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March 30, 2020

VIA ELECTRONIC FILING

M.. Kimberley A. Campbell, Chief Clerk
North Carolina Utilities Commission
4325 Mail Service Center
Raleigh, North Carolina 27699-4300

**RE: Duke Energy Progress, LLC Western Carolinas Modernization Project
Annual Progress Report
Docket No. E-2, Sub 1089**

Dear Ms. Campbell:

Pursuant to the Commission's March 28, 2016 *Order Granting Application in Part, with Conditions, and Denying Application in Part* (the "Order"), I enclose the Annual Progress Report of Duke Energy Progress, LLC ("DEP") for the two 280 MW combined cycle natural gas-fueled, with fuel oil backup, electric generating units at the Company's Asheville Steam Electric Generating Plant in Buncombe County, for filing in connection with this matter. In compliance with ordering paragraph No. 5 of the Order, DEP reports on the progress of construction activities and the current cost estimate. As noted in the report, DEP continues to work with the original equipment manufacturer to repair a manufacturing defect in the Unit 8 Steam Turbine Generator of Power Block 2 and currently expects to place the Unit 8 Steam Turbine Generator into commercial operation in April 2020. In compliance with ordering paragraph No. 6 of the Order, DEP reports accomplishments to date on efforts to work with customers in the Western Region to reduce peak load through demand-side management, energy efficiency and other measures and on DEP's efforts to site solar and storage capacity in the Western Region.

Thank you for your attention to this matter. If you have any questions, please let me know.

Sincerely,

Lawrence B. Somers

Enclosure

cc: Parties of Record

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Mar 30 2020

Duke Energy Progress, LLC
Western Carolinas Modernization Project
Annual Progress Report for the Asheville Combined Cycle Project and Community
Engagement for Demand-Side Management, Energy Efficiency and Technology
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I. Construction

The Asheville Combined Cycle Project ("ACC Project") is a nominal 560 MW dual-fuel generation facility construction project comprised of two separate 1x1 combined cycle units (280 MW each) authorized to be constructed as a component of the larger Western Carolinas Modernization Project ("WCMP"). Progress on the ACC Project over the past year has focused on contract execution, completion of engineering, procurement activities for balance of plant equipment, remaining permitting activities, and construction of the plant.

On August 3, 2016, Duke Energy Progress, LLC ("DEP") executed an Engineering, Procurement and Construction Agreement with CB&I North Carolina, Inc. ("CB&I") to design, engineer, procure balance of plant equipment, and construct the new generating facility, including incorporation and installation of DEP furnished major equipment (turbines, heat recovery steam generators, generator step-up transformers, and control systems). In 2018, CB&I was acquired by McDermott. McDermott will fulfill the original CB&I contract requirements. A summary of key project milestone dates, including their current status is provided in Attachment A to this report.

DEP continues to monitor actual expenditures and forecast the project's cost at completion on a monthly basis. At this point in time, the project's cost at completion is forecasted to be within the previously authorized and stated \$893.2 million. This authorized estimate value includes all required engineering, procurement, construction, and commissioning costs as well as required oversight costs from DEP as owner, transmission interconnect costs, and allowance for funds used during construction ("AFUDC").

Construction of all systems required for operation are complete. The EPC contractor, McDermott, continues to work towards completion of the remaining miscellaneous systems required to declare Substantial Completion. The Power Block 1 generation assets were declared commercial on December 27, 2019. The Power Block 2 combustion turbine generator Unit 7 (CTG07) was declared commercial using natural gas only as fuel on January 15, 2020. Combustion issues during commissioning with fuel oil have prevented Unit 7 from being declared commercial using fuel oil; however, to date, there has been no need to run the unit on fuel oil due to adequate natural gas supply, so there have been no negative consequences to customers. The manufacturer has determined the problems are from hardware that must be replaced. This activity is currently scheduled to be completed in April 2020. During commissioning, a mechanical failure occurred in the Power Block 2 steam turbine generator (STG08). The manufacturer is working to make repairs, and the STG08 generator is currently forecast to be placed in service April 2020.

II. Community Engagement for Demand-Side Management and Energy Efficiency

In 2016 a group of local leaders, representing the City of Asheville, Buncombe County, and Duke Energy, attended the Rocky Mountain Institute’s eLab Accelerator to outline a community engagement effort to increase demand-side management, energy efficiency and distributed energy resources locally. From this grew the Energy Innovation Task Force (“EITF”). The EITF was formed in 2016, comprised of a diverse group of community leaders to:

1. Avoid or delay the construction of the planned contingent CT.
2. Transition DEP-West to a smarter, cleaner and affordable energy future.

As referenced in the company’s 2018 and 2019 Integrated Resource Plans, in part through this community collaboration in Buncombe County, the contingent CT has been pushed out beyond the 15-year planning horizon. One of the strategies put in place by the EITF was the formation of the Blue Horizons Project, an outward facing marketing/engagement effort to connect with customers.

Throughout 2019, the conveners of the EITF worked to redefine the future goal and purpose of the task force. The EITF has since been dissolved but recast as the Blue Horizons Project Community Council (“BHPCC”). The purpose of this council will be to drive behavior and investments that help achieve the community’s renewable energy goal.

In late 2018, both the City of Asheville and Buncombe County issued 100 percent clean/renewable energy goals. The goals require that both the City and County achieve the 100 percent targets for operations by 2030, and for all homes and businesses by 2042.

The original conveners all agree that a continued commitment and partnership among the City, County, and Duke Energy is critical to enable success of these very ambitious local goals.

III. Technology: Solar, Storage, Microgrid Development

To that end, our commitments to fully leverage technology to help achieve these goals is steadfast. Below is a discussion of those commitments and continued development.

Project Update:

1. Mt. Sterling Microgrid (Docket No. E-2, Sub 1127)
 - Haywood County

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March 30, 2020

- Approximate Capacity – 10 kW Solar PV and 95 kWh Battery Storage Facility
 - NCUC Order Granting CPCN – April 2017
 - Completion Date – May 2017
2. Asheville – Rock Hill Battery
 - Buncombe County
 - Sited at utility-owned substation
 - Approximate Capacity – 9 MW Battery Storage Facility
 - Anticipated In-Service Date – 2020
 3. Hot Springs Microgrid (Docket No. E-2, Sub 1185)
 - Madison County
 - Approximate Capacity – 2 MW Solar PV and 4 MW Battery Storage Facility
 - NCUC Order Granting CPCN – May 2019
 - Anticipated In-Service Date – 2020
 4. Woodfin Solar
 - Buncombe County
 - Approximate Capacity – 4 to 5 MW Solar PV
 - Anticipated CPCN Filing – 2020
 - Anticipated In-Service Date – 2021
 5. Riverside Battery
 - Buncombe County
 - Sited at utility-owned substation
 - Approximate Capacity – 5 MW Battery Storage Facility
 - Anticipated In-Service Date – 2021
 6. Asheville Solar and Battery
 - Buncombe County
 - Sited at utility-owned CC plant
 - Approximate Capacity – 9 to 10 MW Solar PV and 17 to 18 MW Battery Storage Facility
 - Anticipated In-Service Date – 2024

As stated in DEP’s most recent WCMP Annual Progress Report, DEP identified several opportunities to deploy solar and storage projects throughout its western region, specifically to meet the Commission’s order to deploy at least 15 MW of new solar generation and 5 MW of utility-scale storage. To that end, DEP focused initially on maximizing generation and storage capacity on Duke-owned land while also evaluating multiple sites owned by customers and members of the community. In addition, DEP

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Docket No. E-2, Sub 1089
March 30, 2020

received significant interest from customers in the DEP-Western region to partner on innovative solutions to support their renewable energy, sustainability, and reliability goals.

The combined capacity planned for the Company’s solar facilities at Hot Springs, Woodfin, and the Asheville CC Plant is expected to fulfill the 15 MW goal ordered by the Commission. The solar facility at Hot Springs (approximately 2 MW), a component of the recently approved Microgrid, is expected to begin construction this year. The Woodfin Solar facility (approximately 5 MW) is planned to be located on a portion of the Buncombe County-owned municipal landfill. This project is unique in that it will allow the Company to partner with a key municipal customer in helping them achieve their renewable energy goals, gain experience owning and operating a solar facility on a landfill and add solar generation to our generation mix in this part of the service area. DEP recently received a conditional use permit from the Town of Woodfin to allow for the development of this site for solar, and the Company currently plans to file the CPCN for this project in the second quarter of 2020. The solar facility planned at the Asheville CC Plant (approximately 9 MW) is expected to begin construction following the closure of the coal ash basin and demolition of the closed coal-fueled generation facility. To further support the renewable energy goals and objectives of the WCMP, DEP is planning to sell the Renewable Energy Certificates (“RECs”) generated from these solar PV facilities to customers in the region. If the RECs are not able to be sold to customers in the region, DEP could then request approval to use the RECs for future compliance with North Carolina’s Renewable Energy and Energy Efficiency Portfolio Standard (“REPS”).

The Company plans to surpass its goal of deploying at least 5 MW of battery storage by pursuing investments in a limited number of projects to gain additional operational and technical experience with evolving utility-scale storage technologies. Along with the Mt. Sterling Microgrid (10 kW solar and 95 kWh battery) installed in 2017, the approximately 9 MW Asheville/Rock Hill Battery is nearing completion, and the Company expects to begin construction on the Hot Springs Microgrid this year. Additionally, two battery projects in the interconnection queue are under development on Company-owned land in Buncombe County to further demonstrate the benefits of utility-owned and operated battery storage and to support the goals of the local community. These deployments will allow for a comprehensive evaluation of potential benefits to the distribution, transmission, and generation systems from batteries while also providing actual operations and maintenance cost impacts of batteries deployed at this scale. The Company will work with multiple planning departments in this evaluation process, utilizing the Integrated Systems and Operations Planning (“ISOP”) framework, which supports this critical objective for its customers.

Duke has taken a robust and thorough approach to design and implementation of battery energy storage system safety. Duke is working with top industry and safety code associations like the National Fire Protection Association, Institute of Electrical and

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Electronics Engineers, and Underwriters Laboratories to adopt rigorous safety procedures for its projects. The Company also contracted with Wilmington, NC-based American Fire Technologies, a leading fire protection engineering company, for guidance in safety system design. It also continues to directly communicate with battery manufacturers and system suppliers to ensure extensive safety testing of their equipment prior to installing the batteries.

This work led to safety systems that are designed with layers of protection technologies.

The system will shut down rapidly and deploy needed safety measures in the event of an issue. The measures include:

- Early detection of abnormal voltage, temperature, electrolyte gases or smoke/fire
- Response mechanisms that eliminate any gas build-up, which lowers fire risks
- Clean agent fire suppression system designed for electrical equipment environments
- Pressure relief system to relieve internal pressure buildup in the battery system container
- Sprinkler system with deluge piping to flood the container if needed

Duke will also implement an Emergency Action Plan (“EAP”) at each site. This process is done in coordination with local fire departments and first responders before any project is energized and is appropriately reviewed and updated annually. Also, local fire departments receive on-site response training prior to the site starting operation. 911 call centers will have a standard alert when a battery site address is received, and first responders are notified that they are heading to a battery site to understand the necessary precautions.

As part of Duke’s continued commitment to working with communities, the Mayor, Board of Alderman of the Town of Hot Springs, and Duke hosted a stakeholder meeting with the community in to address their concerns and answer questions about the microgrid project. It was widely attended and lasted several hours to make sure that anyone who had questions or concerns had an opportunity to voice them. As additional projects move forward as part of WCMP, Duke will continue to engage stakeholders to ensure the community needs are met and facilitate transparency.

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 March 30, 2020

ATTACHMENT A - Project Milestone Dates

Milestone	EPC Baseline (Nov. 2017)	Current Plan
Receipt of Air Permit	01/09/2017	01/09/2017(A)
82 Basin Dam Decommissioning	10/31/2017	11/29/2017(A)
Site Prep/Fill Completion	10/31/2017	12/06/2017(A)
Full Notice to Proceed ("FNTP") to EPC	10/23/2017	10/23/2017(A)
Transmission Complete for Backfeed	01/01/2019	04/03/2019(A)
Backfeed	02/16/2019	04/28/2019(A)
EPC Contractor Mechanical Completion	06/15/2019	11/26/2019(A)
Commercial Operation Date (Power Block 1, 280 MW)	11/15/2019	12/27/2019(A)
Commercial Operation Date (Power Block 2 CTG07 (gas), 180 MW)	11/15/2019	1/15/2020(A)
Commercial Operation Date (Power Block 2 CTG07 (fuel oil), 180 MW)	11/15/2019	4/30/2020
Commercial Operation Date (Power Block 2 STG08, 100 MW)	11/15/2019	4/15/2020

CERTIFICATE OF SERVICE

I certify that a copy of Duke Energy Progress, LLC's Annual Progress Report, in Docket No. E-2, Sub 1089, has been served by electronic mail, hand delivery or by depositing a copy in the United States mail, postage prepaid to the following parties:

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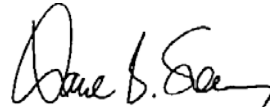
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This is the 30th day of March, 2020.



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