHA to be well below exposure thresholds." *Air Quality Report and Water Run Off Report for the SDG&E Battery Storage Fire*, Escondido (Sept. 19, 2024), at 17, available at https://www.escondido.gov/DocumentCenter/View/6716/SDGE-Battery-Fire-Air-Quality-Report-PDF?bidId.

Similarly, EPA monitoring at the Vistra Energy facility in Moss Landing, California for a fire that began on January 16, 2025, concluded that "concentrations of particulate matter [were] consistent with the air quality index throughout the Monterey Bay and San Francisco Bay regions, with no measurements exceeding the moderate air quality level. Hydrogen fluoride gas was measured at one second intervals and there were no exceedances of California's human health standards." *EPA Completes Air Monitoring Near Moss Landing Vistra Battery Fire* (Jan. 20, 2025), available at https://www.epa.gov/newsreleases/epa-completes-air-monitoring-near-moss-landing-vistra-battery-fire.

Conclusions were similar for a 2022 incident at a separate PG&E facility in Moss Landing, California where Monterey County authorities determined there was no risk to human health: "[P]articulate fluoride and hydrogen fluoride airborne concentrations around the perimeter of the site were below the detection limit for the method, and well below the applicable permissible exposure limit for both chemicals*." Air quality testing showed no hazards to human health amid battery fire in Moss Landing* (Sep. 30, 2022), available at https://www.montereycountynow.com/blogs/news_blog/air-quality-testing-showed-no-hazards-to-human-health-amid-battery-fire-in-moss-landing/article_5a0ee07a-4125-11ed-a797-c31048cab7a5.html.

[4] *Assessment of Potential Impacts of Fires at BESS Facilities Executive Summary* (April 25, 2025), at 1, available at https://cleanpower.org/wp-content/uploads/gateway/gateway/2025/04/Safety-Executive_Summary_04-25-25.pdf. *See also Battery fires pose minor environmental risks: ACP report* (Apr. 1, 2025), available at https://www.utilitydive.com/news/battery-fires-pose-minor-environmental-risks-acp-report/744094/.

A. Benton Solar does not expect any risk of EMF from the BESS, but any potential EMF would dissipate to acceptable background levels long before reaching any residences.

Q. What is your response to public comments that raised concerns about the potential for fires and the need for emergency response plans?

A. Section III of my testimony addresses these concerns in more detail. At a high level, safety of employees and the surrounding community is a top priority for Benton Solar when designing a BESS. To protect the health and safety of the community, the BESS is designed and rigorously tested to significantly reduce the risk of any fires. Additionally, Benton Solar has been and will continue to coordinate with local emergency responders to prioritize the safety of the community and the responders.

It bears reiterating that the risk of a BESS fire is minimal and continues to decrease with the advancement of BESS technology and applicable standards. According to the Electrical Power Research Institute, deployment of BESS has increased from about 3 GW to over 48 GW from 2018 to 2023. In that same time, the failure rate per deployed GWh of BESS has decreased by approximately 97%.[5]

Q. What is your response to public comments about NEER and Benton Solar's prior experience with standalone and co-located BESS projects?

A. As noted above in Section III, NEER has significant experience with renewable energy developments both in Minnesota and around the country, including 25 co-located solar and BESS facilities.

[5] *See* the Electric Power Research Institute's BESS Failure Incident Database, *available at* https://storagewiki.epri.com/index.php/BESS_Failure_Incident_Database.

V. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.

Schedule 1 - Resume

Ashley Tyler Nuñez

Port Saint Lucie, Florida
atyler17@gmail.com cell (607) 742-8647 www.linkedin.com/in/ashley-tyler17

Education

Rochester Institute of Technology, Rochester, NY
Degree: Bachelor of Science, May 2011
Major: Mechanical Engineering – Aerospace option

Oklahoma State University, Stillwater, OK
Fire Protection Technology Certificate Program

New York State Firefighter 1, Rochester, NY
New York State Emergency Medical Technician, Rochester, NY

Professional Experience

NextEra Energy, *Juno Beach, FL*
Fire Safety Engineer, Battery Energy Storage Systems | Spring 2025 – Present

• Advise on utility-scale battery energy storage systems (BESS) designs to ensure fire safety code compliance • Provide on-site training to local fire departments on BESS hazards and emergency response protocols • Standardize BESS fire safety systems information across regions and coordinate consistent messaging

Fleet Fire Protection Engineer | Summer 2023 – Spring 2025

• Managed fire protection program for NextEra's fleet of nuclear plants, working with individual fire protection engineers at each site • Conducted equipment training, health and safety oversight for NRC, NEIL, and INPO compliance • Investigated future use of remote fire watch carts and evaluated equipment for maintenance rule compliance • Lead team evaluation for re-commissioning of Duane Arnold Energy Center (offline since 2020)

Exelon Nuclear – Ginna Nuclear Power Plant, *Ontario, NY*
Engineering Equipment Operator | Summer 2018 – Winter 2020
• Operated, monitored and tested safety-related equipment and power plant system auxiliaries • Performed safety tagging activities and ensured safe completion of maintenance activities and repairs • Built expertise in pumps, diesel engines, radiation practices, and fire systems for emergency response team

Fire Systems Engineer | Spring 2015 – Summer 2018

• Lead system engineer responsible for fire system throughout nuclear power plant site • Conducted system walkdowns, equipment trending, health reports, and site NFPA 805 standards compliance • Interfaced with maintenance and operations, providing engineering support for suppression and detection systems, passive barriers, and active fire barriers • Coordinated diesel and motor fire pump replacements and Halon fire system upgrades • Performed cost and risk analysis to support senior leadership decisions

(Continued on next page)

Schedule 1 - Resume

Ashley Tyler Nuñez

Cell phone: 607-742-8647

E-mail: atyler17@gmail.com

Additional Experience

L3Harris Space and Airborne Systems, *Rochester, NY*

Mechanical Design Engineer | Spring 2021 – Summer 2023

• Hardware design engineer for space precision optics division, specialized in space telescope manufacturing

Odyssey Controls, *Bergen, NY*

Controls Systems Engineer | Winter 2020 – Spring 2021

• Designed fire, hazardous gas monitoring, and pollution abatement systems with PLC programming expertise

Firefighting Experience

Penfield Volunteer Fire Company, *Penfield, NY* - Interior Firefighter | Winter 2018 – Summer 2023 • Active volunteer firefighter with interior attack qualifications and emergency response experience

Technical Skills

Fire Protection: NFPA Codes, Fire System Design, BESS Fire Safety, Nuclear Fire Protection, Confined Space Entry and Rescue, HAZMAT Technician, Rope Rescue

Software: ProEngineer/CREO, SolidWorks, CATIA, Visual Basic, Microsoft office suite, Lab-View, Agile, Autocad, PowerBI

Additional: MIL-810G testing standards, DVT and HALT testing, FAA requirements, basic Cisco routing and switching, Geometric Dimensioning and Tolerancing, PLC programming, ASME Section XI

Leadership & Activities

Women in Nuclear (WIN) Winter 2017 – Spring 2020

Communications chair for the Ginna Nuclear Power Plant WIN chapter

NAYGN (North American Young Generation in Nuclear) Winter 2015 – Spring 2020

Treasurer for the Ginna Nuclear Power Plant NAYGN chapter

Harris GRAD (Graduate Acclimation and Development) Winter 2012 – Winter 2015

Member and Special Events Chair of an employee resource group that helps welcome and involve new Harris hires and young professionals.

Tech Lead – University of Michigan Multi-Disciplinary Design Project Winter 2013 – Winter 2015

Working with University of Michigan students on a Harris sponsored multi-disciplinary project for an insole pedometer that includes energy harvesting and app development.