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10 CFR 50.80
10 CFR 72.50
10 CFR 50.90

March 20, 2026
Serial: RA-25-0244

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Brunswick Steam Electric Plant, Units 1 and 2
Docket Nos. 50-325 and 50-324 / Renewed License Nos. DPR-71 and DPR-62

Shearon Harris Nuclear Power Plant, Unit 1
Docket No. 50-400 / Renewed License No. NPF-63

H.B. Robinson Steam Electric Plant, Unit 2
Docket No. 50-261 / Renewed License No. DPR-23

H.B. Robinson Steam Electric Plant, Unit 2
Independent Spent Fuel Storage Installation
Docket No. 72-3 / Renewed License No. SNM-2502

**Subject**: Application For Order Approving Transfer of Control of Licenses and for Conforming License Amendments Pursuant to 10 CFR 50.80 and 10 CFR 72.50

Pursuant to 10 CFR 50.80, 10 CFR 72.50, and 10 CFR 50.90, Duke Energy Progress, LLC (DEP) and Duke Energy Carolinas, LLC (DEC), collectively referred to as Applicants, hereby submit an application included in the Enclosure, seeking U.S. Nuclear Regulatory Commission (NRC) consent to the transfer of control of the following NRC licenses: Brunswick Steam Electric Plant, Units 1 and 2, Renewed Operating Licenses DPR-71 and DPR-62; Shearon Harris Nuclear Power Plant, Unit 1, Renewed Operating License NPF-63; H.B. Robinson Steam Electric Plant, Unit 2, Renewed Operating License DPR-23; and H.B. Robinson Steam Electric Plant Independent Spent Fuel Storage Installation Facility, Renewed Materials License No. SNM-2502 (collectively, the Licenses). The transfer of control will result from the planned merger of DEP into DEC.

This corporate transaction is an internal legal reorganization within the Duke Energy Corporation holding company. Upon completion of the merger, all assets, rights, and obligations of DEP, including its ownership and operating authority for the listed nuclear facilities, will be transferred by operation of law to DEC. DEC will remain a wholly owned subsidiary of Duke Energy Corporation, and no external ownership or control changes will occur.

The proposed transfer is administrative in nature and will not result in any physical or operational changes to the facilities, nor affect technical or financial qualifications, management, or decommissioning funding assurance. DEC will continue to operate the facilities under the same management structure and fleet governance model presently in place for the Duke Energy nuclear fleet.

Accordingly, Duke Energy requests NRC issuance of:

1. An Order approving the transfer of control of the above licenses to DEC, effective upon completion of the merger; and

2. Conforming license amendments under 10 CFR 50.90 to reflect the change in license name and corporate structure.

The Enclosure provides the application including the proposed changes. Marked up facility operating license pages for the administrative changes proposed in this submittal are included in Attachments 1 – 4.

Duke Energy requests NRC approval by December 1, 2026, to support a merger closing date of January 1, 2027. Once approved, the amendment shall be implemented within 120 days.

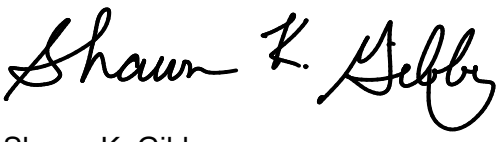
This submittal contains no new regulatory commitments.

Please refer any questions regarding this submittal to Ryan Treadway, Director – Nuclear Fleet Licensing, at (980) 373-5873.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on March 20, 2026.

Sincerely,



Shawn K. Gibby
Vice President – Nuclear Engineering

Enclosure: Application for Order Approving Transfer of Control of Licenses and for Conforming License Amendments Pursuant to 10 CFR 50.80 and 10 CFR 50.90

Attachments to Enclosure:

1. Brunswick Steam Electric Plant, Marked Changes to Current Renewed Facility Operating Licenses DPR-71 and DPR-62
2. Shearon Harris Nuclear Power Plant, Marked Changes to Current Renewed Facility Operating License NPF-63
3. H.B. Robinson Steam Electric Plant, Marked Changes to Current Renewed Facility Operating License DPR-23
4. H.B. Robinson Steam Electric Plant, Marked Changes to Current Independent Spent Fuel Storage Installation Materials License SNM-2502

cc: USNRC Region II – Regional Administrator
USNRC Senior Resident Inspector – BNP
USNRC Senior Resident Inspector – HNP
USNRC Senior Resident Inspector – RNP
USNRC NRR Project Manager – Fleet
USNRC NRR Project Manager – BNP
USNRC NRR Project Manager – HNP
USNRC NRR Project Manager – RNP
L. Brayboy, Radioactive Materials Branch Manager – NC DHHS
S. Jenkins, Director – Radiological Health Program – SC DES
N. Gauthier, Manager – Nuclear Response Section – SC DES
L. Garner, Manager – Radioactive & Infectious Waste Section – SC DES
A. Wilson, Attorney General – Attorney General (SC)
Chair – North Carolina Utilities Commission

# Enclosure

## Evaluation of the Proposed Change

Subject: Application for Order Approving Transfer of Control of Licenses and for Conforming License Amendments Pursuant to 10 CFR 50.80 and 10 CFR 72.50

1. BACKGROUND AND REQUEST
2. PURPOSE
3. TECHNICAL QUALIFICATIONS
4. FINANCIAL QUALIFICATIONS OF DUKE ENERGY
5. REGULATORY EVALUATION
    5.1 Applicable Regulatory Requirements/Criteria
    5.2 No Significant Hazards Consideration Determination
    5.3 Conclusions
6. ENVIRONMENTAL CONSIDERATIONS
7. PRICE ANDERSON INDEMNITY AND NUCLEAR INSURANCE
8. RESTRICTED DATA
9. OTHER REGULATORY APPROVALS
10. SCHEDULE AND EFFECTIVE DATES
11. REFERENCES

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Attachments:

1. Brunswick Steam Electric Plant, Marked Changes to Current Renewed Facility Operating Licenses DPR-71 and DPR-62
2. Shearon Harris Nuclear Power Plant, Marked Changes to Current Renewed Facility Operating License NPF-63
3. H.B. Robinson Steam Electric Plant, Marked Changes to Current Renewed Facility Operating License DPR-23
4. H.B. Robinson Steam Electric Plant, Marked Changes to Current Independent Spent Fuel Storage Installation Materials License SNM-2502

**Application for Order Approving Transfer of Control of Licenses and for Conforming License Amendments Pursuant to 10 CFR 50.80 and 72.50**

## 1. BACKGROUND AND REQUEST

Duke Energy Progress, LLC (DEP) and Duke Energy Carolinas, LLC (DEC), collectively referred to as Applicants, hereby submit an application seeking U.S. Nuclear Regulatory Commission (NRC) consent to the transfer of control of the following NRC licenses: Brunswick Steam Electric Plant, Units 1 and 2, Renewed Operating Licenses DPR-71 and DPR-62 (BNP); Shearon Harris Nuclear Power Plant, Unit 1, Renewed Operating License NPF-63 (HNP); H.B. Robinson Steam Electric Plant, Unit 2, Renewed Operating License DPR-23 (RNP); and H.B. Robinson Steam Electric Plant Independent Spent Fuel Storage Installation Facility, Renewed Materials License No. SNM-2502 (RNP ISFSI) (collectively, the Licenses). The direct transfer of control will result from the planned internal corporate reorganization in which DEP will merge with and into DEC, with DEC as the surviving entity. Following the merger, DEC will hold all assets and responsibilities of DEP, including ownership and operation of its nuclear facilities. The Applicants hereby request the NRC's consent, under 10 CFR 50.80 and 72.50, to transfer control of the NRC licenses currently held by DEP to DEC, and approval of conforming license amendments under 10 CFR 50.90.

## 2. PURPOSE

The purpose of the internal reorganization is to consolidate DEC and DEP into a single electric utility. That single utility will be DEC, serving existing wholesale and retail customers in the legacy DEC and DEP service territories in North Carolina and South Carolina. The Internal Reorganization will allow Duke Energy to unlock substantial savings to customers on a system basis through planning, execution, and operational efficiencies. Specifically, the Internal Reorganization will allow Duke Energy to: plan investments in necessary generation and transmission resources more efficiently; execute those plans more efficiently by siting and building those resources more cost-effectively; and operate those resources more efficiently as a fully integrated system. The merger is subject to approval by the North Carolina Utilities Commission, the Public Service Commission of South Carolina, and the Federal Energy Regulatory Commission. No nuclear operations, plant staffing, or technical or financial qualifications are associated with this transaction.

Upon completion:

- DEC will be the sole NRC licensee for the affected facilities,
- Existing operating authority and technical staff will remain unchanged; and
- All nuclear operating procedures, commitments, and licensing bases will remain in effect.

## 3. TECHNICAL QUALIFICATIONS

The technical qualifications of the licensees are not affected by the proposed direct transfers of control of BNP, HNP, RNP, and RNP ISFSI licenses. There will be no physical changes to BNP, HNP, RNP, or RNP ISFSI and no changes in their day-to-day operations in connection with the

direct transfers of control. The nuclear operating organizations for the licensed facilities are expected to remain essentially unchanged as a result of the merger. Therefore, the technical qualifications of the organization will remain intact.

## 4. FINANCIAL QUALIFICATIONS OF DUKE ENERGY

After the proposed merger, DEC will continue to generate and distribute electricity and recover the cost of this electricity through rates authorized by the North Carolina Utilities Commission, the Public Service Commission of South Carolina, and the Federal Energy Regulatory Commission. Therefore, DEC will continue to meet the definition of "electric utility" set forth in 10 CFR 50.2. Accordingly, the financial qualifications are presumed by 10 CFR 50.33(f) and no specific demonstration of financial qualifications is required.

Information regarding the status of decommissioning funding for BNP, HNP, and RNP was reported to the NRC in accordance with 10 CFR 50.75(f)(1) on March 31, 2025. BNP, HNP, and RNP will submit Future Biennial Decommissioning Funding Status Reports as required by 10 CFR 50.75(f)(1). The proposed merger will not affect the decommissioning funding arrangements previously reported. The licensees will continue to maintain their existing decommissioning trust funds segregated from their assets and outside their administrative control in accordance with the requirements of 10 CFR 50.75(e)(1). As required by 10 CFR 50.75(f)(1), Applicants will provide any updated Biennial Decommissioning Funding Status Report by March 31, 2026. After the merger, DEC will be responsible for the decommissioning liabilities associated with BNP, HNP, and RNP, and will fund the decommissioning trusts for the licensed facilities in accordance with 10 CFR 50.75. Similarly, DEC will be responsible for the submittal of, and liabilities associated with BNP and RNP Decommissioning Funding Plans for Independent Spent Fuel Storage Installations (ISFSIs) in accordance with 10 CFR 72.30(b) and 72.4.

## 5. REGULATORY EVALUATION

### 5.1 Applicable Regulatory Requirements/Criteria

On August 14, 2025, Duke Energy Progress, LLC (DEP) and Duke Energy Carolinas, LLC (DEC) filed with the North Carolina Utilities Commission and the Public Utilities Commission of South Carolina for the *Joint Application for Business Combination* pursuant to North Carolina Gen. Stat. § 62-111(a) and Commission Rule R1-5 and to South Carolina Code Ann. § 58-27-1300 and South Carolina Code Ann. Regs. § 103-823 (References 1 and 2). In addition, DEP and DEC filed with the Federal Energy Regulatory Commission (FERC) pursuant to sections 203(a)(1) and 203(a)(2) of the Federal Power Act (FPA) and Part 33 of the regulations of the FERC (Reference 3).

### 5.2 No Significant Hazards Consideration Determination

Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, collectively referred to henceforth as "Duke Energy," is requesting consent to the transfer of control and conforming administrative amendments to the Renewed Facility Operating Licenses Nos. DPR-71 and DPR-62 for the Brunswick Steam Electric Plant, Unit Nos. 1 and 2 (BNP), Renewed Facility

Operating License No. NPF-63 for the Shearon Harris Nuclear Power Plant, Unit No. 1 (HNP), Renewed Facility Operating License No. DPR-23 for the H.B. Robinson Steam Electric Plant, Unit No. 2 (RNP), and Renewed Materials License No. SNM-2502 for the H.B. Robinson Steam Electric Plant Independent Spent Fuel Storage Installation Facility. The direct transfer of control will result from the planned intra-company merger of DEP into DEC, with DEC as the surviving entity.

Duke Energy has evaluated if a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, “Issuance of amendment,” as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

   Response: No

   The proposed changes do not involve a significant increase in the probability of any accident previously evaluated because no accident initiators or assumptions are affected.
   The proposed transfer of control is administrative in nature and has no direct effect on any plant system, plant personnel qualifications, or the operation and maintenance of BNP, HNP, and RNP.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

   Response: No

   The proposed changes do not create the possibility of a new or different kind of accident from any previously evaluated because the proposed transfer of control and conforming amendments are administrative in nature and do not involve new failure mechanisms, malfunctions, or accident initiators. The proposed changes have no direct effect on any plant system, plant personnel qualifications, or operation and maintenance of BNP, HNP, and RNP.

3. Does the proposed change involve a significant reduction in a margin of safety?

   Response: No

   The proposed change will not involve a significant reduction in the margin of safety because the proposed changes do not involve changes to the initial conditions contributing to accident severity or consequences or reduce response or mitigation capabilities. The proposed transfer of control and conforming amendments are administrative in nature and has no direct effect on any plant system, plant personnel qualifications, or operation and maintenance of BNP, HNP, and RNP.

Based on the above, Duke Energy concludes that the proposed change presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of “no significant hazards consideration” is justified.

5.3 Conclusions

In conclusion, based on the considerations discussed above, (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

## 6. ENVIRONMENTAL CONSIDERATIONS

DEC has reviewed the proposed license amendment for environmental considerations. The proposed license amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion from an environmental assessment as set forth in 10 CFR 51.22(c)10), "Criterion for categorical exclusion; identification of licensing and regulatory actions eligible for categorical exclusion or otherwise not requiring environmental review." Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

## 7. PRICE ANDERSON INDEMNITY AND NUCLEAR INSURANCE

Duke Energy, as the operating licensee for BNP, HNP, and RNP, will continue to maintain the financial protection required by 10 CFR Part 140 and the property insurance required by 10 CFR 50.54(w). In accordance with Article IV of the NRC Indemnity Agreements for BNP, HNP, and RNP, the applicants together request NRC approval of the assignment and transfer of the Price Anderson Indemnity Agreements for BNP, HNP, and RNP to DEC upon consent to the proposed license transfer. DEC will make the necessary changes to nuclear liability and property coverage to reflect that DEP will no longer be an owner or licensee effective the date of the license transfer.

Duke Energy will also continue to have responsibility with respect to retrospective liability in accordance with 10 CFR 140.21. The annual report and SEC filing financial information provide adequate assurance that Duke Energy will be able to pay the maximum annual retrospective premium of $25 million per reactor, pursuant to 10 CFR 140.21.

## 8. RESTRICTED DATA

This application does not contain any Restricted Data or classified National Security Information. However, consistent with 10 CFR 50.80(b) and 50.37, Duke Energy will appropriately safeguard such information if any such information does become involved in connection with the operation of BNP, HNP and RNP and will not permit any individual to have access to any such information until the individual has been approved for such access under the provisions of 10 CFR Parts 25 and/or 95.

## 9. OTHER REGULATORY APPROVALS

In addition to NRC approval, the proposed transaction is contingent upon the approvals or concurrence of the North Carolina Utilities Commission and the Public Service Commission of South Carolina, as well as the Federal Energy Regulatory Commission (FERC).

## 10. SCHEDULE AND EFFECTIVE DATES

The proposed merger requires the customary regulatory approvals of federal and state regulatory authorities, in addition to the NRC. The parties to the proposed merger anticipate closing on January 1, 2027. The Applicants respectfully request that the NRC review this Application on a schedule that will permit NRC to issue its consent to the direct license transfers as promptly as possible. The Applicants are prepared to work closely with the NRC staff to help expedite the Application's review, but request approval in any event no later than December 1, 2026. The Applicants further request that the consent be immediately effective upon issuance and that it permits the direct transfers of control to be implemented at any time within the customary one year of the date of approval of this Application.

## 11. REFERENCES

1. Duke Energy letter to North Carolina Utilities Commission, *Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Joint Application for Business Combination, Docket No. E-7, Sub 1332 and Docket No. E-2, Sub 1383,* dated August 14, 2025.

2. Duke Energy letter to the Public Service Commission of South Carolina, *Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's Joint Application for Business Combination, Docket No. 2025-230-E*, dated August 14, 2025.

3. Duke Energy letter to Federal Energy Regulatory Commission, *Application Under Section 203 of the Federal Power Act for Approval of Internal Corporate Reorganization*, Docket No. EC25-128-000, dated August 14, 2025.

# ATTACHMENT 1

## BRUNSWICK STEAM ELECTRIC PLANT

## MARKED CHANGES TO CURRENT RENEWED FACILITY OPERATING LICENSES

## DPR-71 AND DPR-62

## 23 PAGES PLUS THE COVER

DUKE ENERGY CAROLINAS, LLC

~~DUKE ENERGY PROGRESS, LLC~~

DOCKET NO. 50-325

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE

Renewed License No. DPR-71

1. The Nuclear Regulatory Commission (NRC or the Commission) having previously made the findings set forth in License No. DPR-71 issued on September 8, 1976, has now found that:

   A. The application for license filed by Carolina Power & Light Company* (CP&L or the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Brunswick Steam Electric Plant, Unit 1 (the facility), has been substantially completed in conformity with Construction Permit No. CPPR-68 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;

   C. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations;

   D. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   E. There is reasonable assurance: (i) that the activities authorized by this renewed operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

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* On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

F. The licensee is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;

G. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

H. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public;

I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs, and considering available alternatives, the adverse environmental impacts of license renewal are not so great that preserving the option of license renewal would be unreasonable and the issuance of Renewed Facility Operating License No. DPR-71, subject to the conditions for protection of the environment set forth herein, is in accordance with 10 CFR Part 51 (formerly Appendix D to Part 50), of the Commission's regulations and all applicable requirements have been satisfied; and

J. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this renewed license will be in accordance with the Commission's regulations in 10 CFR Part 30, 40, and 70, including 10 CFR Section 30.33, 40.32, 70.23 and 70.31.

2. Renewed Facility Operating License No. DPR-71 is hereby issued to Duke Energy ~~Progress~~, LLC to read as follows:

Carolinas

A. This license applies to the Brunswick Steam Electric Plant, Unit 1, a boiling water reactor and associated equipment (the facility), owned and operated by Duke Energy ~~Progress~~, LLC. The facility is located on the Cape Fear River, near Southport in Brunswick County, North Carolina, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 1 through 31) and the "Environmental Report" as supplemented and amended.

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Duke Energy ~~Progress~~, LLC:

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Brunswick County, North Carolina, in accordance with the procedures and limitations set forth in this renewed license;

(2) Pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use in amounts as required any byproduct, source and special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;

(5) Pursuant to the Act and 10 CFR Parts 30 and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Brunswick Steam Electric Plant, Unit Nos. 1 and 2, and H. B. Robinson Steam Electric Plant, Unit No. 2.

(6) Fire Protection

Carolinas

Duke Energy ~~Progress~~, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated September 25, 2012, and November 15, 2017 as supplemented by letters dated December 17, 2012; June 28, 2013; July 15, 2013; July 31, 2013; August 29, 2013; September 30, 2013; February 28, 2014; March 14, 2014; April 10, 2014; June 26, 2014; August 15, 2014; August 29, 2014; November 20, 2014; December 18, 2014; and May 23, 2018; and as approved in the safety evaluations dated January 28, 2015, and July 6, 2018. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(a) Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk

No changes to this page

assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as built, as operated, and maintained plant; and reflect the operating experience at Brunswick. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

1. Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

2. Prior NRC review and approval is not required for individual changes that result in a risk increase less than $1x10^{-7}$/year (yr) for CDF and less than $1x10^{-8}$/yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

(b) Other Changes that May Be Made Without Prior NRC Approval

1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

   Prior NRC review and approval is not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the

No changes to this page

component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval is not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation dated January 28, 2015, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by 2. below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2. above.

2. The licensee shall implement the modifications to its facility, as described in Table S-1, "Plant Modifications Committed," of Duke letter BSEP 14-0122, dated November 20, 2014, to complete the transition to full compliance with 10 CFR 50.48(c) by the startup of the second refueling outage for each unit after issuance of the safety evaluation. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

3. The licensee shall complete all implementation items, except item 9, listed in LAR Attachment S, Table S-2, "Implementation Items," of Duke letter BSEP 14-0122, dated November 20, 2014, within 180 days after NRC approval unless the 180$^{th}$ day falls within an outage window; then, in that case, completion of the implementation items, except item 9, shall occur no later than 60 days after startup from that particular outage. The licensee shall complete implementation of LAR Attachment S, Table S-2, Item 9, within 180 days after the startup of the second refueling outage for each unit after issuance of the safety evaluation.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2923 megawatts thermal.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 312, are hereby incorporated in the license. Duke Energy Carolinas ~~Progress~~, LLC shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 203 to Renewed Facility Operating License DPR-71, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 203. For SRs that existed prior to Amendment 203, including SRs with modified acceptance criteria and SRs whose frequency of

No changes to this page

performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 203.

(a) Effective June 30, 1982, the surveillance requirements listed below need not be completed until July 15, 1982. Upon accomplishment of the surveillances, the provisions of Technical Specification 4.0.2 shall apply.

Specification 4.3.3.1, Table 4.3.3-1, Items 5.a and 5.b

(b) Effective July 1, 1982, through July 8, 1982, Action statement "a" of Technical Specification 3.8.1.1 shall read as follows:

ACTION:

a. With either one offsite circuit or one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within two hours and at least once per 12 hours thereafter; restore at least two offsite circuits and four diesel generators to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

(3) Deleted by Amendment No. 206.

D. The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21 are entitled: "Physical Security Plan, Revision 2," and "Safeguards Contingency Plan, Revision 2," submitted by letter dated May 17, 2006, and "Guard Training and Qualification Plan, Revision 0," submitted by letter dated September 30, 2004.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 258, as supplemented by changes approved by License Amendment Nos. 261 and 265.

E. This license is subject to the following additional conditions for the protection of the environment:

a. Deleted per Amendment 54, 3-11-83

b. Deleted per Amendment 54, 3-11-83

c. The licensee shall comply with the effluent limitations contained in National Pollutant Discharge Elimination System Permit No. NC0007064

issued pursuant to Section 402 of the Federal Water Pollution Control Act, as amended.

F. In accordance with the requirement imposed by the October 8, 1976, order of the United States Court of Appeals for the District of Columbia Circuit in Natural Resources Defense Council v. Nuclear Regulatory Commission, No. 74-1385 and 74-1586, that the Nuclear Regulatory Commission "shall make any licenses granted between July 21, 1976 and such time when the mandate is issued subject to the outcome of the proceedings herein," the license issued herein shall be subject to the outcome of such proceedings.

G. Deleted by Amendment No. 206.

H. This license is effective as of the date of issuance and shall expire at midnight on September 8, 2036.

I. Deleted per Amendment No. 70 dated 5-25-84.

J. Deleted per Amendment No. 70 dated 5-25-84.

K. Deleted by Amendment No. 206.

L. Power Uprate License Amendment Implementation

The licensee shall complete the following actions as a condition of the approval of the power uprate license amendment (Amendment No. 183):

(1) Deleted by Amendment No. 206.

(2) Deleted by Amendment No. 206.

(3) Fuel Pool Decay Heat Evaluation

The decay heat loads and the decay heat removal systems available for each refueling outage shall be evaluated, and bounding or outage specific analyses shall be used for various refueling sequences. Where a bounding engineering evaluation is in place, a refueling specific assessment shall be made to ensure that the bounding case encompasses the specific refueling sequence. In both cases (i.e., bounding or outage specific evaluations), compliance with design basis assumptions shall be verified.

(4) Deleted by Amendment No. 206.

(5) Deleted by Amendment No. 206.

M. The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be included in the next scheduled update to the UFSAR required by 10 CFR 50.71(e)(4) following the issuance of this renewed operating license. Until that update is complete, CP&L* may make changes to the programs and activities described in the supplement without prior Commission approval, provided that CP&L* evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

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* On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

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N. The UFSAR supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. Duke Energy ~~Progress~~, LLC shall complete these activities no later than September 8, 2016, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

O. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of the most recent NRC-approved version of the Boiling Water Reactor Vessels and Internals Project (BWRVIP) Integrated Surveillance Program (ISP) appropriate for the configuration of the specimens in the capsule. Any changes to the BWRVIP ISP capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

P. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(1) Fire fighting response strategy with the following elements:
1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(2) Operations to mitigate fuel damage considering the following:
1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(3) Actions to minimize release to include consideration of:
1. Water spray scrubbing
2. Dose to onsite responders

Q. The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

3. Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 313 are hereby incorporated into this license. Duke Energy ~~Progress~~, LLC shall operate the facility in accordance with the Additional Conditions.

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FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments:
1. Unit 1 – Technical Specifications – Appendices A and B

Date of Issuance: June 26, 2006

# APPENDIX A

# TO

# THE FACILITY OPERATING LICENSE DPR-71

# TECHNICAL SPECIFICATIONS

# FOR

# BRUNSWICK STEAM ELECTRIC PLANT

# UNIT 1

# DUKE ENERGY ~~PROGRESS~~, LLC

CAROLINAS

DUKE ENERGY CAROLINAS, LLC

~~DUKE ENERGY PROGRESS, LLC~~

DOCKET NO. 50-324

BRUNSWICK STEAM ELECTRIC PLANT, UNIT 2

RENEWED FACILITY OPERATING LICENSE

Renewed License No. DPR-62

1. The Nuclear Regulatory Commission (NRC or the Commission) having previously made the findings set forth in License No. DPR-62 issued on December 27, 1974, has now found that:

   A. The application for license filed by Carolina Power & Light Company* (CP&L or the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Brunswick Steam Electric Plant, Unit 2 (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-67 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;

   C. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analysis that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations;

   D. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

   E. There is reasonable assurance: (i) that the activities authorized by this renewed operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

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* On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

F. The licensee is technically and financially qualified to engage in the activities authorized by this renewed operating license in accordance with the rules and regulations of the Commission;

G. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

H. The issuance of this renewed operating license will not be inimical to the common defense and security or to the health and safety of the public;

I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of Renewed Facility Operating License No. DPR-62 subject to the conditions for protection of the environment set forth herein is in accordance with 10 CFR Part 51 (formerly Appendix D to 10 CFR Part 50), of the Commission's regulations and all applicable requirements have been satisfied; and

J. The receipt, possession, and use of source, byproduct, and special nuclear material as authorized by this renewed license will be in accordance with the Commission's regulations in 10 CFR Part 30, 40, and 70, including 10 CFR Section 30.33, 40.32, and 70.23 and 70.31.

2. Renewed Facility Operating License No. DPR-62 is hereby issued to Duke Energy ~~Progress~~, LLC to read as follows:

A. This license applies to Brunswick Steam Electric Plant Unit 2, a boiling water reactor and associated equipment (the facility), owned and operated by Duke Energy ~~Progress~~, LLC. The facility is located on the Cape Fear River, near Southport in Brunswick County, North Carolina, and is described in the "Final Safety Analysis Report" as supplemented and amended (Amendments 1 through 29) and the "Environmental Report" as supplemented and amended (Supplements 1 through 7).

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B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Duke Energy ~~Progress~~, LLC:

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Brunswick County, North Carolina, in accordance with the procedures and limitations set forth in this renewed license;

(2) Pursuant to the Act and 10 CFR Part 70, to receive, possess and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(3) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess and use at any time any byproduct, source and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

(4) Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess and use in amounts as required any byproduct, source, and special nuclear materials without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;

(5) Pursuant to the Act and 10 CFR Parts 30 and 70 to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of Brunswick Steam Electric Plant, Unit Nos. 1 and 2, and H. B. Robinson Steam Electric Plant, Unit No. 2.

(6) Fire Protection

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Duke Energy ~~Progress~~, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated September 25, 2012, and November 15, 2017, as supplemented by letters dated December 17, 2012; June 28, 2013; July 15, 2013; July 31, 2013; August 29, 2013; September 30, 2013; February 28, 2014; March 14, 2014; April 10, 2014; June 26, 2014; August 15, 2014; August 29, 2014; November 20, 2014; December 18, 2014; and May 23, 2018; and as approved in the safety evaluations dated January 28, 2015, and July 6, 2018. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(a) Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk

No changes to this page

assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as built, as operated, and maintained plant; and reflect the operating experience at Brunswick. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant-specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

1. Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

2. Prior NRC review and approval is not required for individual changes that result in a risk increase less than $1x10^{-7}$/year (yr) for CDF and less than $1x10^{-8}$/yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

(b) Other Changes that May Be Made Without Prior NRC Approval

1. Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

   Prior NRC review and approval is not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the

No changes to this page

component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

- "Fire Alarm and Detection Systems" (Section 3.8);
- "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
- "Gaseous Fire Suppression Systems" (Section 3.10); and
- "Passive Fire Protection Features" (Section 3.11).

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

2. Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval is not required for changes to the licensee's fire protection program that have been demonstrated to have no more than a minimal risk impact. The licensee may use its screening process as approved in the NRC safety evaluation dated January 28, 2015, to determine that certain fire protection program changes meet the minimal criterion. The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

(c) Transition License Conditions

1. Before achieving full compliance with 10 CFR 50.48(c), as specified by 2. below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2. above.

2. The licensee shall implement the modifications to its facility, as described in Table S-1, "Plant Modifications Committed," of Duke letter BSEP 14-0122, dated November 20, 2014, to complete the transition to full compliance with 10 CFR 50.48(c) by the startup of the second refueling outage for each unit after issuance of the safety evaluation. The licensee shall maintain appropriate compensatory measures in place until completion of these modifications.

3. The licensee shall complete all implementation items, except Item 9, listed in LAR Attachment S, Table S-2, "Implementation Items," of Duke letter BSEP 14-0122, dated November 20, 2014, within 180 days after NRC approval unless the 180th day falls within an outage window; then, in that case, completion of the implementation items, except item 9, shall occur no later than 60 days after startup from that particular outage. The licensee shall complete implementation of LAR Attachment S, Table S-2, Item 9, within 180 days after the startup of the second refueling outage for each unit after issuance of the safety evaluation.

C. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I: Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 2923 megawatts (thermal).

(2) Technical Specifications

Carolinas

The Technical Specifications contained in Appendix A, as revised through Amendment No. 340, are hereby incorporated in the license. Duke Energy ~~Progress~~, LLC shall operate the facility in accordance with the Technical Specifications.

For Surveillance Requirements (SRs) that are new in Amendment 233 to Renewed Facility Operating License DPR-62, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 233. For SRs that existed prior to Amendment 233,

No changes to this page

including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 233.

(a) The end of the current surveillance period for the surveillance requirements listed below may be extended beyond the time limit specified by Technical Specification 4.0.2a. After May 1, 1982, the plant shall not be operated in Conditions 1, 2, or 3 until the surveillance requirements listed below have been completed. Upon accomplishment of the surveillances, the provisions of Technical Specification 4.0.2a shall apply.

Specification 4.3.1.1; Table 4.3.1-1, items 9 & 10
4.3.1.2
4.3.1.3; Table 3.3.1-2, item 10
4.3.2.1; Table 4.3.2-1, items 1.d & 1.f
4.3.2.3; Table 3.3.2-3, item 1.a.1
4.3.3.2; Table 4.3.3-1, items 4.c & 4.f
4.5.2.a
4.8.1.1.2.d.2
4.8.1.1.2.d.3
4.8.1.1.2.d.6
4.8.1.1.2.d.7

(b) Effective June 30, 1982, the surveillance requirements listed below need not be completed until restart for Cycle 5 or July 15, 1982, whichever occurs first. The unit shall not be operated in Conditions 1, 2 or 3 until the surveillance requirements listed below have been completed. Upon accomplishment of the surveillances, the provisions of Technical Specification 4.0.2 shall apply.

Specification 4.3.3.1 Table 4.3.3-1, Items 5.a and 5.b.

(c) Effective July 1, 1982, through July 8, 1982, Action statement "a" of Technical Specification 3.8.1.1 shall read as follows:

ACTION:

a. With either one offsite circuit or one diesel generator of the above required A.C. electrical power sources inoperable, demonstrate the OPERABILITY of the remaining A.C. sources by performing Surveillance Requirements 4.8.1.1.1.a and 4.8.1.1.2.a.4 within two hours and at least once per 12 hours thereafter; restore at least two offsite circuits and four diesel generators to OPERABLE status within 7 days or be in at least HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN within the following 24 hours.

No changes to this page

(3) Deleted by Amendment No. 236.

(4) Equalizer Valve Restriction

The valves in the equalizer piping between the recirculation loops shall be closed at all times during reactor operation, except for one bypass valve which is left open to prevent pressure build-up due to ambient and conduction heating of the water between the equalizer valves.

(5) Deleted by Amendment No. 233.

(6) The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans, including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Physical Security Plan, Revision 2," and "Safeguards Contingency Plan, Revision 2," submitted by letter dated May 17, 2006, and "Guard Training and Qualification Plan, Revision 0," submitted by letter dated September 30, 2004.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 286, as supplemented by changes approved by License Amendment Nos. 289 and 293.

D. This license is subject to the following additional conditions for the protection of the environment:

a. Deleted per Amendment 79, 3-11-83

b. Deleted per Amendment 79, 3-11-83

c. Deleted per Amendment 79, 3-11-83

d. The licensee shall comply with the effluent limitations contained in National Pollutant Discharge Elimination System Permit No. NC0007064 issued pursuant to Section 402 of the Federal Water Pollution Control Act, as amended.

E. This license is effective as of the date of issuance and shall expire at midnight on December 27, 2034.

F. Deleted per Amendment No. 98 dated 5-25-84.

G. Deleted per Amendment No. 98 dated 5-25-84.

H. Deleted by Amendment No. 236.

I. Power Uprate License Amendment Implementation

The licensee shall complete the following actions as a condition of the approval of the power uprate license amendment (Amendment No. 214):

(1) Deleted by Amendment No. 236.

(2) Deleted by Amendment No. 236.

(3) Fuel Pool Decay Heat Evaluation

The decay heat loads and the decay heat removal systems available for each refueling outage shall be evaluated, and bounding or outage specific analyses shall be used for various refueling sequences. Where a bounding engineering evaluation is in place, a refueling specific assessment shall be made to ensure that the bounding case encompasses the specific refueling sequence. In both cases (i.e., bounding or outage specific evaluations), compliance with design basis assumptions shall be verified.

(4) Deleted by Amendment No. 236.

(5) Deleted by Amendment No. 236.

J. The UFSAR supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be included in the next scheduled update to the UFSAR required by 10 CFR 50.71(e)(4) following the issuance of this renewed operating license. Until that update is complete, CP&L* may make changes to the programs and activities described in the supplement without prior Commission approval, provided that CP&L* evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

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K. The UFSAR supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. Duke Energy ~~Progress~~, LLC shall complete these activities no later than December 27, 2014, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

L. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of the most recent NRC-approved version of the Boiling Water Reactor Vessels and Internals Project (BWRVIP) Integrated Surveillance Program (ISP) appropriate for the configuration of the specimens in the capsule. Any changes to the BWRVIP ISP capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

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* On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc."

On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

M. Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(1) Fire fighting response strategy with the following elements:
1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(2) Operations to mitigate fuel damage considering the following:
1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(3) Actions to minimize release to include consideration of:
1. Water spray scrubbing
2. Dose to onsite responders

N. The licensee shall implement and maintain all Actions required by Attachment 2 to NRC Order EA-06-137, issued June 20, 2006, except the last action that requires incorporation of the strategies into the site security plan, contingency plan, emergency plan and/or guard training and qualification plan, as appropriate.

3. Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 341, are hereby incorporated into this license. Duke Energy ~~Progress~~, LLC shall operate the facility in accordance with the Additional Conditions.

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FOR THE NUCLEAR REGULATORY COMMISSION

/RA/

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments:
1. Unit 2 – Technical Specifications – Appendices A and B

Date of Issuance: June 26, 2006

No changes to this page

| NRC Orders Reference Page | | | |
|---|---|---|---|
| **NRC Order Number** | **Date Issued** | **Topic** | **Contact Organization** |
| EA-02-026 | 2/25/2002 | Interim Security Measures<br>[Rescinded 11/28/2011, except for Requirements B.1.a, B.5.d, and B.5.e.]<br>[Requirements B.5.d and B.5.e Rescinded 5/3/2019, Requirement B.1.a remains in effect.] | Regulatory Affairs |
| (unnumbered) | 10/3/2002 | (Confidential) | Regulatory Affairs |
| EA-02-261 | 1/7/2003 | Access Authorization<br>[Rescinded 11/28/2011] | Regulatory Affairs |
| EA-03-038 | 4/29/2003 | Fitness-for-Duty/Fatigue | Regulatory Affairs |
| EA-03-039 | 4/29/2003 | Training and Qualifications for Security Force Personnel<br>[Rescinded 11/28/2011] | Regulatory Affairs |
| EA-03-086 | 4/29/2003 | Supplemental Design Basis Threat Requirements | Regulatory Affairs |
| EA-04-190 | 11/5/2004 | (Confidential) | Security |
| EA-05-007 | 7/19/2005 | Transportation of Radioactive Material Quantities of Concern<br>[Rescinded 6/3/2015] | Regulatory Affairs |
| EA-06-037 | 3/20/2006 | Updated Adversary Characteristic | Security |
| EA-06-137 | 6/20/2006 | Compliance With Key Radiological Protection Mitigation Strategies | Security |
| (unnumbered) | 12/2/2011 | Indirect Transfer of Control of Licenses | Regulatory Affairs |
| EA-12-049 | 3/12/12 | Requirements for Mitigation Strategies for Beyond-Design-Basis External Events | Regulatory Affairs |
| EA-12-050 | 3/12/12 | Reliable Hardened Containment Vents<br>[Rescinded 6/6/2013] | Regulatory Affairs |
| EA-12-051 | 3/12/12 | Reliable Spent Fuel Pool Instrumentation | Regulatory Affairs |
| EA-13-109 | 6/6/13 | Reliable Hardened Containment Vents Capable of Operation Under Severe Accident Conditions | Regulatory Affairs |
| (unnumbered) | 7/6/2015 | Direct Transfer of Control of Operating Licenses | Regulatory Affairs |

# APPENDIX A

# TO

# THE FACILITY OPERATING LICENSE DPR-62

# TECHNICAL SPECIFICATIONS

# FOR

# BRUNSWICK STEAM ELECTRIC PLANT

# UNIT 2

# DUKE ENERGY ~~PROGRESS~~, LLC

CAROLINAS

**ATTACHMENT 2**

**SHEARON HARRIS NUCLEAR POWER PLANT**

**MARKED CHANGES TO CURRENT RENEWED FACILITY OPERATING LICENSE NPF-63**

**16 PAGES PLUS THE COVER**

DUKE ENERGY CAROLINAS, LLC

~~DUKE ENERGY PROGRESS, LLC~~

DOCKET NO. 50-400

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1

RENEWED FACILITY OPERATING LICENSE

Renewed License No. NPF-63

1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:

   A. The application for renewal of the license filed by the Carolina Power & Light Company* (CP&L) for itself complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's regulations set forth in 10 CFR Chapter I, and all required notifications to other agencies or bodies have been duly made;

   B. Construction of the Shearon Harris Nuclear Power Plant, Unit 1, (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-158 and the application, as amended, the provisions of the Act, and the regulations of the Commission;

   C. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1); and (2) time-limited aging analysis that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by the renewed operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for the facility, and that any changes made to the facility's current licensing basis in order to comply with 10 CFR 54.29(a) are in accordance with the Act and the Commission's regulations;

   D. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the regulations of the Commission (except as exempted from compliance in Section 2.D. below);

   E. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);

*On April 29, 2013, the name "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

Carolinas

F. Duke Energy ~~Progress~~, LLC* is technically qualified to engage in the activities authorized by this license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;

G. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

H. The issuance of this license will not be inimical to the common defense and security or to the health and safety of the public;

I. After weighing the environmental, economic, technical, and other benefits of the facility against environmental and other costs and considering available alternatives, the issuance of this Renewed Facility Operating License No. NPF-63, subject to the conditions for protection of the environment set forth in the Environmental Protection Plan attached as Appendix B, is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied;

J. The receipt, possession and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70.

2. Based on the foregoing findings and the Partial Initial Decisions issued by the Atomic Safety and Licensing Board dated February 20, 1985, August 20, 1985, December 11, 1985, and April 28, 1986, regarding this facility and pursuant to approval by the Nuclear Regulatory Commission at a meeting on January 8, 1987, Facility Operating License No. NPF-63, which supersedes the license for fuel loading and low power testing, License No. NPF-53 issued on October 24, 1986, is hereby issued to Duke Energy Progress, LLC. (the licensee) as follows:

A. This license applies to the Shearon Harris Nuclear Power Plant, Unit 1, a pressurized water reactor and associated equipment (the facility) owned and operated by Duke Energy ~~Progress~~, LLC. The facility is located on the licensee's site in Wake and Chatham Counties, North Carolina, approximately 16 miles southwest of the nearest boundary of Raleigh, and is described in its Final Safety Analysis Report, as supplemented and amended, and in its Environmental Report, as supplemented and amended;

Carolinas

*Duke Energy ~~Progress~~, LLC. has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

Carolinas

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:

(1) Pursuant to Section 103 of the Act and 10 CFR Part 50, Duke Energy ~~Progress~~, LLC to possess, use, and operate the facility at the designated location in Wake and Chatham Counties, North Carolina, in accordance with the procedures and limitations set forth in this license;

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(2) Deleted.

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(3) Pursuant to the Act and 10 CFR Part 70, Duke Energy ~~Progress~~, LLC. to receive, possess, and use at any time special nuclear material as reactor fuel, in accordance with the limitations for storage and amounts required for reactor operation, as described in the Final Safety Analysis Report, as supplemented and amended;

(4) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Duke Energy ~~Progress~~, LLC to receive, possess, and use at any time any byproduct, source and special nuclear material such as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

Carolinas

(5) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Duke Energy ~~Progress~~, LLC receive, possess, and use in amounts as required any byproduct, source or special nuclear material without restriction to chemical or physical form, for sample analysis or instrument calibration or associated with radioactive apparatus or components;

(6) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Duke Energy ~~Progress~~, LLC to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein;

Carolinas

(7) Pursuant to the Act and 10 CFR Parts 30 and 40, Duke Energy ~~Progress~~, LLC to receive, possess and process for release or transfer to the Shearon Harris site such byproduct material as may be produced by the Shearon Harris Energy and Environmental Center;

(8) Pursuant to the Act and 10 CFR Parts 30, 40, and 70, Duke Energy ~~Progress~~, LLC to receive and possess but not separate, such byproduct and special nuclear materials as may be produced by the operation of the Brunswick Steam Electric Plant, Units 1 and 2, and H. B. Robinson Steam Electric Plant, Unit 2.

Carolinas

C. This license shall be deemed to contain and is subject to the conditions specified in the Commission's regulations set forth in 10 CFR Chapter I and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect, and is subject to the additional conditions specified or incorporated below.

(1) Maximum Power Level

Carolinas

Duke Energy ~~Progress~~, LLC, is authorized to operate the facility at reactor Core power levels not in excess of 2948 megawatts thermal (100 percent rated core power) in accordance with the conditions specified herein.

(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, as revised through Amendment No. 203, are hereby incorporated into this license. Duke Energy ~~Progress~~, LLC shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

Carolinas

(3) Antitrust Conditions

Duke Energy ~~Progress~~, LLC. shall comply with the antitrust conditions delineated in Appendix C to this license.

(4) Initial Startup Test Program (Section 14)[1]

Any changes to the Initial Test Program described in Section 14 of the FSAR made in accordance with the provisions of 10 CFR 50.59 shall be reported in accordance with 50.59(b) within one month of such change.

(5) Steam Generator Tube Rupture (Section 15.6.3)

Prior to startup following the first refueling outage, Carolina Power & Light Company* shall submit for NRC review and receive approval if a steam generator tube rupture analysis, including the assumed operator actions, which demonstrates that the consequences of the design basis steam generator tube rupture event for the Shearon Harris Nuclear Power Plant are less than the acceptance criteria specified in the Standard Review Plan, NUREG-0800, at 15.6.3 Subparts II (1) and (2) for calculated doses from radiological releases. In preparing their analysis Carolina Power & Light Company* will not assume that operators will complete corrective actions within the first thirty minutes after a steam generator tube rupture.

[1]The parenthetical notation following the title of many license conditions denotes the section of the Safety Evaluation Report and/or its supplements wherein the license condition is discussed.
* On April 29, 2013, the name of "Carolina Power & Light Company" (CP&L) was changed to "Duke Energy Progress, Inc." On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

(6) Detailed Control Room Design Review (Item I.D.1, Section 18)

Carolina Power & Light* shall submit the final results of the control room surveys prior to startup following the first refueling outage.

(7) Safety Parameter Display System (Section 18.2.1)

Carolina Power & Light Company* shall submit to the NRC for review prior to startup following the first refueling:

(a) The final Validation Test Report,

(b) The resolution of additional human engineering deficiencies identified on the safety parameter display system.

(8) Deleted

(9) Formal Federal Emergency Management Agency Finding

In the event that the NRC finds that the lack of progress in completion of the procedures in the Federal Emergency Management Agency's final rule, 44 CFR Part 350, is an indication that a major substantive problem exists in achieving or maintaining an adequate state of emergency preparedness, the provisions of 10 CFR Section 50.54(s)(2) will apply.

(10) Fresh Fuel Storage

The following criteria apply to the storage and handling of new fuel assemblies in the Fuel Handling Building:

(a) The minimum edge-to-edge distance between a new fuel assembly outside its shipping container or storage rack and all other new fuel assemblies shall be at least 12 inches.

(b) New fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.

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On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

No changes to this page

(11) Mitigation Strategy License Condition

Develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(a) Fire fighting response strategy with the following elements:
1. Pre-defined coordinated fire response strategy and guidance
2. Assessment of mutual aid fire fighting assets
3. Designated staging areas for equipment and materials
4. Command and control
5. Training of response personnel

(b) Operations to mitigate fuel damage considering the following:
1. Protection and use of personnel assets
2. Communications
3. Minimizing fire spread
4. Procedures for implementing integrated fire response strategy
5. Identification of readily-available pre-staged equipment
6. Training on integrated fire response strategy
7. Spent fuel pool mitigation measures

(c) Actions to minimize release to include consideration of:
1. Water spray scrubbing
2. Dose to onsite responders

(12) Control Room Habitability

Upon implementation of Amendment No. 128 adopting TSTF-448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by Surveillance Requirement (SR) 4.7.6.g, in accordance with TS 6.8.4.o.3(i), the assessment of CRE habitability as required by TS 6.8.4.o.3(ii) and the measurement of CRE pressure as required by TS 6.8.4.o.4, shall be considered met. Following implementation:

a) The first performance of SR 4.7.6.g, in accordance with Specification 6.8.4.o.3(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 4.0.2, as measured from March 5, 2004, the date of the most recent successful tracer gas test, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years.

No changes to this page

b) The first performance of the periodic assessment of CRE habitability, Specification 6.8.4.o.3(ii), shall be within 3 years, plus the 9-month allowance of SR 4.0.2, as measured from March 5, 2004, the date of the most recent successful tracer gas test, or within the next 9 months if the time period since the most recent successful tracer gas test is greater than 3 years.

c) The first performance of the periodic measurement of CRE pressure, Specification 6.8.4.o.4, shall be within 18 months plus 138 days allowed by SR 4.0.2 as measured from October 13, 2006, the date of the most recent successful pressure measurement test.

D. Exemptions

The facility requires an exemption from Appendix E, Section IV.F.1, which requires that a full participation exercise be conducted within one year before the issuance of a license for full power operation. This exemption is authorized by law and will not endanger life or property or the common defense and security, and certain special circumstances are present. This exemption is, therefore, hereby granted pursuant to 10 CFR 50.12 as follows:

> Shearon Harris Nuclear Power Plant, Unit 1, is exempt from the requirement of 10 CFR Part 50, Appendix E, Section IV.F.1 for the conduct of an offsite full participation exercise within one year before the issuance of the first operating license for full power and prior to operation above 5 percent of rated power, provided that a full participation exercise is conducted before or during March 1987.

The facility is granted an exemption from Paragraph III.D.2(b)(ii) of Appendix J to 10 CFR Part 50 (see SER Section 6.2.6). This exemption is authorized by law and will not endanger life or property or the common defense and security, and certain special circumstances are present. In addition, the facility was previously granted an exemption from the criticality alarm requirements of paragraph 70.24 of 10 CFR Part 70 insofar as this section applies to this license. (See License Number SNM-1939 dated October 28, 1985, which granted this exemption).

E. Physical and Cyber Security (Section 13.6.2.10)

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The plans, which contain Safeguards Information protected under 10 CFR 73.21, are entitled: "Guard Training and Qualification Plan" submitted by letter dated October 19, 2004, "Physical Security Plan" and "Safeguards Contingency Plan" submitted by letter dated October 19, 2004 as supplemented by letter dated May 16, 2006.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 136, as supplemented by changes approved by License Amendment Nos. 140 and 144.

F. Fire Protection Program

Carolinas

Duke Energy ~~Progress~~, LLC shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the revised license amendment request dated October 9, 2009, supplemented by letters dated February 4, 2010, and April 5, 2010, and approved in the associated safety evaluation dated June 28, 2010. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c) and NFPA 805, and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

(1) Risk-Informed Changes that May Be Made Without Prior NRC Approval

A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the proposed change may include methods that have been used in the peer-reviewed Fire PRA model, methods that have been approved by the NRC via a plant-specific license amendment or through NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

No changes to this page

(a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

No changes to this page

(b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1 x 10E-7 per year (/yr) for CDF and less than 1 x 10E-8/yr for LERF. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

(2) Other Criteria for Changes that May Be Made to the NFPA 805 Fire Protection Program Without Prior NRC Approval

(a) Changes to NFPA 805 Chapter 3, Fundamental Fire Protection Program Elements and Design Requirements

Prior NRC review and approval is not required for changes to the NFPA 805 Chapter 3 fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard.

The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805 Chapter 3 element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805 Chapter 3 elements are acceptable because the alternative is “adequate for the hazard.” Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805 Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

The four specific sections of NFPA 805 Chapter 3 are as follows:

- Fire Alarm and Detection Systems (Section 3.8);
- Automatic and Manual Water-Based Fire Suppression Systems (Section 3.9);
- Gaseous Fire Suppression Systems (Section 3.10); and
- Passive Fire Protection Features (Section 3.11).

No changes to this page

This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

(b) Fire Protection Program Changes that Have No More than Minimal Risk Impact

Prior NRC review and approval is not required for changes to the licensee's fire protection program that have been demonstrated to have no more than minimal risk impact. The licensee may use its screening process, as approved in the NRC safety evaluation dated June 28, 2010, to determine that certain fire protection program changes meet the minimal risk criterion. The licensee shall in all cases ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

(c) Unless License Condition F.(2)(b) is met, risk-informed changes to the licensee's fire protection program which involve fire areas that credit incipient detection may not be made without prior NRC review and approval until the Harris Fire PRA model has been modified to incorporate an NRC-accepted method for modeling incipient detection.

(3) Transition License Conditions

(a) Before achieving full compliance with 10 CFR 50.48(c), as specified by Transition License Condition F.(3)(b), risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in License Condition F.(2)(b) above.

(b) The licensee shall implement the following modifications to its facility in order to complete the transition to full compliance with 10 CFR 50.48(c) by December 31, 2010 (note that each modification is listed by Engineering Change (EC) Number, as described in Attachment S of the Shearon Harris NFPA 805 License Amendment Request Transition Report, and outlined in Table 2.8.1-2 of the associated NRC safety evaluation):

- EC 62343
- EC 62820
- EC 68645
- EC 68646
- EC 68648
- EC 68658
- EC 68769
- EC 69501
- EC 69764
- EC 69765
- EC 70027
- EC 70350
- EC 70895
- EC 71147

(c) The licensee shall maintain appropriate compensatory measures in place until completion of the modifications delineated above.

G. Deleted.

H. The licensee shall have and maintain financial protection of such type and in such amounts as the Commission shall require in accordance with Section 170 of the Atomic Energy Act of 1954, as amended, to cover public liability claims.

I. The Updated Safety Analysis Report supplement, as revised, submitted pursuant to 10 CFR 54.21(d), shall be included in the next scheduled update to the Updated Safety Analysis Report required by 10 CFR 50.71(e)(4) following the issuance of this renewed operating license. Until that update is complete, CP&L* may make changes to the programs and activities described in the supplement without prior Commission approval, provided that CP&L* evaluates such changes pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

J. The Updated Safety Analysis Report supplement, as revised, describes certain future activities to be completed prior to the period of extended operation. Duke Energy ~~Progress~~, LLC shall complete these activities no later than October 24, 2026, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

Carolinas

K. All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of American Society for Testing and Materials E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future inspection. Any changes to storage requirements must be approved by the NRC, as required by 10 CFR Part 50, Appendix H.

*On April 29, 2013, the name “Carolina Power & Light Company” (CP&L) was changed to “Duke Energy Progress, Inc.” On August 1, 2015, the name “Duke Energy Progress, Inc.” was changed to “Duke Energy Progress, LLC.”

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

No changes to this page

L. This license is effective as of the date of issuance and shall expire at midnight on October 24, 2046.

FOR THE NUCLEAR REGULATORY COMMISSION

**/RA/**

Eric J. Leeds, Director
Office of Nuclear Reactor Regulation

Attachments/Appendices:
1. Appendix A – Technical Specifications
2. Appendix B – Environmental Protection Plan
3. Appendix C – Antitrust Conditions
4. Appendix D – Additional Conditions

Date of Issuance: December 17, 2008

APPENDIX B

TO FACILITY OPERATING LICENSE NO. NPF-63

SHEARON HARRIS NUCLEAR POWER PLANT

UNIT 1

CAROLINAS

DUKE ENERGY ~~PROGRESS~~, LLC

DOCKET NO. 50-400

ENVIRONMENTAL PROTECTION PLAN

(NONRADIOLOGICAL)

JANUARY 1987

# APPENDIX C

## ANTITRUST CONDITIONS

The licensee, Duke Energy ~~Progress~~ Carolinas, LLC is subject to the following antitrust conditions:

Commitment No. 1

Licensee recognizes that it is generally in the public interest for electric utilities to interconnect, coordinate reserves, and engage in bulk power supply transactions, in order to increase electric system reliability and reduce the costs of electric power. Bulk power supply arrangements should be such as to provide benefits, on balance, each to licensee and to other participant(s), respectively. The benefits to participants in such arrangements need not be equal and the benefits realized by a small system may be proportionately greater than those realized by a larger system. In implementing the commitments which it makes in the succeeding paragraphs, licensee will act in accordance with the foregoing principles.

Explanatory Note*

(a) Neither licensee nor any other participant shall be obligated to enter into such arrangements (1) if to do so would violate, incapacitate, or limit its ability to perform any other existing contractual arrangement, or (2) to do so would adversely affect its system operations or the reliability of power supply to its customers, or (3) if to do so would jeopardize the licensee's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements.

Commitment No. 2

Licensee will interconnect with and coordinate reserves by means of the sale and exchange of emergency bulk power with any entity or entities in its service area** engaging in or proposing to engage in electric bulk power supply on terms that will provide for licensee's costs (including a reasonable return) in connection therewith; and allow the other participant(s), as well as licensee, full access on a proportionate basis to the benefits of reserve coordination. ("Proportionate basis" refers to the equalized percentage of reserves concept rather than the largest single-unit concept, unless all participants otherwise agree).

* In order to clarify the commitments, certain explanatory notes have been added.

** The use of the term "service area" as found in this commitment or in any other section of the commitments is intended to describe those areas in North Carolina and South Carolina where licensee provides some class of electric service, but in no way indicates an assignment or allocation of wholesale market areas.

APPENDIX D

ADDITIONAL CONDITIONS

RENEWED LICENSE NO. NPF-63

Carolinas

Duke Energy ~~Progress~~, LLC shall comply with the following conditions on the schedule noted below:

| Amendment Number | Additional Conditions | Implementation Date |
|---|---|---|
| ~~174~~, 188 | Duke Energy is approved to implement 10 CFR 50.69 using the processes for categorization of Risk Informed Safety Class (RISC)-1, RISC-2, RISC-3, and RISC-4 structures, systems, and components (SSCs) using: Probabilistic Risk Assessment (PRA) models to evaluate risk associated with internal events, including internal flooding, and internal fire; the shutdown safety assessment process to assess shutdown risk; the Arkansas Nuclear One, Unit 2 (ANO-2) passive categorization method to assess passive component risk for Class 2 and Class 3 SSCs and their associated supports; and the results of non-PRA evaluations that are based on the IPEEE Screening Assessment for External Hazards, i.e., seismic margin analysis (SMA) to evaluate seismic risk, and a screening of other external hazards updated using the external hazard screening significance process identified in ASME/ANS PRA Standard RA-Sa-2009; as specified in Unit 1 License Amendment No. 174 dated September 17, 2019.<br><br>In addition, Duke Energy is approved to implement 10 CFR 50.69 using the alternative seismic approach for categorization of RISC-1, RISC-2, RISC-3, and RISC-4 SSCs as described in Duke Energy letter RA-20-0311, dated January 14, 2021, and as specified in License Amendment No. 188 dated January 19, 2022.<br><br>Prior NRC approval, under 10 CFR 50.90, is required for a change to the categorization process specified above (e.g., change from the alternate seismic approach (referenced above) to a seismic probabilistic risk assessment approach). | Upon implementation of Amendment No. 188. |

**ATTACHMENT 3**

**H.B. ROBINSON STEAM ELECTRIC PLANT**

**MARKED CHANGES TO CURRENT RENEWED FACILITY OPERATING LICENSE DPR-23**

**11 PAGES PLUS THE COVER**

DUKE ENERGY CAROLINAS, LLC

~~DUKE ENERGY PROGRESS, LLC.~~

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2

RENEWED FACILITY OPERATING LICENSE NO. DPR-23

The U.S. Nuclear Regulatory Commission (the Commission) having previously made the findings set forth in License No. DPR-23 issued July 31, 1970, has now found that:

a. The application to renew License No. DPR-23 filed by Carolina Power & Light Company* (the licensee) complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in Title 10 *Code of Federal Regulations* (10 CFR) Chapter I, and all required notifications to other agencies or bodies have been duly made;

b. Actions have been identified and have been or will be taken with respect to (1) managing the effects of aging during the period of extended operation on the functionality of structures and components that have been identified to require review under 10 CFR 54.21(a)(1), and (2) time-limited aging analyses that have been identified to require review under 10 CFR 54.21(c), such that there is reasonable assurance that the activities authorized by this renewed license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for H. B. Robinson Steam Electric Plant, Unit No. 2, and that any changes made to the plant's current licensing basis in order to comply with 10 CFR 54.29(a) are in accord with the Act and the Commission's regulations;

c. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

d. There is reasonable assurance (i)(a) that initial fuel loading can be conducted in accordance with this license without endangering the health and safety of the public, (i)(b) that upon completion of the Hot Laboratory and installation and testing of the secondary system as described in the applicant's letter dated July 16, 1970, and as noted in subparagraph 3.A., the facility can be operated at steady state power levels up to 5 megawatts thermal in accordance with this license without endangering the health and safety of the public, and (i)(c) that, upon satisfactory completion of the seismic analysis of Class I piping and equipment and upon satisfactory completion of all the items described in the applicant's letter dated July 16, 1970, except the auxiliary safety device on the crane for handling a spent fuel cask which will be installed prior to handling irradiated fuel with the cask, the facility can be operated at steady state power levels up to 2339 megawatts thermal in accordance with this renewed license without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations of the Commission;

* On April 29, 2013, the name Carolina Power & Light Company (CP&L) was changed to Duke Energy Progress, Inc. On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

e. The applicant is technically and financially qualified to engage in the activities authorized by this renewed license in accordance with the rules and regulations of the Commission;

f. The applicant has furnished proof of financial protection to satisfy the requirements of 10 CFR Part 140;

g. The issuance of this renewed license will not be inimical to the common defense and security or to the health and safety of the public; and

h. After weighing the environmental, economic, technical, and other benefits of the facility against environmental costs and considering available alternatives, the Commission concludes that the issuance of Renewed Operating License No. DPR-23 is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

On the basis of the forgoing findings regarding this facility, Facility Operating License No. DPR-23, issued July 31, 1970, is superseded by Renewed Facility Operating License No. DPR-23, which is hereby issued to the Carolina Power & Light Company (CP&L)*, to read as follows:

1. This renewed license applies to the H. B. Robinson Steam Electric Plant, Unit No. 2 nuclear facility, a closed cycle, pressurized, light water moderated and cooled reactor, and associated steam generators and electric generating equipment (the facility). The facility is located on the applicant's H. B. Robinson site, Darlington County, about 4.5 miles west northwest of Hartsville, South Carolina, and is described in the "Final Facility Description and Safety Analysis Report," as amended (Amendment Nos. 8 through 21), and in the reports filed with the applicant's letters dated June 5, 1970 and July 1, 1970.

2. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses (CP&L)*:

   A. Pursuant to Section 104b of the Atomic Energy Act of 1954, as amended (the Act), and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility as a utilization at the designated location on the H. B. Robinson site in Darlington County, South Carolina in accordance with the procedures and limitations set forth in this renewed license;

   B. Pursuant to the Act and 10 CFR Part 70, to receive, possess, and use at any time special nuclear material as reactor fuel in accordance with the limitations for storage and amounts required for reactor operation, as described in the Updated Final Safety Analysis Report as supplemented and amended;

   C. Pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess, and use at any time any byproduct, source, and special nuclear material as sealed neutron sources for reactor startup, sealed sources for reactor instrumentation and radiation monitoring equipment calibration, and as fission detectors in amounts as required;

* On April 29, 2013, the name Carolina Power & Light Company (CP&L) was changed to Duke Energy Progress, Inc. On August 1, 2015, the name "Duke Energy Progress, Inc." was changed to "Duke Energy Progress, LLC."

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

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D. Pursuant to the Act and 10 CFR Parts 30, 40 and 70, to receive, possess, and use in amounts as required any byproduct, source, or special nuclear material without restriction to chemical or physical form for sample analysis or instrument and equipment calibration or associated with radioactive apparatus or components;

E. Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by operation of the facility.

3. This renewed license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations: 10 CFR Part 20, Section 30.34 of 10 CFR Part 30, Section 40.41 of 10 CFR Part 40, Section 50.54 and 50.59 of 10 CFR Part 50, and Section 70.32 of 10 CFR Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

A. Maximum Power Level

The licensee is authorized to operate the facility at a steady state reactor core power level not in excess of 2339 megawatts thermal.

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 281 are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

(1) For Surveillance Requirements (SRs) that are new in Amendment 176 to Final Operating License DPR-23, the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment 176. For SRs that existed prior to Amendment 176, including SRs with modified acceptance criteria and SRs whose frequency of performance is being extended, the first performance is due at the end of the first surveillance interval that begins on the date the Surveillance was last performed prior to implementation of Amendment 176.

C. Reports

Carolinas

Duke Energy ~~Progress~~, LLC. shall make certain reports in accordance with the requirements of the Technical Specifications.

D. Records

Carolinas

Duke Energy ~~Progress~~, LLC. shall keep facility operating records in accordance with the requirements of the Technical Specifications.

E. Fire Protection Program

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Duke Energy ~~Progress~~, LLC. shall implement and maintain in effect all provisions of the approved fire protection program that comply with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the license amendment request dated September 16, 2013, as supplemented by letters dated November 24, 2014, December 22, 2014, January 22, 2015, March 16, 2015, April 1, 2015, May 19, 2015, July 31, 2015, March 16, 2016, May 25, 2016, July 25, 2016, and October 5, 2016, and as approved in the SE dated February 3, 2017. Except where NRC approval for changes or deviations is required by 10 CFR 50.48(c), and provided no other regulation, technical specification, license condition or requirement would require prior NRC approval, the licensee may make changes to the fire protection program without prior approval of the Commission if those changes satisfy the provisions set forth in 10 CFR 50.48(a) and 10 CFR 50.48(c), the change does not require a change to a technical specification or a license condition, and the criteria listed below are satisfied.

1. Risk-Informed Changes that May Be Made Without Prior NRC Approval

   A risk assessment of the change must demonstrate that the acceptance criteria below are met. The risk assessment approach, methods, and data shall be acceptable to the NRC and shall be appropriate for the nature and scope of the change being evaluated; be based on the as-built, as-operated, and maintained plant; and reflect the operating experience at the plant. Acceptable methods to assess the risk of the change may include methods that have been used in the peer-reviewed fire PRA model, methods that have been approved by NRC through a plant specific license amendment or NRC approval of generic methods specifically for use in NFPA 805 risk assessments, or methods that have been demonstrated to bound the risk impact.

   a) Prior NRC review and approval is not required for changes that clearly result in a decrease in risk. The proposed change must also be consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

   b) Prior NRC review and approval is not required for individual changes that result in a risk increase less than $1X10^{-7}$/year (yr) for CDF and less than $1X10^{-8}$/yr for LERF. The proposed change must also be

No changes to this page

consistent with the defense-in-depth philosophy and must maintain sufficient safety margins. The change may be implemented following completion of the plant change evaluation.

2. Other changes that May Be Made Without Prior NRC Approval

   a) Changes to NFPA 805, Chapter 3, Fundamental Fire Protection Program

   Prior NRC review and approval is not required for changes to the NFPA 805, Chapter 3, fundamental fire protection program elements and design requirements for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is functionally equivalent or adequate for the hazard. The licensee may use an engineering evaluation to demonstrate that a change to an NFPA 805, Chapter 3, element is functionally equivalent to the corresponding technical requirement. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard.

   The licensee may use an engineering evaluation to demonstrate that changes to certain NFPA 805, Chapter 3, elements are acceptable, because the alternative is "adequate for the hazard." Prior NRC review and approval would not be required for alternatives to four specific sections of NFPA 805, Chapter 3, for which an engineering evaluation demonstrates that the alternative to the Chapter 3 element is adequate for the hazard. A qualified fire protection engineer shall perform the engineering evaluation and conclude that the change has not affected the functionality of the component, system, procedure, or physical arrangement, using a relevant technical requirement or standard. The four specific sections of NFPA 805, Chapter 3, are as follows:

   - "Fire Alarm and Detection Systems" (Section 3.8);
   - "Automatic and Manual Water-Based Fire Suppression Systems" (Section 3.9);
   - "Gaseous Fire Suppression Systems" (Section 3.10); and
   - "Passive Fire Protection Features" (Section 3.11).

   This License Condition does not apply to any demonstration of equivalency under Section 1.7 of NFPA 805.

   b) Fire Protection Program Changes that Have No More than Minimal Risk Impact

   Prior NRC review and approval is not required for changes to the licensee's fire protection program that have been demonstrated to have no more than minimal risk impact. The licensee may use its screening process as approved in the NRC SE dated February 3, 2017 to determine that certain fire protection program changes meet the minimal criterion.

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The licensee shall ensure that fire protection defense-in-depth and safety margins are maintained when changes are made to the fire protection program.

3. Transition License Conditions

a) Before achieving full compliance with 10 CFR 50.48(c), as specified by 3.b) and 3.c) below, risk-informed changes to the licensee's fire protection program may not be made without prior NRC review and approval unless the change has been demonstrated to have no more than a minimal risk impact, as described in 2.b) above.

b) The licensee shall implement the modifications described in Attachment S, Table S-2, "Plant Modifications Committed," of Duke Energy letter dated May 25, 2016, by the end of the unit refueling outage currently scheduled for September/October 2020 (R232). The licensee shall maintain appropriate compensatory measures in place until completion of the modifications delineated above.

c) The licensee shall implement the items as listed in Attachment S, Table S-3, "Implementation Items," of Duke Energy letters dated May 25, 2016, and October 5, 2016, within 365 days after receipt of the safety evaluation/license amendment with the exception of implementation items S-3.11, 12, and 14, which are associated with modifications and will be completed after all procedure updates, modifications and training are complete.

F. Physical Protection and Cyber Security

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved physical security, training and qualification, and safeguards contingency plans including amendments made pursuant to provisions of the Miscellaneous Amendments and Search Requirements revisions to 10 CFR 73.55 (51 FR 27817 and 27822) and the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The combined set of plans, which contains Safeguards Information protected under 10 CFR 73.21, is entitled: "H. B. Robinson Steam Electric Plant Security, Training and Qualification, and Safeguards Contingency Plan, Revision 0" submitted by letter dated October 1, 2004, as supplemented by letter dated October 20, 2004.

The licensee shall fully implement and maintain in effect all provisions of the Commission-approved cyber security plan (CSP), including changes made pursuant to the authority of 10 CFR 50.90 and 10 CFR 50.54(p). The licensee's CSP was approved by License Amendment No. 226, as supplemented by changes approved by License Amendment Nos. 230 and 239.

G. The following programs shall be implemented and maintained by the licensee:

(1) DELETED

(2) DELETED

(3) A program to determine the airborne iodine concentration in vital areas under accident conditions. This program shall include: training of personnel, procedures for monitoring, and provisions for maintenance of sampling and analysis equipment.

(4) DELETED

H. DELETED

I. DELETED

J. DELETED

K. Updated Final Safety Analysis Report

The Carolina Power & Light Company* Updated Final Safety Analysis Report supplement, submitted pursuant to 10 CFR 54.21(d), describes certain future activities to be completed prior to the period of extended operation. The Carolina Power & Light Company* shall complete these activities no later than July 31, 2010, and shall notify the NRC in writing when implementation of these activities is complete and can be verified by NRC inspection.

The Updated Final Safety Analysis Report supplement, as revised, shall be included in the next scheduled update to the Updated Final Safety Analysis Report required by 10 CFR 50.71(e)(4) following issuance of this renewed license. Until that update is complete, the Carolina Power & Light Company* may make changes to the programs and activities described in the supplement without prior Commission approval, provided that the Carolina Power & Light Company* evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

* On April 29, 2013, the name Carolina Power & Light Company (CP&L) was changed to Duke Energy Progress, Inc. On August 1, 2015, the name “Duke Energy Progress, Inc.” was changed to “Duke Energy Progress, LLC.”

On January 1, 2027, the name "Duke Energy Progress, LLC" was changed to "Duke Energy Carolinas, LLC."

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L. Reactor Vessel Surveillance

All capsules in the reactor vessel that are removed and tested must meet the test procedures and reporting requirements of ASTM E 185-82 to the extent practicable for the configuration of the specimens in the capsule. Any changes to the capsule withdrawal schedule, including spare capsules, must be approved by the NRC prior to implementation. All capsules placed in storage must be maintained for future insertion. Any changes to storage requirements must be approved by the NRC.

M. Mitigation Strategy License Condition

The licensee shall develop and maintain strategies for addressing large fires and explosions and that include the following key areas:

(1) Fire fighting response strategy with the following elements:
   a. Pre-defined coordinated fire response strategy and guidance
   b. Assessment of mutual aid fire fighting assets
   c. Designated staging areas for equipment and materials
   d. Command and control
   e. Training of response personnel

(2) Operations to mitigate fuel damage considering the following:
   a. Protection and use of personnel assets
   b. Communications
   c. Minimizing fire spread
   d. Procedures for implementing integrated fire response strategy
   e. Identification of readily-available pre-staged equipment
   f. Training on integrated fire response strategy
   g. Spent fuel pool mitigation measures

(3) Actions to minimize release to include consideration of:
   a. Water spray scrubbing
   b. Dose to onsite responders

4. Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 266, are hereby incorporated into this license. Duke Energy ~~Progress~~, LLC. shall operate the facility in accordance with the additional conditions.

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5. This renewed license is effective as of the date of issuance and shall expire at midnight on July 31, 2030.

FOR THE NUCLEAR REGULATORY COMMISSION

**ORIGINAL SIGNED BY**
**J. E. DYER**

J. E. Dyer, Director
Office of Nuclear Reactor Regulation

Attachments: 1. Appendix A - Technical Specifications
2. Appendix B - Additional Conditions

Date of Issuance: April 19, 2004

APPENDIX A

TO

THE RENEWED FACILITY OPERATING LICENSE DPR-23

TECHNICAL SPECIFICATIONS

FOR

H. B. ROBINSON STEAM ELECTRIC PLANT

UNIT NO. 2

CAROLINAS

DUKE ENERGY ~~PROGRESS~~, LLC.

DARLINGTON COUNTY, S.C.

DOCKET NO. 50-261

APPENDIX B

ADDITIONAL CONDITIONS
FACILITY OPERATING LICENSE NO. DPR-23

Carolinas

Duke Energy ~~Progress~~, LLC. (the term licensee in Appendix B refers to Duke Energy ~~Progress~~, LLC.) shall comply with the following conditions on the schedules noted below:

| Amendment Number | Additional Conditions | Implementation Date |
|---|---|---|
| 176 | The licensee is authorized to relocate certain requirements included in Appendix A and the former Appendix B to licensee-controlled documents. Implementation of this amendment shall include the relocation of these requirements to the appropriate documents, as described in the licensee's letters dated September 10, 1997, and October 13, 1997, evaluated in the NRC staff's Safety Evaluation enclosed with this amendment. | This amendment is effective immediately and shall be implemented within 90 days of the date of this amendment. |
| 219 | Upon implementation of the amendment adopting TSTF–448, Revision 3, the determination of control room envelope (CRE) unfiltered air inleakage as required by TS 5.5.17.c.(i), the assessment of CRE habitability as required by TS 5.5.17.c.(ii), and the measurement of CRE pressure as required by TS 5.5.17.d, shall be considered met. Following implementation:<br><br>(a) The first performance of TS 5.5.17.c.(i), shall be within the specified Frequency of 6 years, plus the 18-month allowance of SR 3.0.2, as measured from January 27,2003, the | This amendment is effective immediately and shall be implemented as specified |

**ATTACHMENT 4**

**H.B. ROBINSON STEAM ELECTRIC PLANT**

**MARKED CHANGES TO CURRENT INDEPENDENT SPENT FUEL STORAGE INSTALLATION MATERIALS LICENSE SNM-2502**

**4 PAGES PLUS THE COVER**

NRC FORM 588
(10-2000)
10 CFR 72

U. S. NUCLEAR REGULATORY COMMISSION



# LICENSE FOR INDEPENDENT STORAGE OF SPENT NUCLEAR FUEL AND HIGH-LEVEL RADIOACTIVE WASTE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Part 72, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, and possess the power reactor spent fuel and other radioactive materials associated with spent fuel storage designated below; to use such material for the purpose(s) and at the place(s) designated below; and to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified herein.

| | | |
|---|---|---|
| Licensee<br>1. Duke Energy ~~Progress~~, LLC.<br>Carolinas | 3. License No. | SNM-2502 |
| | Amendment No. | ~~3~~ |
| 2. H.B. Robinson Steam Electric Plant, Unit No. 2<br>Independent Spent Fuel Storage Installation<br>3581 West Entrance Road<br>Hartsville, SC 29550 | 4. Expiration Date | August 31, 2046 |
| | 5. Docket or Reference No. | 72-3 |

| 6. Byproduct, Source, and/or Special Nuclear Material | 7. Chemical or Physical Form | 8. Maximum Amount That Licensee May Possess at Any One Time Under This License |
|---|---|---|
| A. Spent fuel assemblies from H.B. Robinson Unit 2 reactor using natural water for cooling and enriched not greater than 3.5 percent U-235 and associated radioactive materials related to receipt, storage, and transfer of the fuel assemblies | A. As $UO_2$ clad with zirconium or zirconium alloys | A. 25.70 MTU of spent fuel assemblies |

9. Authorized Use:

The material identified in 6.A and 7A above is authorized for receipt, possession, storage, and transfer.

For use in accordance with the conditions of this license and the attached Technical Specifications. The basis for this license was submitted in the Safety Analysis Report application dated February 4, 1985, as supplemented on March 10, April 3, April 22, May 21, July 10, July 22, and October 31, 1986; January 2, February 17, November 25, August 11, September 9, and December 16, 1988; January 9, January 11, February 1, April 28, June 2, and June 29, 1989; November 1, 1993; January 11 and March 26, 1999; August 28, 2000; September 3, 2003, and February 27, 2004.

APPENDIX A

CAROLINAS

DUKE ENERGY ~~PROGRESS~~, LLC

H. B. ROBINSON

INDEPENDENT SPENT

FUEL STORAGE INSTALLATION

TECHNICAL SPECIFICATIONS FOR

MATERIALS LICENSE SNM-2502

Carolinas

## 6.0 MONITORING

Monitoring equipment may be installed in some or all DSCs & HSMs according to the manufacturer's and the Duke Energy ~~Progress~~, LLC, engineering department's recommendations. This equipment may include thermocouples. These devices do not perform a safety function and are not needed to ensure the proper operation of the ISFSI. However, they may be installed to provide an extra level of assurance in view of the limited experience available with this method of fuel storage at the time of this application.

This section provides proposed commitments to ensure that these instruments, although not important to safety, perform their intended functions.

### 6.1 THERMOCOUPLES

#### 6.1.1 Specification

a. Thermocouples will be functionally checked before placement in storage per manufacturer's recommendations.

b. The DSC thermocouples will be connected to an external cable by means of a specially designed feed-through. This feed-through incorporates the redundant seal philosophy used in the DSC containment design. Details are shown in Drawings HBR2-10671, Sheets 1 and 2, and HBR2-10680. After the penetration plug assembly has been welded to the bottom of the DSC cover plate, a sleeve will be welded over the plug, forming a redundant seal. Thermocouple sheaths will likewise be brazed to the plug assembly at inner and outer surfaces of the penetrations. To preclude possible leakage through the aluminum oxide insulation, each end of the sheathed thermocouples will be sealed with an environmentally qualified resin. A leakage test will be performed (standard He leak rate $=10^{-5}$ atm-cc/s) on the sealed DSC prior to loading operations.

c. HSM instrumentation will consist of thermocouples cast in place in the concrete and others attached to the surface and at various locations on the heat shield. Details of the HSM instrumentation are shown on drawings HBR2-10607 and HBR2-10608.

#### 6.1.2 Basis

Emplacement of monitoring equipment must not compromise the design integrity of the DSC or HSM.

APPENDIX B

CAROLINAS

DUKE ENERGY ~~PROGRESS~~, LLC

H. B. ROBINSON

INDEPENDENT SPENT FUEL STORAGE INSTALLATION

SAFEGUARDS LICENSE CONDITION FOR

MATERIALS LICENSE NO. SNM-2502