



Progress Energy

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OCT 18 2004

SERIAL: BSEP 04-0006

10 CFR 54

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

Subject: Brunswick Steam Electric Plant, Unit Nos. 1 and 2
Docket Nos. 50-325 and 50-324/License Nos. DPR-71 and DPR-62
Application for Renewal of Operating Licenses

Ladies and Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50, 51 and 54, Carolina Power & Light Company, now doing business as Progress Energy Carolinas, Inc. (PEC), requests the renewal of the operating licenses for the Brunswick Steam Electric Plant (BSEP), Unit Nos. 1 and 2, to extend the terms of their operating licenses an additional 20 years beyond the current expiration dates. Upon renewal in accordance with this request, the terms of the operating licenses would be extended from midnight September 8, 2016, until midnight September 8, 2036, for Unit 1, and from midnight December 27, 2014, until midnight December 27, 2034, for Unit 2.

The enclosed BSEP License Renewal Application contains the information required by 10 CFR Part 54 for filing an application and the application meets the timeliness requirements of 10 CFR 54.17(c) and 10 CFR 2.109(b). The content of this application is consistent with guidance provided in Regulatory Guide 1.188, "Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses," dated July 2001; and the format is compatible with the Nuclear Energy Institute "Class of 2003" Standard License Renewal Application Format.

As required by 10 CFR 54.21(b), current licensing basis changes, which have a material effect on the content of this application, will be identified at least annually while the application is under review by the NRC and at least three months prior to the scheduled completion of the NRC review by providing an amendment to the application.

Enclosure 1 provides a summary list of regulatory commitments made in this application.

Enclosure 2 provides a single compact disc (CD), formatted in a manner that is consistent with "Guidance for Electronic Submissions to the Commission," published in the *Federal Register* on October 10, 2003 (i.e., 68 FR 58826). This CD contains the following files, suitable for entry into the NRC's record retrieval system, ADAMS.

P.O. Box 10429
Southport, NC 28461

T > 910.457.3698
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ALL
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List of Electronic Files		
File Name	Approximate File Size	Access
001_BSEP_LR_Application.pdf	8261 Kb	Publicly Available
002_Brunswick_ER_Supplement.pdf	17722 Kb	Publicly Available

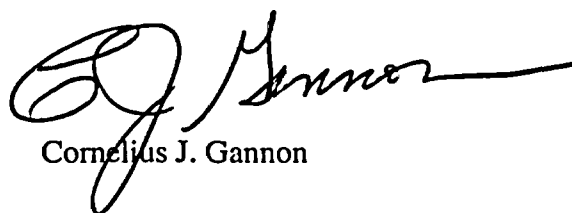
As required by the Federal Coastal Zone Protection Act (i.e., 16 USC 1456(c)(3)(A)), certification that continued operation of BSEP will be in compliance with the North Carolina Coastal Management Program will be provided to North Carolina Division of Coastal Management. This certification is Appendix E of the Environmental Report.

To facilitate NRC review, the following information-only items are also provided:

- eighty (80) CDs containing the BSEP License Renewal Application, including the supporting Environmental Report, in electronic format,
- one (1) CD, with the BSEP License Renewal Application and the supporting Environmental Report provided in electronic file formats suitable for posting on the NRC's web page, and
- four (4) paper copies of the BSEP License Renewal Application and the supporting Environmental Report (i.e., three (3) copies sent to NRR and one (1) copy sent to Region II).

Please refer any questions regarding this submittal to Mr. Mike Heath, Supervisor - License Renewal, at (910) 457-3487.

Sincerely,



Cornelius J. Gannon

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Enclosures:

1. List of Regulatory Commitments
2. BSEP License Renewal Application (CD-ROM)

Cornelius J. Gannon, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, and agents of Carolina Power & Light Company.

Dean S. Mash
Notary (Seal)



My commission expires: May 23, 2009

cc:

U. S. Nuclear Regulatory Commission, Region II
ATTN: Dr. William D. Travers, Regional Administrator
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW, Suite 23T85
Atlanta, GA 30303-8931
(w/Enclosure 1 and one information-only paper copy of the BSEP License Renewal Application)

U. S. Nuclear Regulatory Commission
ATTN: Mr. S. K. Mitra (Mail Stop OWFN 11F1)
11555 Rockville Pike
Rockville, MD 20852-2738
(w/Enclosure 1, three information-only paper copies of the BSEP License Renewal Application, and 81 information-only CDs)

U. S. Nuclear Regulatory Commission
ATTN: Mr. Richard L. Emch (Mail Stop OWFN 11F1)
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(w/Enclosure 1 only)

U. S. Nuclear Regulatory Commission
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U. S. Nuclear Regulatory Commission **(Electronic Copy Only)**
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Ms. Jo A. Sanford
Chair - North Carolina Utilities Commission
P.O. Box 29510
Raleigh, NC 27626-0510
(w/o Enclosures)

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Quality Assurance (QA)	A.1.1	Prior to the period of extended operation, the elements of corrective action, confirmation process, and administrative controls in the BSEP QA Program will be applied to required aging management activities for both safety related and non-safety related structures and components subject to aging management review.
Flow-Accelerated Corrosion (FAC) Program	A.1.1.5	Prior to the period of extended operation, the BSEP FAC susceptibility analyses will be updated to include additional components potentially susceptible to FAC.
Bolting Integrity Program	A.1.1.6	Prior to the period of extended operation, a precautionary note will be added to plant bolting guidelines to limit the sulfur content of compounds used on bolted connections.
Open-Cycle Cooling Water System Program	A.1.1.7	Prior to the period of extended operation, the Open-Cycle Cooling Water System Program will be enhanced to require that: (1) Program scope include portions of the Service Water (SW) System credited in the Aging Management Review, including non-safety related piping, (2) the Residual Heat Removal (RHR) Heat Exchangers will be subject to eddy current testing with results compared to previous testing to evaluate degradation and aging, (3) A representative sampling of SW Pump casings be inspected, (4) Program procedures be enhanced to include verification of cooling flow and heat transfer effectiveness of SW Pump Oil Cooling Coils, inspections associated with SW flow to the Diesel Generators (including inspection of expansion joints), and inspection and replacement criteria for RHR Seal Coolers, and (5) Piping inspections will include locations where throttling or changes in flow direction might result in erosion of copper-nickel piping.
Closed-Cycle Cooling Water System Program	A.1.1.8	Prior to the period of extended operation, Closed-Cycle Cooling Water System Program activities will be enhanced to assure that preventive maintenance activities include inspections of Diesel Generator (DG) combustion air intercoolers and heat exchangers.
Inspection of Overhead Heavy Load and Light Load Handling	A.1.1.9	Administrative controls for the Program will be enhanced, prior to the period of extended operation to: (1) include in the Program all cranes/platforms within the scope of License Renewal, (2) specify an annual inspection frequency for the Reactor Building Bridge Cranes and the Intake Structure Gantry Crane, and every fuel cycle for the Refuel Platforms, (3) allow use of maintenance crane inspections as input for the condition monitoring of License Renewal cranes, (4) require maintenance inspection reports to be forwarded to the responsible engineer, and (5) include inspection of structural component corrosion and monitoring crane rails for abnormal wear.

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Fire Water System Program	A.1.1.11	Prior to the period of extended operation, Fire Water System Program administrative controls will be enhanced to require assessing results from the initial 40-year service life tests and inspections to determine whether a representative sample of such results has been collected and whether expansion of scope and use of alternate test/inspection methods are warranted.
Aboveground Carbon Steel Tanks Program	A.1.1.12	The Aboveground Carbon Steel Tanks Program is a new aging management program that will be implemented prior to the period of extended operation.
Fuel Oil Chemistry Program	A.1.1.13	Prior to the period of extended operation: (1) Fuel Oil Chemistry Program administrative controls will be enhanced to add a requirement to trend data for water and particulates, (2) the condition of the in-scope fuel oil tanks will be verified by means of thickness measurements under the One-Time Inspection Program, and (3) an internal inspection of the Main Fuel Oil Storage Tank will be performed under the One-Time Inspection Program.
Reactor Vessel Surveillance Program	A.1.1.14	The Reactor Vessel Surveillance Program will be enhanced to ensure that any additional requirements that result from the NRC review of Boiling Water Reactor Vessel Internals Program (BWRVIP)-116 are addressed prior to the period of extended operation.
One-Time Inspection Program	A.1.1.15	This is a new aging management program that requires procedural controls for implementation and tracking of One-Time Inspection Program activities. The One-Time Inspection Program will be implemented prior to the period of extended operation.
Selective Leaching of Materials Program	A.1.1.16	The Selective Leaching of Materials Program is a new aging management program that requires a sample population of susceptible components to be selected for inspection. The Selective Leaching of Materials Program will be implemented prior to the period of extended operation.

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Buried Piping and Tanks Inspection Program	A.1.1.17	The Buried Piping and Tanks Inspection Program is a new aging management program that will be implemented prior to the period of extended operation and will include procedural requirements to: (1) ensure an appropriate as-found pipe coating and material condition inspection is performed whenever buried piping within the scope of the Buried Piping and Tanks Inspection Program is exposed, (2) add precautions concerning excavation and use of backfill to the excavation procedure to include precautions for License Renewal piping, (3) add a requirement that coating inspection shall be performed by qualified personnel to assess its condition, and (4) add a requirement that a coating engineer or other qualified individual should assist in evaluation of any coating degradation noted during the inspection.
ASME Section XI, Subsection IWF Program	A.1.1.20	Prior to the period of extended operation, the ASME Section XI, Subsection IWF Program will be enhanced to include the torus vent system supports within the scope of the Program.
Masonry Wall Program	A.1.1.22	Prior to the period of extended operation, the administrative controls for the Masonry Wall Program will be enhanced to require inspecting all accessible surfaces of the walls for evidence of cracking.
Structures Monitoring Program	A.1.1.23	Prior to the period of extended operation, the Structures Monitoring Program will be enhanced to: (1) identify License Renewal systems managed by the Program and inspection boundaries between structures and systems, (2) require notification of the responsible engineer regarding availability of exposed below-grade concrete for inspection and require that an inspection be performed, (3) identify specific license renewal commodities and inspection attributes, (4) require responsible engineer review of groundwater monitoring results, (5) specify that an increase in sample size for component supports shall be implemented (rather than should be) commensurate with the degradation mechanisms found, and (6) improve training of system engineers in condition monitoring of structures.

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Protective Coating Monitoring and Maintenance Program	A.1.1.24	Prior to the period of extended operation, the Protective Coating Monitoring and Maintenance Program administrative controls will be enhanced to: (1) add a requirement for a walk-through, general inspection of containment areas during each refueling outage, including all accessible pressure-boundary coatings not inspected under the ASME Section XI, Subsection IWE Program, (2) add a requirement for a detailed, focused inspection of areas noted as deficient during the general inspection, (3) assure that the qualification requirements for persons evaluating coatings are consistent among the Service Level I coating specifications, inspection procedures, and application procedures, and meet the requirements of ANSI N 101.4, "Quality Assurance for Protective Coatings Applied to Nuclear Facilities," and (4) document the results of inspections and compare the results to previous inspection results and to acceptance criteria.
Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program	A.1.1.25	The Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program is a new aging management program that will be implemented prior to the period of extended operation.
Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits Program	A.1.1.26	The Electrical Cables and Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Used in Instrumentation Circuits Program is a new aging management program that will be implemented prior to the period of extended operation.
Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program	A.1.1.27	The Inaccessible Medium Voltage Cables Not Subject to 10 CFR 50.49 Environmental Qualification Requirements Program is a new aging management program that will be implemented prior to the period of extended operation.

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Reactor Coolant Pressure Boundary (RCPB) Fatigue Monitoring Program	A.1.1.28	Prior to the period of extended operation, the RCPB Fatigue Monitoring Program will be enhanced to: (1) expand the Program scope to include an evaluation of each RCPB component beyond the Reactor Pressure Vessel, including each NUREG/CR-6260 location, (2) provide preventive action requirements including requirement for trending and consideration of operational changes to reduce the number or severity of transients affecting a component, (3) include a requirement to reassess the locations that are monitored considering the RCPB locations that were added to the Program scope, (4) specify the selection criterion to be locations with a 60-year Cumulative Usage Factor value (including environmental effects where applicable) of 0.5 or greater, (5) address corrective actions for components approaching limits, with options to include a revised fatigue analysis, repair or replacement of the component, or in-service inspection of the component (with prior NRC approval), and (6) address criteria for increasing sample size for monitoring if a limiting location is determined to be approaching the design limit.
Reactor Vessel and Internals Structural Integrity Program	A.1.1.30	Prior to the period of extended operation, the Reactor Vessel and Internals Structural Integrity Program will be enhanced to: (1) incorporate augmented inspections of the top guide using enhanced visual examination that will focus on the high fluence region and (2) establish inspection criteria for the VT-3 examination of the Core Shroud Repair Brackets.
Systems Monitoring Program	A.1.1.31	Prior to the period of extended operation, a procedure will be developed to implement: (1) inspection of in-scope License Renewal components for identified aging effects, (2) guidelines for establishing inspection frequency requirements, (3) listing of inspection criteria in checklist form, (4) recording of extent of condition during system walkdowns and (5) addressing of appropriate corrective action(s) for degradations discovered.
Preventive Maintenance (PM) Program	A.1.1.32	Prior to the period of extended operation, preventive maintenance activities will be incorporated into the PM Program, as needed, to satisfy aging management reviews of components that rely on the PM Program for management of aging effects.
Phase Bus Aging Management Program	A.1.1.33	The Phase Bus Aging Management Program is a new aging management program that will be implemented prior to the period of extended operation.

Brunswick Steam Electric Plant (BSEP) License Renewal Commitments		
License Renewal Commitment Subject	LRA, Appendix A, Section	Scope of Commitment
Fuel Pool Girder Tendon Inspection Program	A.1.1.34	Prior to the period of extended operation, the Fuel Pool Girder Tendon Inspection Program will be enhanced to: (1) specify inspection frequencies, numbers of tendons to be inspected, and requirements for expansion of sample size, (2) identify test requirements and acceptance criteria for tendon lift-off forces, measurement of tendon elongation, and determination of ultimate strength, (3) specify inspections for tendons, tendon anchor assemblies, surrounding concrete, and grease, (4) require prestress values to be trended and compared to projected values, and (5) identify acceptable corrective actions for tendons that fail to meet testing criteria.
Time Limited Aging Analysis (TLAA) – Core Plate Plug Spring Stress Relaxation	A.1.2.1.7 A.1.1.30	Management of Core Plate Plug Spring Stress Relaxation will be performed by means of the Reactor Vessel and Internals Structural Integrity Program.
TLAA – Fuel Pool Girder Tendon Loss of Prestress	A.1.2.6 A.1.1.34	Prior to the period of extended operation, a Fuel Pool Girder Tendon Inspection Program will be implemented to assure design basis anchor forces required for the tendons to perform their intended function will continue to be maintained.
TLAA – Torus Component Corrosion Allowance	A.1.2.8 A.1.1.15	Prior to the period of extended operation, measurements are planned, using the One-Time Inspection Program, to verify by volumetric measurements the actual rate of corrosion of the supports and platform steel in the Torus.

BSEP 04-0006
Enclosure 2

BSEP License Renewal Application
(CD-ROM)