



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

DUKE ENERGY CAROLINAS, LLC

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

RENEWED FACILITY OPERATING LICENSE

Renewed License No. NPF-52

1. The U.S. Nuclear Regulatory Commission (Commission), having previously made the findings set forth in License No. NPF-52 issued on May 15, 1986, has now found that:
 - A. The application for renewed operating license filed by the Duke Energy Corporation* acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (the licensees) 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. 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 operating license will continue to be conducted in accordance with the current licensing basis, as defined in 10 CFR 54.3, for Catawba Nuclear Station, Unit 2 (facility or plant) 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 regulations of the Commission (except as exempted from compliance in Section 2.D. below);
 - D. 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 Commission's regulations set forth in 10 CFR Chapter I (except as exempted from compliance in Section 2.D. below);

* Duke Energy Corporation converted to Duke Power Company LLC on April 3, 2006 and was re-named Duke Energy Carolinas, LLC as of October 1, 2006. References to "Duke" are to Duke Energy Carolinas, LLC, which is the operator of Catawba Nuclear Station, Unit 2, and one of the "licensees."

- E. Duke Energy Carolinas, LLC* is technically qualified to engage in the activities authorized by this renewed operating license in accordance with the Commission's regulations set forth in 10 CFR Chapter I;
 - F. The licensees have satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;
 - G. 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;
 - H. 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-52 is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied, and;
 - I. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this renewed operating 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 July 26, 1985, and the November 21, 1985, affirmations by the Atomic Safety and Licensing Appeal Board of the Partial Initial Decisions issued by the Atomic Safety and Licensing Boards dated June 22, September 18, and November 27, 1984, regarding this facility and satisfaction of conditions therein imposed, and pursuant to approval by the Nuclear Regulatory Commission at a meeting held on May 14, 1986, Facility Operating License No. NPF-48, issued on February 24, 1986, superseded by Facility Operating License No. NPF-52 issued on May 15, 1986, is superseded by Renewed Facility Operating License No. NPF-52, hereby issued to Duke Energy Carolinas, LLC, the North Carolina Municipal Power Agency No. 1, and Piedmont Municipal Power Agency to read as follows:
- A. This renewed operating license applies to the Catawba Nuclear Station, Unit 2, a pressurized water reactor and associated equipment (the facility) owned by the North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency and operated by Duke Energy Carolinas, LLC. The facility is located on the licensees' site in York County, South Carolina, on the shore of Lake Wylie approximately 6 miles north of Rock Hill, South Carolina, and is described in the Final Safety Analysis Report, as supplemented and amended, and in the Environmental Report, as supplemented and amended;
 - B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses:

*Duke Energy Carolinas, LLC is authorized to act as agent for the North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency, and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

- (1) Duke Energy Carolinas, LLC, pursuant to Section 103 of the Act and 10 CFR Part 50, to possess, use, and operate the facility at the designated location in York County, South Carolina, in accordance with the procedures and limitations set forth in this renewed operating license;
 - (2) North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency, pursuant to the Act and 10 CFR Part 50, to possess the facility at the designated location in York County, South Carolina, in accordance with the procedures and limitations set forth in this renewed operating license;
 - (3) Duke Energy Carolinas, LLC, 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;
 - (4) Duke Energy Carolinas, LLC, 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;
 - (5) Duke Energy Carolinas, LLC, 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 calibration or associated with radioactive apparatus or components;
 - (6) Duke Energy Carolinas, LLC, pursuant to the Act and 10 CFR Parts 30, 40 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility authorized herein; and
 - (7) Duke Energy Carolinas, LLC, pursuant to the Act and 10 CFR Parts 30, 40, and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of McGuire Nuclear Station, Units 1 and 2, and Oconee Nuclear Station, Units 1, 2, and 3.
- C. This renewed operating 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

Duke Energy Carolinas, LLC is authorized to operate the facility at a reactor core full steady state power level of 3411 megawatts thermal (100%) in accordance with the conditions specified herein.

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 317, which are attached hereto, are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Technical Specifications.

(3) Updated Final Safety Analysis Report

The Updated Final Safety Analysis Report supplement submitted pursuant to 10 CFR 54.21(d), as revised on December 16, 2002, describes certain future activities to be completed before the period of extended operation. Duke shall complete these activities no later than December 6, 2024, 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 on December 16, 2002, described above, 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 operating license. Until that update is complete, Duke may make changes to the programs described in such supplement without prior Commission approval, provided that Duke evaluates each such change pursuant to the criteria set forth in 10 CFR 50.59 and otherwise complies with the requirements in that section.

(4) Antitrust Conditions

Duke Energy Carolinas, LLC shall comply with the antitrust conditions delineated in Appendix C to this renewed operating license.

(5) Fire Protection Program

Duke Energy Carolinas, LLC shall implement and maintain in effect all provisions of the approved fire protection program that complies with 10 CFR 50.48(a) and 10 CFR 50.48(c), as specified in the licensee amendment request dated September 25, 2013; as supplemented by letters dated January 13, 2015; January 28, 2015; February 27, 2015; March 30, 2015; April 28, 2015; July 15, 2015; August 14, 2015; September 3, 2015; December 11, 2015; January 7, 2016; March 23, 2016; June 15, 2016; August 2, 2016; September 7, 2016; and, January 26, 2017, as approved in the SE dated February 8, 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.

(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 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 CNS.

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; and
- 2) Prior NRC review and approval is not required for individual changes that result in a risk increase less than 1×10^{-7} /year (yr) for CDF and less than 1×10^{-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 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 SE dated February 8, 2017, 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) and 3), below, risk-informed changes to the Duke Energy Carolinas, LLC 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-2, “Plant Modifications Committed,” Attachment S, of the Duke Energy Carolinas, LLC letter CNS-17-004, dated January 26, 2017, to complete the transition to full compliance with 10 CFR 50.48(c) by December 31, 2017. The licensee shall maintain appropriate compensatory measures in accordance with its procedures until completion of these modifications.
- 3) The licensee shall complete the implementation items as listed in Table S-3, “Implementation Items,” Attachment S, of the Duke Energy Carolinas, LLC letter CNS-17-004, dated January 26, 2017, within 180 days after issuance of the Safety Evaluation unless that falls within a scheduled outage window,

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then the completion of implementation items will occur 60 days after startup from the scheduled outage. Implementation Item 13 is associated with modifications and will be completed 180 days after modifications are complete.

(6) Mitigation Strategies

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

(7) Additional Conditions

The Additional Conditions contained in Appendix B, as revised through Amendment No. 300 are hereby incorporated into this renewed operating license. Duke Energy Carolinas, LLC shall operate the facility in accordance with the Additional Conditions.

- D. The facility requires exemptions from certain requirements of Appendix J to 10 CFR Part 50, as delineated below and pursuant to evaluations contained in the referenced SER and SSER. These include, (a) partial exemption from the requirement of paragraph III.D.2(b)(i) of Appendix J, the testing of containment airlocks at times when the containment integrity is not required (Section 6.2.6 of the SER and SSERs #5), (b) exemption from the requirement of paragraph III.A.(d) of Appendix J, insofar as it requires the venting and draining of lines for type A tests (Section 6.2.6 of SSER #5), and (c) partial exemption from the requirements of paragraph III.B of Appendix J, as it relates to bellows testing (Section 6.2.6 of the SER and SSER #5). These exemptions are authorized by law, will not present an undue risk to the public health and safety, are consistent with the common defense and security, and are consistent with certain special circumstances, as discussed in the reference SER and SSER. These exemptions are, therefore, hereby granted pursuant to 10 CFR 50.12. With the granting of these exemptions, the facility will operate, to the extent authorized herein, in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission.

E. Physical Protection

Duke Energy Carolinas, LLC 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 combined set of plans, which contains safeguards information protected under 10 CFR 73.21, is entitled: "Duke Energy Physical Security Plan," Revision 8 submitted by letter dated May 17, 2007.

Duke Energy Carolinas, LLC 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 Duke Energy Carolinas, LLC CSP was approved by License Amendment No. 262, as supplemented by a change approved by License Amendment No. 272.

F. Reporting to the Commission Deleted by Amendment No. 226

G. The licensees 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.

3. This renewed license is effective as of the date of issuance and shall expire at midnight on December 5, 2043.

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
3. Appendix C – Antitrust Conditions

Date of Issuance: December 5, 2003

Appendix A: Technical Specifications

Catawba 2 uses the same Appendix A as Catawba 1. Please refer to Catawba 1 for Appendix A (ML052990150).

APPENDIX B

ADDITIONAL CONDITIONS

FACILITY OPERATING LICENSE NO. NPF-52

Duke Energy Carolinas, LLC shall comply with the following conditions on the schedules noted below:

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
151	This amendment requires the licensee to use administrative controls, as described in the licensee's letter of March 7, 1997, and evaluated in the staff's safety evaluation dated April 29, 1997, to restrict the dose-equivalent iodine levels to 0.46 microCurie per gram (in lieu of the limit in TS Section 3.4.16.a), and to 26 microCurie per gram (in lieu of the limit of TS Figure 3.4.16-1), until this license condition is removed by a future amendment.	Immediately upon issuance of the amendment.
165	The licensee is authorized to relocate certain requirements included in appendix A 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 May 27, 1997, as amended by letters dated March 9, March 20, April 20, June 3, June 24, July 7, July 21, August 5, September 8, and September 15, 1998, and evaluated in the NRC staff's Safety Evaluation associated with this amendment.	All relocation to be completed by January 31, 1999.

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
165	The schedule for the performance of new and revised surveillance requirements shall be as follows: For surveillance requirements (SRs) that are new in Amendment No. 165 the first performance is due at the end of the first surveillance interval that begins at implementation of Amendment No. 165. For SRs that existing prior to Amendment No. 165, including SRs with modified acceptance criteria and SRs who intervals of performance are 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 No. 165. For SRs that existed prior to Amendment No. 165, whose intervals of performance are being reduced, the first reduced surveillance interval begins upon completion of the first surveillance performed after implementation of Amendment No. 165	By January 31, 1999
244	For steam generator (SG) integrity assessments, the ratio of 2.5 will be used in completion of both the Condition Monitoring (CM) and the Operational Assessment (OA) upon implementation of the Interim Alternate Repair Criterion (IARC). For example, for the CM assessment, the component of leakage from the lower 4 inches of the most limiting SG during the prior cycle of operation will be multiplied by a factor of 2.5 and added to the total leakage from any other source and compared to the allowable accident analysis leakage assumption. For the OA, the difference in leakage from the allowable limit during the limiting design basis accident minus the leakage from the other sources will be divided by 2.5 and compared to the observed leakage. An administrative limit will be established to not exceed the calculated value.	Prior to any entry into Mode 4 during Cycle 17 operation

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
245	Upon implementation of the Amendment adopting TSTF-448, Rev. 3, the determination of CRE unfiltered air inleakage as required by SR 3.7.10.4, in accordance with Technical Specification 5.5.16.c(i), the assessment of CRE habitability as required by Technical Specification 5.5.16.c(ii), and the measurement of CRE pressure as required by Technical Specification 5.5.16.d, shall be met. Following implementation: (a) The first performance of SR 3.7.10.4 in accordance with Technical Specification 5.5.16.c(i) shall be within the specified Frequency of 6 years, plus the 18 month allowance of SR 3.0.2, as measured from November 12, 2002, the date of the most recent successful tracer gas test, as stated in the December 9, 2003 letter response to Generic Letter (GL) 2003-01, or within the next 18 months if the time period since the most recent successful tracer gas test is greater than 6 years. (b) The first performance of the periodic assessment of CRE habitability, Technical Specification 5.5.16.c(ii), shall be within 3 years, plus the 9 month allowance of SR 3.0.2 as measured from November 12, 2002, the date of the most recent successful tracer gas test, as stated in the December 9, 2003 letter response to GL 2003-01, 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, Technical Specification 5.5.16.d, shall be within 18 months, plus the 138 days allowed by SR 3.0.2, as measured from September 1, 2007, the date of the most recent successful pressure measurement test, or within 138 days if not performed previously.	Within 60 days of date of amendment

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
296	The plant engineering process will be utilized to develop new plant procedures and required training to support the Single Pond Return Header alignment and new operator actions credited in the PRA. Human Error Probabilities (HEPs) for the two new operator actions developed in support of Single Pond Return Header alignment LAR will be updated as needed to be consistent with the updated procedural guidance and training. Risk estimates will also be updated to include the updated HEPs. After the HEPs are updated, it will be confirmed that the risk estimates associated with this Single Pond Return Header alignment LAR are within the acceptance guidelines of RG 1.177 and RG 1.174. If the risk estimates are not within the acceptance guidelines of RG 1.177 and RG 1.174, additional risk reduction measures will be taken as needed to ensure that the acceptance guidance are met.	Prior to entry into TS 3.7.8, Nuclear Service Water System (NSWS) Condition D – One NSWS Pond return header inoperable due to NSWS being aligned for single Pond return header operation.

<u>Amendment Number</u>	<u>Additional Condition</u>	<u>Implementation Date</u>
300	During the extended DG Completion Times authorized by Amendment No. 300, the turbine-driven auxiliary feed water pump will not be removed from service for elective maintenance activities. The turbine-driven auxiliary feed water pump will be controlled as "protected equipment" during the extended DG CT. The Non-CT EDGs, ESPS, Component Cooling System, Safe Shutdown Facility, Nuclear Service Water System, motor driven auxiliary feed water pumps, and the switchyard will also be controlled as "protected equipment."	Upon implementation of Amendment No. 300
300	The risk estimates associated with the 14-day EDG Completion Time LAR (including those results of associated sensitivity studies) will be updated, as necessary to incorporate the as-built, as-operated ESPS modification. Duke Energy will confirm that any updated risk estimates continue to meet the risk acceptance guidelines of RG 1.174 and RG 1.177.	Upon implementation of Amendment No. 300
300	The preplanned diesel generator (DG) maintenance will not be scheduled if severe weather conditions are anticipated. Weather conditions will be evaluated prior to intentionally entering the extended DG Completion Time (CT) and will not be entered if official weather forecasts are predicting severe weather conditions (i.e., thunderstorm, tornado or hurricane warnings). Operators will monitor weather forecasts each shift during the extended DG CT. If severe weather or grid instability is expected after a DG outage begins, station managers will assess the conditions and determine the best course for returning the DG to operable status.	Upon implementation of Amendment No. 300

Renewed License No. NPF-52
Amendment No. 300

APPENDIX C

ANTITRUST CONDITIONS

Pursuant to an Order by the Atomic Safety and Licensing Board, dated April 23, 1975, the Nuclear Regulatory Commission incorporates in Operating License NPR-52 the following antitrust conditions:

- a. The licensee makes the commitments contained herein, recognizing that bulk power supply arrangements between neighboring entities normally tend to serve the public interest. In addition, where there are net benefits to all participants such arrangements also serve the best interests of each of the participants. Among the benefits of such transactions are increased electric system reliability, a reduction in the cost of electric power, and minimization of the environmental effects of the production and sale of electricity.

Any particular bulk power supply transaction may afford greater benefits to one participant than to another. The benefits realized by a small system may be proportionately greater than those realized by a larger system. The relative benefits to be derived by the parties from a proposed transaction, however, should not be controlling upon a decision with respect to the desirability of participating in the transaction. Accordingly, the licensee will enter into proposed bulk power transactions of the types hereinafter described which, on balance, provide net benefits to the licensee. There are net benefits in a transaction if the licensee recovers the cost of the transaction, (as defined in subparagraph (1)(d) hereof) and there is no demonstrable net detriment to the licensee arising from the transaction.

(1) As used herein:

- (a) "Bulk Power" means electric power and any attendant energy, supplied or made available at transmission or sub-transmission voltage by one electric system to another.
- (b) "Neighboring Entity" means a private or public corporation, a governmental agency or authority, a municipality, a cooperative, or a lawful association of any of the foregoing owning or operating, or proposing to own or operate, facilities for the generation and transmission of electricity which meets each of the following criteria: (1) its existing or proposed facilities are economically and technically feasible of interconnection with those of the licensee and (2) with the exception of municipalities, cooperatives, governmental agencies or authorities, and associations, it is, or upon commencement of operations will be, a public utility and subject to regulation with respect to rates and service under the laws of North Carolina or South Carolina or under the Federal Power Act; provided, however, that as to

associations, each member of such association is either a public utility as discussed in this clause (2) or a municipality, a cooperative or a governmental agency or authority.

- (c) Where the phrase "neighboring entity" is intended to include entities engaging or proposing to engage only in the distribution of electricity, this is indicated by adding the phrase "including distribution systems."
 - (d) "Cost" means any appropriate operating and maintenance expenses, together with all other costs, including a reasonable return on the licensee's investment, which are reasonably allocable to a transaction. However, no value shall be included for loss of revenue due to the loss of any wholesale or retail customer as a result of any transaction hereafter described.
- (2)
- (a) The licensee will interconnect and coordinate reserves by means of the sale and exchange of emergency and scheduled maintenance bulk power with any neighboring entity(ies), when there are net benefits to each party, on terms that will provide for all of the licensee's properly assignable costs as may be determined by the Federal Energy Regulatory Commission and consistent with such cost assignment will allow the other party the fullest possible benefits of such coordination.
 - (b) Emergency service and/or scheduled maintenance service to be provided by each party will be furnished to the fullest extent available from the supplying party and desired by the party in need. The licensee and each party will provide to the other emergency service and/or scheduled maintenance service if and when available from its own generation and, in accordance with recognized industry practice, from generation of others to the extent it can do so without impairing service to its customers, including other electric systems to whom it has firm commitments.
 - (c) Each party to a reserve coordination arrangement will establish its own reserve criteria, but in no event shall the minimum installed reserve on each system be less than 15%, calculated as a percentage of estimated peak load responsibility. Either party, if it has, or has firmly planned, installed reserves in excess of the amount called for by its own reserve criterion, will offer any such excess as may in fact be available at the time for which it is sought and for such period as the selling party shall determine for purchase in accordance with reasonable industry practice by the other party to meet such other party's own reserve requirements. The parties will provide such amounts of spinning reserve as may be adequate to avoid the imposition of unreasonable

demands on the other part(ies) in meeting the normal contingencies of operating its (their) system(s). However, in no circumstances shall such spinning reserve requirement exceed the installed reserve requirement.

- (d) Interconnections will not be limited to low voltages when higher voltages are available from the licensee's installed facilities in the area where interconnection is desired and when the proposed arrangement is found to be technically and economically feasible.
 - (e) Interconnection and reserve coordination agreements will not embody provisions which impose limitations upon the use or resale of power and energy sold or exchanged pursuant to the agreement. Further, such arrangements will not prohibit the participants from entering into other interconnection and coordination arrangements, but may include appropriate provisions to assure that (i) the licensee receives adequate notice of such additional interconnection or coordination, (ii) the parties will jointly consider and agree upon such measures, if any, as are reasonably necessary to protect the reliability of the interconnected systems and to prevent undue burdens from being imposed on any system, and (iii) the licensee will be fully compensated for its costs. Reasonable industry practice as developed in the area from time to time will satisfy this provision.
- (3) The licensee currently has on file, and may hereafter file, with the Federal Energy Regulatory Commission contracts with neighboring entity(ies) providing for the sale and exchange of short-term power and energy, limited term power and energy, economy energy, non-displacement energy, and emergency capacity and energy. The Licensee will enter into contracts providing for the same or for like transactions with any neighboring entity on terms which enable the Licensee to recover the full costs allocable to such transaction.
 - (4) The licensee currently sells capacity and energy in bulk on a full requirements basis to several entities engaging in the distribution of electric power at retail. In addition, the licensee supplies electricity directly to ultimate users in a number of municipalities. Should any such entity(ies) or municipality(ies) desire to become a neighboring entity as defined in subparagraph (1)(b) hereof (either alone or through combination with others), the licensee will assist in facilitating the necessary transition through the sale of partial requirements firm power and energy to the extent that, except for such transition, the licensee would otherwise be supplying firm power and energy. The provision of such firm partial requirements service shall be under such rates, terms and conditions as shall be found by the Federal Energy Regulatory Commission to

provide for the recovery of the licensee's cost. The licensee will sell capacity and energy in bulk on a full requirements basis to any municipality currently served by the licensee when such municipality lawfully engages in the distribution of electric power at retail.

- (5) (a) The licensee will facilitate the exchange of electric power in bulk in wholesale transactions over its transmission facilities (1) between or among two or more neighboring entities including distribution systems with which it is interconnected or may be interconnected in the future, and (2) between any such entity(ies) and any other electric system engaging in bulk power supply between whose facilities the licensee's transmission lines and other transmission lines would form a continuous electric path, provided that permission to utilize such other transmission lines has been obtained. Such transaction shall be undertaken provided that the particular transaction reasonably can be accommodated by the licensee's transmission system from a functional and technical standpoint and does not constitute the wheeling of power to a retail customer. Such transmission shall be on terms that fully compensate the licensee for its cost. Any entity(ies) requesting such transmission arrangements shall give reasonable notice of its (their) schedule and requirements.
 - (b) The licensee will include in its planning and construction program sufficient transmission capacity as required for the transactions referred to in subparagraph (a) of this paragraph, provided that (1) the neighboring entity(ies) gives the licensee sufficient advance notice as may be necessary reasonably to accommodate its (their) requirements from a functional and technical standpoint and (2) that such entity(ies) fully compensate the licensee for its cost. In carrying out this subparagraph (b), however, the licensee shall not be required to construct or add transmission facilities which (a) will be of no demonstrable present or future benefit to the licensee, or (b) which could be constructed by the requesting entity(ies) without duplicating any portion of the licensee's existing transmission lines, or (c) which would jeopardize the licensee's ability to finance or construct on reasonable terms facilities needed to meet its own anticipated system requirements. Where regulatory or environmental approvals are required for the construction or addition of transmission facilities needed for the transactions referred to in subparagraph (a) of this paragraph it shall be the responsibility of the entity(ies) seeking the transaction to participate in obtaining such approvals, including sharing in the cost thereof.
- (6) To increase the possibility of achieving greater reliability and economy of electric generation and transmission facilities, the licensee will discuss load projections and system development plans with any neighboring entity(ies).

- (7) When the licensee's plans for future nuclear generating units (for which application will hereafter be made to the Nuclear Regulatory Commission) have reached the stage of serious planning, but before firm decisions have been made as to the size and desired completion date of the proposed nuclear units, the licensee will notify all neighboring entities including distribution systems with peak loads smaller than the licensee's that the licensee plans to construct such nuclear units. Neither the timing nor the information provided need be such as to jeopardize obtaining the required site at the lowest possible cost.
- (8) The foregoing commitments shall be implemented in a manner consistent with the provisions of the Federal Power Act and all other lawful local, state and Federal regulation and authority. Nothing in these commitments is intended to determine in advance the resolution of issues which are properly raised at the Federal Energy Regulatory Commission concerning such commitments, including allocation of costs or the rates to be charged. The licensee will negotiate (including the execution of a contingent statement of intent) with respect to the foregoing commitments with any neighboring entity including distribution systems where applicable engaging in or proposing to engage in bulk power supply transactions, but the licensee shall not be required to enter into any final arrangement prior to resolution of any substantial questions as to the lawful authority of an entity to engage in the transactions.

In addition, the licensee shall not be obligated to enter into a given bulk power supply transaction if: (1) to do so would violate, or incapacitate it from performing, any existing lawful contracts it has with a third party; (2) there is contemporaneously available to it a competing or alternative arrangement which affords it greater benefits which would be mutually exclusive of such arrangement; (3) to do so would adversely affect its system operations or the reliability of power supply to its customers, or (4) 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.