

**BEFORE
THE NORTH CAROLINA UTILITIES COMMISSION**

DOCKET NO. E-2, SUB 1300

In the Matter of:)
)
Application of Duke Energy Progress, LLC)
For Adjustment of Rates and Charges)
Applicable to Electric Service in North)
Carolina and Performance-Based Regulation)

**SUPPLEMENTAL DIRECT
TESTIMONY OF
TOM RAY
FOR DUKE ENERGY
PROGRESS, LLC**

1 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

2 A. My name is Tom Ray. My business address is 12700 Hagers Ferry Road,
3 Huntersville, North Carolina.

4 **Q. DID YOU PREVIOUSLY SUBMIT PRE-FILED DIRECT TESTIMONY**
5 **IN THIS PROCEEDING?**

6 A. Yes. I submitted pre-filed direct testimony that, in part, supported the nuclear
7 projects that are a part of DEP's Multiyear Rate Plan ("MYRP") included in
8 DEP's Performance-Based Regulation Application ("PBR Application" or the
9 "Application") filed on October 6, 2022.

10 **Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT**
11 **TESTIMONY?**

12 A. My supplemental direct testimony provides an update on the nuclear projects
13 that are included in DEP's MYRP. First, I identify those nuclear MYRP projects
14 that have been identified as no longer necessary or as having moved outside of
15 the MYRP period, along with the reasons behind such changes. Second, I
16 provide updated project cost estimates for certain nuclear MYRP projects,
17 including explanations for the basis for such updated cost estimates.

18 **Q. ARE YOU PROVIDING ANY EXHIBITS WITH YOUR**
19 **SUPPLEMENTAL DIRECT TESTIMONY?**

20 A. Yes. My Ray Supplemental Exhibit 1 provides details regarding each of the
21 nuclear MYRP projects supported by my testimony, including projected cost,
22 schedule, scope, and the reason for each project as required by Commission
23 Rule R1-17B(d)(2)j. My Ray Supplemental Exhibit 2 compares the list of

1 nuclear MYRP projects and their projected costs presented in Ray Supplemental
2 Exhibit 1 to the list of projects and associated projected costs provided with my
3 Direct Testimony. Ray Supplemental Exhibit 2 also indicates at column N the
4 reason for changes to these projects since the Company filed its Application.

5 **Q. WERE THESE EXHIBITS PREPARED OR PROVIDED BY YOU OR**
6 **UNDER YOUR DIRECTION AND SUPERVISION?**

7 A. Yes.

8 **I. MYRP PROJECT UPDATES – NUCLEAR**

9 **Q. IS DEP PROPOSING TO INCLUDE ANY NEW NUCLEAR PROJECTS**
10 **AS PART OF ITS MYRP THAT WERE NOT INCLUDED IN DEP’S PBR**
11 **APPLICATION?**

12 A. No.

13 **Q. HAS DEP IDENTIFIED NUCLEAR PROJECTS THAT WERE**
14 **INCLUDED IN ITS PBR APPLICATION THAT ARE NO LONGER**
15 **NECESSARY OR WERE MOVED OUT OF THE MYRP PERIOD?**

16 A. Yes. The Company identified two projects at Robinson Nuclear Plant, the main
17 control room annunciator project and the programmable logic controller
18 replacement, that are being moved out of the MYRP period.

19 **Q. WHY DID DEP REMOVE THESE PROJECTS?**

20 A. The Robinson annunciator project would have replaced the main control room
21 annunciator system. After a review of the project’s status, the Company
22 determined that it would not be able to complete the project within the MYRP
23 plan period ending in September 2026 due to site priorities and resource

1 availability. The Robinson programmable logic controller replacement is being
2 delayed due to engineering design challenges.

3 **II. MYRP PROJECT COST UPDATES - NUCLEAR**

4 **Q. IS DEP PROPOSING TO UPDATE COSTS ASSOCIATED WITH ANY**
5 **OF THE NUCLEAR MYRP PROJECTS INCLUDED IN DEP'S PBR**
6 **APPLICATION?**

7 A. Yes. As summarized in Witness Taylor's supplemental testimony, the Company
8 and Public Staff reached a consensus approach regarding the criteria pursuant
9 to which MYRP projects and their cost estimates would be updated in this
10 supplemental filing.

11 Pursuant to this consensus approach, my supplemental direct testimony
12 describes the cost updates to the nuclear MYRP projects.

13 **Q. PLEASE EXPLAIN WHICH PROJECTS' COSTS ESTIMATES YOU**
14 **ARE UPDATING AND THE BASIS FOR EACH OF THE UPDATES.**

15 A. First, based on the agreement with the Public Staff to update projects costs for
16 any projects that were originally projected to cost more than \$10 million, the
17 Company has updated the projected costs associated with twelve projects for
18 which the original projected costs met that threshold.

19 Also pursuant to the agreement with the Public Staff, the Company has
20 updated the projected costs for seven projects that were not initially projected
21 to cost more than \$10 million but have advanced through the stage gate process
22 to a point where revised cost estimates are available. These are indicated in

1 Column N of my Supplemental Ray Exhibit 2 by the designation “other
2 significant developments.”

3 Finally, pursuant to the agreement with the Public Staff, the Company
4 has updated projected costs for other projects not initially estimated to cost
5 more than \$10 million. This included updating and, where not originally
6 included, adding contingency costs for all of the nuclear projects. Two of the
7 projects’ originally estimated costs included contingency, but now all of the 24
8 projects include contingency. The Company also updated AFUDC costs for all
9 projects based on latest project cost estimates and projected in-service dates.

10 **Q. PLEASE EXPLAIN WHY THE COST ESTIMATES ASSOCIATED**
11 **WITH THE ABOVE-REFERENCED PROJECTS HAVE CHANGED**
12 **SINCE DEP FILED ITS PBR APPLICATION.**

13 A. The cost estimates for the projects changed based on, primarily and as noted
14 above, the addition of contingency costs and updates to AFUDC. In some cases
15 project costs have changed because the projects have additional refined cost and
16 other documentation since they have advanced further in the project
17 development and funding authorization process. Three projects have received
18 funding authorization since the PBR application was filed moving the projects
19 from the initiated stage to the committed stage. The projects that have advanced
20 are the Brunswick Containment Atmosphere Control Tank, Brunswick Unit 2
21 Feedwater Heater Replacement, and the Fleet Operational Data Process Book
22 Replacement.

1 **Q. HOW DID DEP DEVELOP THESE UPDATED PROJECT COSTS?**

2 A. As projects move through the development and funding authorization process

3 the cost estimates are refined as the project scope and schedule are determined.

4 The updated estimates are based on project funding authorization amounts, and

5 the cost estimates are generally updated as project assumptions are validated

6 and adjusted, vendor contracts are signed, and the design progresses.

7 **Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT**
8 **TESTIMONY?**

9 A. Yes.

DUKE ENERGY PROGRESS, LLC
MYRP PROJECTS - SUPPLEMENTAL
DOCKET NO. E-2 Sub 1300

Line No.	MYRP Project Name	FERC Function	Project Forecasted In-Service Date	MYRP Project Description & Scope	Reason for the MYRP Project	Total Project Amount (System)		
						Projected In-Service Costs	Projected Annual Net O&M	Projected Installation O&M
1	Brunswick Nuclear Plant Containment Atmosphere Control Tank	Nuclear Plant In Service	Jun-25	Replace components in the Brunswick Containment Atmosphere Control (CAC) tank area including the vaporizer, piping, and CAC tank.	The Brunswick station's CAC tank area contains equipment used to support each of the operating units during start-up after an outage. The equipment in this area is nearing the end of its service life and needs to be addressed to mitigate the risk of equipment failures due to age-related degradation. This project will address age-related degradation issues with the CAC area piping, vaporizer, and tank.	\$ 5,403,627	\$ -	\$ -
2	Brunswick Nuclear Plant Distributed Information Control Systems Platform Replacement	Nuclear Plant In Service	Jun-26	Replace the Brunswick Distributed Information Control Systems Platform (DICSP) hardware and software that has reached end-of-life.	The Brunswick DICSP hardware and software require upgrades to maintain manufacturer support and the ability to install the latest cyber security patches. Control systems for various pieces of station equipment including the turbine controls system, emergency response facility information system (ERFIS), and plant process computer (PPC) are housed on, or interface with, the DICSP. A failure of the DICSP could lead to unplanned generation losses for both Brunswick operating units.	\$ 22,911,709	\$ -	\$ -
3	Brunswick Nuclear Plant Lighting Transformers Replacement	Nuclear Plant In Service	Apr-26	Replace the 480V '1L' and '2L' lighting transformers at the Brunswick station	Brunswick has identified multiple 480V transformers requiring replacement due to age-related degradation. The '1L' and '2L' lighting transformers are the final two transformers that require replacement to ensure continued reliability of the lighting system at the station.	\$ 3,727,824	\$ -	\$ -
4	Brunswick Nuclear Plant Radio System & Console Replacement	Nuclear Plant In Service	Apr-29	Replace the Brunswick security radio system and console with a new system that is aligned with the nuclear fleet's standard radio system requirements.	Brunswick is replacing the security radio system and console with a system that has been adopted by the nuclear fleet as the standard security radio system. The current Brunswick system has reached end-of-life and a failure of the system could impact communications for multiple plant organizations including security, maintenance, operations, emergency planning, and the fire brigade.	\$ 14,949,814	\$ -	\$ -
5	Brunswick Nuclear Plant Security Door Controllers and Turnstiles Replacement	Nuclear Plant In Service	Jun-24	Replace the Brunswick station's obsolete vital area door controllers and turnstiles.	Brunswick will replace the obsolete vital area door controllers and turnstiles, which will mitigate the risk of the station needing to have an increased amount of security personnel present to monitor and control access to the plant if the controllers and turnstiles fail.	\$ 3,239,832	\$ -	\$ -
6	Brunswick Nuclear Plant Unit 1 Circulating Water Ocean Discharge Pump Replacement	Nuclear Plant In Service	Jun-24	Replace the Brunswick Unit 1 '1A' Circulating Water Ocean Discharge (CWOD) Pump	The Brunswick CWOD pumps operate in a harsh saltwater environment and are critical to maintaining water levels in the Brunswick station's discharge canal. This pump is being replaced with an upgraded material specifically designed for use in sea water environments that will allow the pump to operate with a lower risk of failure from material degradation.	\$ 5,427,646	\$ -	\$ -
7	Brunswick Nuclear Plant Unit 1 Emergency Response Facility Information System Replacement	Nuclear Plant In Service	Apr-24	Replace the Brunswick Unit 1 Emergency Response Facility Information System (ERFIS)	The BNP ERFIS system is in a degraded condition and the equipment is obsolete and needs to be replaced to ensure proper functionality. The system gathers, processes, stores, and displays data from plant parameters. During an emergency ERFIS displays plant data at various locations (e.g., Control Room, Technical Support Center, Operational Support Center, Emergency Operations Facility).	\$ 14,132,748	\$ -	\$ -
8	Brunswick Nuclear Plant Unit 1 Feedwater Heater Replacement	Nuclear Plant In Service	Apr-24	Replace the Brunswick Unit 1 '4B' Feedwater Heater (FWH)	All of the Brunswick Unit 1 high-pressure feedwater heaters have been replaced except the '4B' feedwater heater. This feedwater heater is operating beyond its original design life of 40 years and needs to be replaced in order to ensure continued reliability of Brunswick Unit 1.	\$ 19,147,666	\$ -	\$ -
9	Brunswick Nuclear Plant Unit 1 Main Generator Automatic Voltage Regulator Replacement	Nuclear Plant In Service	Mar-24	Replace the Brunswick Unit 1 main generator's automatic voltage regulator (AVR).	The Brunswick Unit 1 main generator automatic voltage regulator (AVR) has become obsolete, manufacturer support is unavailable, and spare parts cannot be readily obtained. Additionally, the existing AVR lacks redundancy and is considered by the station to be a single point vulnerability (SPV). The new AVR is designed to eliminate the SPV risk where a failure could result in an unplanned outage and potential damage to both the main generator and exciter.	\$ 7,350,645	\$ -	\$ 258,454
10	Brunswick Nuclear Plant Unit 1 Plant Process Computer	Nuclear Plant In Service	Apr-24	Replace the Brunswick Unit 1 Plant Process Computer (PPC)	The Brunswick Plant Process Computer (PPC) is obsolete and spare parts are increasingly difficult to obtain. The parts obsolescence places an additional burden on plant personnel and poses a risk of the PPC system not being available to provide accurate data in a timely manner. Additionally, a failure of this system has the potential to result in a unit derate or unplanned outage extension. The PPC needs to be replaced to ensure continued reliable operations of Brunswick Unit 1.	\$ 11,711,028	\$ -	\$ -
11	Brunswick Nuclear Plant Unit 2 Circulating Water Ocean Discharge Pump Replacement	Nuclear Plant In Service	Dec-23	Replace the Brunswick Unit 2 '2A' Circulating Water Ocean Discharge (CWOD) Pump	The Brunswick CWOD pumps operate in a harsh saltwater environment and are critical to maintaining water levels in the Brunswick station's discharge canal. This pump is being replaced with an upgraded material specifically designed for use in sea water environments that will allow the pump to operate with a lower risk of failure from material degradation.	\$ 4,219,777	\$ -	\$ -
12	Brunswick Nuclear Plant Unit 2 Emergency Response Facility Information System Replacement	Nuclear Plant In Service	Jan-24	Replace the Brunswick Unit 2 Emergency Response Facility Information System (ERFIS)	The BNP ERFIS system is in a degraded condition and the equipment is obsolete and needs to be replaced to ensure proper functionality. The system gathers, processes, stores, and displays data from plant parameters. During an emergency ERFIS displays plant data at various locations (e.g., Control Room, Technical Support Center, Operational Support Center, Emergency Operations Facility).	\$ 21,926,367	\$ -	\$ -
13	Brunswick Nuclear Plant Unit 2 Feedwater Heater Replacement	Nuclear Plant In Service	Apr-25	Replace the Brunswick Unit 2 '5A/5B' Feedwater Heater (FWH)	Several of the Brunswick Unit 2 high-pressure feedwater heaters have been replaced due to meeting the end of their design life. The Brunswick Unit 2 '5A' and '5B' feedwater heaters are operating beyond their original design life of 40 years and need to be replaced in order to ensure continued reliability of Brunswick Unit 2.	\$ 23,648,070	\$ -	\$ -
14	Fleet Firewall Replacement	Nuclear Plant In Service	Dec-25	Replace the Adaptive Security Appliance (ASA) 5555-X firewalls at each of the Duke Energy Progress (DEP) sites (Brunswick, Harris, and Robinson).	This project will upgrade the existing firewall used for all Duke Energy nuclear stations in both the DEP and DEC fleets with a new firewall meeting the latest cyber security requirements. The new firewall maintains cyber security of digital assets and allows for continued compliance with cyber security regulations.	\$ 10,358,874	\$ -	\$ -
15	Fleet Operational Data Process Book Replacement	Nuclear Plant In Service	Dec-25	Replace the Operational Data Process Book software at each of the Duke Energy Progress (DEP) nuclear sites (Brunswick, Harris, and Robinson).	The Process Book application is used by all nuclear departments (e.g., engineering, operations, maintenance, etc.) to track and analyze station system and equipment performance using real-time data. The existing software is obsolete, and the vendor no longer provides technical support. This upgrade will replace the software that is currently in use with a version that can receive vendor technical support and be updated with the latest cyber security patches. Note, this upgrade will also be applied to the Duke Energy Carolinas (DEC) nuclear stations (Catawba, McGuire, and Oconee).	\$ 6,225,539	\$ -	\$ -

16	Harris Nuclear Plant Circulating Water Pipe Liner Installation	Nuclear Plant In Service	May-24	Install a carbon fiber reinforced polymer (CFRP) lining inside the buried pre-stressed concrete cylinder pipe (PCCP) used in the Harris Circulating Water (CW) System during the H1R25 refueling outage in 2024.	In 2019 the Harris station identified and repaired sections of the circulating water system's buried PCCP with a CFRP wrap. Inspections of the pipe identified other areas of this pipe where degradation was present, and the Harris station developed a plan to address the degraded pipe over the course of several future refueling outages. This project will install a CFRP wrap along a portion of the PCCP during the 2024 Spring refueling outage (H1R25). Additional sections of the PCCP will have a CFRP wrap installed during each refueling outage until all of the degraded sections have been addressed. If the pipe degradation is not addressed and a portion of the PCCP becomes inoperable the station would have to go into an unplanned outage to repair the piping.	\$	8,977,366	\$	-	\$	-
17	Harris Nuclear Plant Circulating Water Pump Cable Replacement	Nuclear Plant In Service	May-24	Replace the Harris 'A' Circulating Water Pump (CWP) power cables.	The power cable insulation for the Harris station's 'A' CWP has degraded, indicating that the power cables have reached the end-of-life. These cables support the station's circulating water pumps by carrying power to the pump motors. The inability to operate the station's CWPs will not impact plant safety but will result in an unplanned power reduction. This project will replace the 'A' CWP power cables to ensure continued reliable operation of the circulating water system.	\$	1,946,252	\$	-	\$	-
18	Harris Nuclear Plant Distributed Information Control Systems Platform Upgrade	Nuclear Plant In Service	May-24	Replace the Harris Distributed Information Control Systems Platform (DICSP) hardware and software that has reached end-of-life.	The Harris DICSP hardware and software require upgrades to maintain manufacturer support and the ability to install the latest cyber security patches. Control systems for various pieces of station equipment including the turbine controls system, radiation monitoring system, reactor auxiliary building normal ventilation system controls application, containment pre-entry purge exhaust system, and flow rate monitor controls for the plant vent stack and the waste processing building stacks are housed on the DICSP. A failure of the DICSP could lead to unplanned generation losses for the Harris station.	\$	13,178,002	\$	-	\$	-
19	Harris Nuclear Plant Emergency Response Facility Information System and Plant Process Computer Replacement	Nuclear Plant In Service	Jun-24	Replace the Harris station's combined Emergency Response Facility Information System (ERFIS)/Plant Process Computer (PPC)	The Harris station's combined emergency response facility information system (ERFIS) and plant process computer (PPC) gathers, processes, stores, and displays operational data. Both the ERFIS and PPC equipment are in a degraded condition and require replacement to ensure continued reliable operations. The ERFIS equipment is obsolete and replacement parts availability is severely limited, which will not allow Harris to execute long-term maintenance of the system. Replacing ERFIS will allow the station to continue to display station operational data in a clear and concise manner during emergencies to the following locations 1) control room, 2) technical support center, 3) operational support center, and 4) emergency operations facility. The PPC equipment is also facing obsolescence and difficulty obtaining spare parts. Replacing the PPC allows the station to reliably support plant operations, perform station performance analysis, and better monitor station performance.	\$	26,072,162	\$	-	\$	-
20	Harris Nuclear Plant Transformers Replacement	Nuclear Plant In Service	May-24	Replace the two Harris station Unit Auxiliary Transformers (UATs) and the two Start Up Transformers (SUTs) with new transformers utilizing a load-tap changing design.	The Harris UATs and SUTs have reached the end of their service life and need to be replaced to support continued safe and reliable operations of the Harris station. Additionally, the new UAT and SUT design will align the Harris transformers with the design of the UATs and SUTs across the other Duke Energy Progress stations (Brunswick and Robinson). Additionally, the Roxboro and Mayo coal-fired stations support the Harris station's switchyard voltage requirements during an emergency loss of coolant accident. Replacement of the existing Harris station UATs and SUTs with a new load-tap changing design will allow the Roxboro and Mayo stations to be retired in support of Duke Energy's carbon reduction goals without negatively impacting the switchyard voltage during a potential emergency situation for the Harris station.	\$	42,386,210	\$	-	\$	-
21	Robinson Nuclear Plant - Lake Robinson Dam Spillway Electrical Upgrade	Nuclear Plant In Service	Feb-24	Replace the Robinson site's buried power cable and power panel supporting equipment at the Lake Robinson Dam spillway.	The Lake Robinson Dam spillway must remain operable as long as Lake Robinson is maintained. Additionally, the spillway must remain available to ensure proper lake levels for operation of the Robinson Nuclear Plant and to prevent plant flooding during a design basis rain event. The buried power feed cable and power panels supporting the Lake Robinson Dam Spillway are originally installed equipment that have been supporting the station since the 1950s and are experiencing age-related degradation. This project will replace buried power cables and power panel components to ensure continued operability of the spillway electrical components. Additionally, this project will install a backup power generator based on the upgrades made to other spillways at Duke Energy hydroelectric stations.	\$	4,053,999	\$	-	\$	-
22	Robinson Nuclear Plant Emergency Response Facility Information System and Plant Process Computer Replacement	Nuclear Plant In Service	Dec-24	Replace the Robinson station's combined Emergency Response Facility Information System (ERFIS)/Plant Process Computer (PPC)	The Robinson station's combined emergency response facility information system (ERFIS) and plant process computer (PPC) gathers, processes, stores, and displays operational data. Both the ERFIS and PPC equipment are in a degraded condition and require replacement to ensure continued reliable operations. The ERFIS equipment is obsolete and replacement parts availability is severely limited, which will not allow Robinson to execute long-term maintenance of the system. Replacing ERFIS will allow the station to continue to display station operational data in a clear and concise manner during emergencies to the following locations 1) control room, 2) technical support center, 3) operational support center, and 4) emergency operations facility. The PPC equipment is also facing obsolescence and difficulty obtaining spare parts. Replacing the PPC allows the station to reliably support plant operations, perform station performance analysis, and better monitor station performance.	\$	22,259,814	\$	-	\$	-
23	Robinson Nuclear Plant Intrusion Detection System	Nuclear Plant In Service	Dec-25	Replace the Robinson site's Intrusion Detection System (IDS) equipment.	Robinson is executing a project to replace the physical security equipment used to detect unauthorized intrusion into the plant area. Many of these components are obsolete and have become unreliable, which has led to the Robinson security organization having to place more security personnel on duty while the equipment is repaired. Replacement of the equipment will increase the intrusion detection system's reliability and effectively maintain compliance with federal regulatory requirements related to plant security in accordance with 10 CFR Part 73, "Physical Protection of Plants and Materials."	\$	18,959,182	\$	-	\$	-
24	Robinson Nuclear Plant Main Generator Automatic Voltage Regulator Replacement	Nuclear Plant In Service	Dec-24	Replace the Robinson main generator's automatic voltage regulator (AVR).	The Robinson main generator AVR has become obsolete, manufacturer support is unavailable, and spare parts cannot be readily obtained. Additionally, the existing AVR lacks redundancy and is considered by the station to be a single point vulnerability (SPV). The new AVR is designed to eliminate the SPV risk where a failure could result in an unplanned outage and potential damage to both the main generator and exciter.	\$	11,202,229	\$	-	\$	-
TOTALS						\$	323,396,382	\$	-	\$	258,454

DUKE ENERGY PROGRESS, LLC
MYRP PROJECTS - ORIGINAL FILING VS SUPPLEMENTAL FILING COMPARISON
DOCKET NO. E-2 Sub 1300

		Filed Oct 2022 - Total Project Amount (System)						Filed Feb 2023 - Total Project Amount (System)						
Line No.	MYRP Project Name	FERC Function	Project Forecasted In-Service Date	Projected In-Service Costs	O&M	Projected Annual Net	Projected Installation O&M	Project Forecasted In-Service Date	Projected In-Service Costs	O&M	Projected Annual Net	Projected Installation O&M	Supplemental Update Criteria	
1	Brunswick Nuclear Plant Containment Atmosphere Control Tank	Nuclear Plant In Service	Dec-23	\$ 2,059,973	\$ -	\$ -	\$ -	Jun-25	\$ 5,403,627	\$ -	\$ -	\$ -	Other Significant Developments	
2	Brunswick Nuclear Plant Distributed Information Control Systems Platform Replacement	Nuclear Plant In Service	Dec-25	\$ 9,890,241	\$ -	\$ -	\$ -	Jun-26	\$ 22,911,709	\$ -	\$ -	\$ -	Overall Cost Estimate Change	
3	Brunswick Nuclear Plant Lighting Transformers Replacement	Nuclear Plant In Service	Dec-25	\$ 2,319,623	\$ -	\$ -	\$ -	Apr-26	\$ 3,727,824	\$ -	\$ -	\$ -	Other Significant Developments	
4	Brunswick Nuclear Plant Radio System & Console Replacement	Nuclear Plant In Service	Dec-23	\$ 9,455,767	\$ -	\$ -	\$ -	Apr-25	\$ 14,949,814	\$ -	\$ -	\$ -	Overall Cost Estimate Change	
5	Brunswick Nuclear Plant Security Door Controllers and Turnstiles Replacement	Nuclear Plant In Service	Nov-23	\$ 1,173,537	\$ -	\$ -	\$ -	Jun-24	\$ 3,239,832	\$ -	\$ -	\$ -	Other Significant Developments	
6	Brunswick Nuclear Plant Unit 1 Circulating Water Ocean Discharge Pump Replacement	Nuclear Plant In Service	May-25	\$ 3,692,992	\$ -	\$ -	\$ -	Jun-24	\$ 5,427,646	\$ -	\$ -	\$ -	Other Significant Developments	
7	Brunswick Nuclear Plant Unit 1 Emergency Response Facility Information System Replacement	Nuclear Plant In Service	Jun-24	\$ 13,354,778	\$ -	\$ -	\$ -	Apr-24	\$ 14,112,748	\$ -	\$ -	\$ -	Project > \$10M	
8	Brunswick Nuclear Plant Unit 1 Feedwater Heater Replacement	Nuclear Plant In Service	Mar-24	\$ 12,981,212	\$ -	\$ -	\$ -	Apr-24	\$ 19,147,666	\$ -	\$ -	\$ -	Project > \$10M	
9	Brunswick Nuclear Plant Unit 1 Main Generator Automatic Voltage Regulator Replacement	Nuclear Plant In Service	Apr-24	\$ 7,654,615	\$ -	\$ -	258,454	Mar-24	\$ 7,350,645	\$ -	\$ -	258,454	Other Significant Developments	
10	Brunswick Nuclear Plant Unit 1 Plant Process Computer	Nuclear Plant In Service	Apr-24	\$ 11,626,916	\$ -	\$ -	\$ -	Apr-24	\$ 11,711,028	\$ -	\$ -	\$ -	Project > \$10M	
11	Brunswick Nuclear Plant Unit 2 Circulating Water Ocean Discharge Pump Replacement	Nuclear Plant In Service	Dec-23	\$ 4,098,022	\$ -	\$ -	\$ -	Dec-23	\$ 4,219,777	\$ -	\$ -	\$ -	Overall Cost Estimate Change	
12	Brunswick Nuclear Plant Unit 2 Emergency Response Facility Information System Replacement	Nuclear Plant In Service	Dec-23	\$ 23,230,324	\$ -	\$ -	\$ -	Jan-24	\$ 21,926,367	\$ -	\$ -	\$ -	Project > \$10M	
13	Brunswick Nuclear Plant Unit 2 Feedwater Heater Replacement	Nuclear Plant In Service	Apr-25	\$ 17,703,289	\$ -	\$ -	\$ -	Apr-25	\$ 23,648,070	\$ -	\$ -	\$ -	Project > \$10M	
14	Fleet Firewall Replacement	Nuclear Plant In Service	Dec-25	\$ 12,846,954	\$ -	\$ -	\$ -	Dec-25	\$ 10,358,874	\$ -	\$ -	\$ -	Project > \$10M	
15	Fleet Operational Data Process Book Replacement	Nuclear Plant In Service	Dec-24	\$ 11,601,385	\$ -	\$ -	\$ -	Dec-25	\$ 6,225,539	\$ -	\$ -	\$ -	Project > \$10M	
16	Harris Nuclear Plant Circulating Water Pipe Liner Installation	Nuclear Plant In Service	May-24	\$ 8,163,182	\$ -	\$ -	\$ -	May-24	\$ 8,977,366	\$ -	\$ -	\$ -	Overall Cost Estimate Change	
17	Harris Nuclear Plant Circulating Water Pump Cable Replacement	Nuclear Plant In Service	Dec-23	\$ 1,747,847	\$ -	\$ -	\$ -	May-24	\$ 1,946,252	\$ -	\$ -	\$ -	Other Significant Developments	
18	Harris Nuclear Plant Distributed Information Control Systems Platform Upgrade	Nuclear Plant In Service	Nov-24	\$ 13,428,612	\$ -	\$ -	\$ -	May-24	\$ 13,178,002	\$ -	\$ -	\$ -	Project > \$10M	
19	Harris Nuclear Plant Emergency Response Facility Information System and Plant Process Computer Replacement	Nuclear Plant In Service	Jun-24	\$ 22,859,911	\$ -	\$ -	\$ -	Jun-24	\$ 26,072,162	\$ -	\$ -	\$ -	Project > \$10M	
20	Harris Nuclear Plant Transformers Replacement	Nuclear Plant In Service	May-24	\$ 30,915,144	\$ -	\$ -	\$ -	May-24	\$ 42,386,210	\$ -	\$ -	\$ -	Project > \$10M	
21	Robinson Nuclear Plant - Lake Robinson Dam Spillway Electrical Upgrade	Nuclear Plant In Service	Oct-23	\$ 9,373,010	\$ -	\$ -	\$ -	Feb-24	\$ 4,053,999	\$ -	\$ -	\$ -	Other Significant Developments	
22	Robinson Nuclear Plant Emergency Response Facility Information System and Plant Process Computer Replacement	Nuclear Plant In Service	Nov-24	\$ 22,782,194	\$ -	\$ -	\$ -	Dec-24	\$ 22,259,814	\$ -	\$ -	\$ -	Project > \$10M	
23	Robinson Nuclear Plant intrusion Detection System	Nuclear Plant In Service	Dec-25	\$ 18,323,529	\$ -	\$ -	\$ -	Dec-25	\$ 18,959,182	\$ -	\$ -	\$ -	Project > \$10M	
24	Robinson Nuclear Plant Main Control Room Annunciator Replacement	Nuclear Plant In Service	Dec-25	\$ 8,568,423	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Project Canceled/Removed	
25	Robinson Nuclear Plant Main Generator Automatic Voltage Regulator Replacement	Nuclear Plant In Service	Dec-24	\$ 11,569,440	\$ -	\$ -	\$ -	Dec-24	\$ 11,202,229	\$ -	\$ -	\$ -	Project > \$10M	
26	Robinson Nuclear Plant Programmable Logic Controllers Replacement	Nuclear Plant In Service	Dec-24	\$ 20,208,367	\$ -	\$ -	\$ -		\$ -	\$ -	\$ -	\$ -	Project Canceled/Removed	
TOTALS				\$ 311,629,286	\$ -	\$ -	258,454		\$ 323,396,382	\$ -	\$ -	258,454		

OFFICIAL COPY
Feb 13 2023