

Mr. G. R. Peterson
 Site Vice President
 Catawba Nuclear Station
 Duke Energy Corporation
 4800 Concord Road
 York, South Carolina 29745-9635

March 26, 1999

SUBJECT: ISSUANCE OF AMENDMENTS - CATAWBA NUCLEAR STATION, UNITS 1 AND 2 (TAC NOS. MA4623 AND MA4624)

Dear Mr. Peterson:

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 176 to Facility Operating License NPF-35 and Amendment No. 168 to Facility Operating License NPF-52 for the Catawba Nuclear Station, Units 1 and 2, in response to your application dated January 28, 1999.

The amendments revise the Technical Specifications, Section 3.7.13, "Fuel Handling Ventilation Exhaust System (FHVES)" and associated Bases, correcting the discrepancies between the current design and this section. The FHVES consists of two independent and redundant trains. Each train, in turn, consists of two 50 percent capacity filter units. Each filter unit consists of a heater, a prefilter, high efficiency particulate air filters, an activated carbon absorber, and a fan. The current Section 3.7.13 incorrectly specifies FHVES flow rate on a per filter unit basis, i.e., $\leq 18,221$ cubic feet per minute (cfm); the revised Section 3.7.13 reflects operation of both fans of a train as designed, with a total flow rate of $\leq 36,443$ cfm.

A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

Original signed by:
 Peter S. Tam, Senior Project Manager
 Project Directorate II-2
 Division of Licensing Project Management
 Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and
 50-414

Enclosures: 1. Amendment No. 176 to NPF-35
 2. Amendment No. 168 to NPF-52
 3. Safety Evaluation

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*See previous concurrence

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

March 26, 1999

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A copy of the related Safety Evaluation is also enclosed. A Notice of Issuance will be included in the Commission's biweekly Federal Register notice.

Sincerely,

A handwritten signature in black ink that reads "Peter S. Tam".

Peter S. Tam, Senior Project Manager
Project Directorate II-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Enclosures: 1. Amendment No. 176 to NPF-35
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cc w/encls: See next page



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

DUKE ENERGY CORPORATION
NORTH CAROLINA ELECTRIC MEMBERSHIP CORPORATION
SALUDA RIVER ELECTRIC COOPERATIVE, INC.
DOCKET NO. 50-413
CATAWBA NUCLEAR STATION, UNIT 1
AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 176
License No. NPF-35

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Catawba Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-35 filed by the Duke Energy Corporation, acting for itself, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. (licensees), dated January 28, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment 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;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

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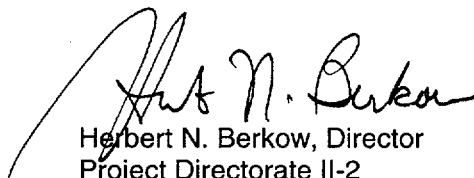
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-35 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 176 , which are attached hereto, are hereby incorporated into this license. Duke Energy Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days from the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Technical Specification
Changes

Date of Issuance: March 26, 1999



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

DUKE ENERGY CORPORATION

NORTH CAROLINA MUNICIPAL POWER AGENCY NO. 1

PIEDMONT MUNICIPAL POWER AGENCY

DOCKET NO. 50-414

CATAWBA NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 168
License No. NPF-52

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment to the Catawba Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-52 filed by the Duke Energy Corporation, acting for itself, North Carolina Municipal Power Agency No. 1 and Piedmont Municipal Power Agency (licensees), dated January 28, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations as set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment 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;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

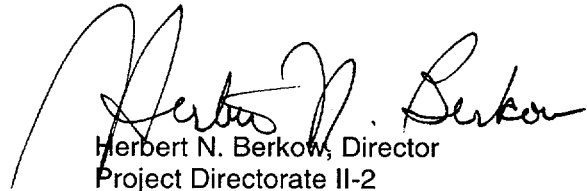
2. Accordingly, the license is hereby amended by page changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-52 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 168 , which are attached hereto, are hereby incorporated into this license. Duke Energy Corporation shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective as of its date of issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Herbert N. Berkow, Director
Project Directorate II-2
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Attachment: Technical Specification
Changes

Date of Issuance: March 26, 1999

ATTACHMENT TO LICENSE AMENDMENT NO. 176
TO FACILITY OPERATING LICENSE NO. NPF-35
AND LICENSE AMENDMENT NO. 168
TO FACILITY OPERATING LICENSE NO. NPF-52
DOCKET NOS. 50-413 AND 50-414

Replace the following page of the joint Technical Specifications (Appendix A of the Operating Licenses) with the enclosed page. The revised page is identified by amendment number and contains vertical lines indicating the areas of change.

Remove

3.7.13-2

Insert

3.7.13-2

Replace the following pages of the Technical Specifications Bases with the enclosed pages. The revised pages are identified by amendment number and contain vertical lines indicating the areas of change.

Remove

B 3.7.13-1
B 3.7.13-2
B 3.7.13-4

Insert

B 3.7.13-1
B 3.7.13-2
B 3.7.13-4

SURVEILLANCE REQUIREMENTS

SURVEILLANCE	FREQUENCY
SR 3.7.13.1 Verify required FHVES train in operation.	12 hours
SR 3.7.13.2 Operate required FHVES train for ≥ 10 continuous hours with the heaters operating.	31 days
SR 3.7.13.3 Perform required FHVES filter testing in accordance with the Ventilation Filter Testing Program (VFTP).	In accordance with the VFTP
SR 3.7.13.4 Verify one FHVES train can maintain a pressure ≤ -0.25 inches water gauge with respect to atmospheric pressure during operation at a flow rate $\leq 36,443$ cfm.	18 months on a STAGGERED TEST BASIS
SR 3.7.13.5 Verify each FHVES filter bypass damper can be closed.	18 months

B 3.7 PLANT SYSTEMS

B 3.7.13 Fuel Handling Ventilation Exhaust System (FHVES)

BASES

BACKGROUND

The FHVES filters airborne radioactive particulates from the area of the fuel pool following a fuel handling accident. The FHVES, in conjunction with other normally operating systems, also provides environmental control of temperature and humidity in the fuel pool area.

The FHVES consists of two independent and redundant trains with two filter units per train. Each filter unit consists of a heater, a prefilter, high efficiency particulate air (HEPA) filters, an activated carbon adsorber section for removal of gaseous activity (principally iodines), and a fan. Ductwork, valves or dampers, and instrumentation also form part of the system. A second bank of HEPA filters follows the adsorber section to collect carbon fines and provide backup in case the main HEPA filter bank fails. The downstream HEPA filter is not credited in the analysis, but serves to collect carbon fines, and to back up the upstream HEPA filter should it develop a leak. The system initiates filtered ventilation of the fuel handling building following receipt of a high radiation signal.

The FHVES train does not actuate on any signal. One train is required to be in operation whenever irradiated fuel is being moved in the fuel handling building. The operation of one train of FHVES ensures, if a fuel handling accident occurs, ventilation exhaust will be filtered before being released to the environment. The prefilters remove any large particles in the air, and any entrained water droplets present, to prevent excessive loading of the HEPA filters and carbon adsorbers.

The FHVES is discussed in the UFSAR, Sections 6.5, 9.4, and 15.7 (Refs. 1, 2, and 3, respectively) because it may be used for normal, as well as atmospheric cleanup functions after a fuel handling accident in the spent fuel pool area.

APPLICABLE

SAFETY ANALYSES

The FHVES design basis is established by the consequences of the limiting Design Basis Accident (DBA), which is a fuel handling accident. The analysis of the fuel handling accident, given in Reference 3, assumes that all fuel rods in an assembly are damaged. The DBA analysis of the fuel handling accident assumes that only one

BASES

APPLICABLE SAFETY ANALYSES (continued)

train of the FHVES is OPERABLE and in operation. The amount of fission products available for release from the fuel handling building is determined for a fuel handling accident. These assumptions and the analysis follow the guidance provided in Regulatory Guide 1.25 (Ref. 4).

The FHVES satisfies Criterion 3 of 10 CFR 50.36 (Ref. 5).

LCO

One train of the FHVES is required to be OPERABLE and in operation whenever irradiated fuel is being moved in the fuel handling building. Total system failure could result in the atmospheric release from the fuel handling building exceeding the 10 CFR 100 (Ref. 6) limits in the event of a fuel handling accident.

The FHVES is considered OPERABLE when the individual components necessary to control exposure in the fuel handling building are OPERABLE. An FHVES train is considered OPERABLE when its associated:

- a. Fans are OPERABLE;
 - b. HEPA filters and carbon adsorbers are not excessively restricting flow, and are capable of performing their filtration function; and
 - c. Ductwork, valves, and dampers are OPERABLE, and air circulation can be maintained.
-

APPLICABILITY

During movement of irradiated fuel in the fuel handling area, the FHVES is required to be OPERABLE and in operation to alleviate the consequences of a fuel handling accident.

ACTIONS

A.1

Required Action A.1 is modified by a Note indicating that LCO 3.0.3 does not apply.

With the movement of irradiated fuel in the fuel handling building, one train of FHVES is required to be OPERABLE and in operation. The movement of irradiated fuel must be immediately suspended, if the train

BASES

SURVEILLANCE REQUIREMENTS (continued)

SR 3.7.13.3

This SR verifies that the required FHVES testing is performed in accordance with the Ventilation Filter Testing Program (VFTP). The FHVES filter tests are in accordance with Regulatory Guide 1.52 (Ref. 7). The VFTP includes testing HEPA filter performance, carbon adsorber efficiency, minimum system flow rate, and the physical properties of the activated carbon (general use and following specific operations). Specific test frequencies and additional information are discussed in detail in the VFTP.

SR 3.7.13.4

This SR verifies the integrity of the fuel building enclosure. The ability of the fuel building to maintain negative pressure with respect to potentially uncontaminated adjacent areas is periodically tested to verify proper function of the FHVES. During operation, the FHVES is designed to maintain a slight negative pressure in the fuel building, to prevent unfiltered LEAKAGE. The FHVES is designed to maintain ≤ -0.25 inches water gauge with respect to atmospheric pressure at a flow rate of $\leq 36,443$ cfm. The Frequency of 18 months (on a STAGGERED TEST BASIS) is consistent with the guidance provided in NUREG-0800, Section 6.5.1 (Ref. 8).

SR 3.7.13.5

Operating the FHVES filter bypass damper is necessary to ensure that the system functions properly. The OPERABILITY of the FHVES filter bypass damper is verified if it can be manually closed. An 18 month Frequency is consistent with Reference 8.



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 176 TO FACILITY OPERATING LICENSE NPF-35

AND AMENDMENT NO. 168 TO FACILITY OPERATING LICENSE NPF-52

DUKE ENERGY CORPORATION, ET AL.

CATAWBA NUCLEAR STATION, UNITS 1 AND 2

DOCKET NOS. 50-413 AND 50-414

1.0 INTRODUCTION

By letter dated January 28, 1999, Duke Energy Corporation, et al. (DEC, the licensee), submitted a request for changes to the Catawba Nuclear Station, Units 1 and 2, Technical Specifications (TSs). The requested changes would revise TS Section 3.7.13, "Fuel Handling Ventilation Exhaust System (FHVES)" and associated Bases, correcting the discrepancies between the current design and this section. Section 3.7.13 of the joint Catawba Units 1 and 2 TSs delineates operational and surveillance requirements (SRs) for the FHVES. The licensee found that certain parts of this section and the associated Bases section are in error and not in agreement with the existing design. The staff's review of DEC's proposed corrections is set forth below.

2.0 DISCUSSION AND EVALUATION

2.1 Technical Specification Section 3.7.13

According to both the Catawba Final Safety Analysis Report (FSAR) and Updated Final Safety Analysis Report (UFSAR), Section 9.4.2.2, the FHVES filters airborne radioactivity from the fuel pool area following a postulated fuel handling accident. The FHVES consists of two independent and redundant trains. Each train, in turn, consists of two 50 percent capacity filter units. Each filter unit consists of a heater, a prefilter, high efficiency particulate air filters, an activated carbon adsorber, and a fan. The FSAR and UFSAR both describe the total exhaust flow of each train to be approximately 33,130 cubic feet per minute (cfm).

Section 5.5.11 of the TSs quantifies the FHVES individual fan flow rate as 16,565 cfm $\pm 10\%$. Thus, the maximum flow rate per FHVES train would be $16,565 \times 2 \times 110\% = 36,443$ cfm.

Contrary to the above design basis, SR 3.7.13.4 currently states "Verify one FHVES train can maintain a pressure ≤ -0.25 inches water gauge with respect to atmospheric pressure during operation at a flow rate $\leq 18,221$ cfm." The "18,221 cfm" is the maximum flow rate of each fan, which is 50 percent of the maximum flow rate per train. This SR is erroneous because it implies that (1) only one 50 percent-capacity fan is needed to operate, and (2) the flow rate generated

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by that one fan is sufficient to maintain the air pressure at ≤ -0.25 inch water gauge with respect to atmospheric pressure.

The licensee proposed to correct this error by changing "18,221 cfm" to "36,443 cfm," the maximum flow rate of one train of the FHVES. The licensee stated that the FHVES is not tested on a per filter unit (i.e., per fan) basis, but on a per train basis. This error was introduced by Amendments No. 173 (Unit 1) and 165 (Unit 2), which converted the TS to the Improved Technical Specification (ITS) format. Before the ITS conversion, the numerical value of the flow rate was not specified by the TSSs.

The staff reviewed the licensee's submitted information and agreed that errors were inadvertently introduced by the ITS conversion. The licensee's proposed change would correct the error and is, therefore, acceptable.

2.2 TS Bases Section B 3.7.13

(Note: deleted text is shown as strikethrough; added text is shown as highlighted)

The licensee proposed to rewrite the first two sentences of the second paragraph under the heading BACKGROUND to read as follows:

The FHVES consists of two independent and redundant trains with two filter units per train. Each train filter unit consists of a heater, a prefilter, a high efficiency particulate air (HEPA) filters, an activated carbon adsorber section for removal of gaseous activity (principally iodines), and a fan.

Under the Limiting Conditions for Operation [LCO], the licensee proposed to modify the wording to read:

- a. ~~Fan is~~ Fans are OPERABLE;
- b. HEPA filters and carbon adsorbers are not excessively restricting flow, and are capable of performing their filtration function; and

Under SURVEILLANCE REQUIREMENTS, the licensee proposed to modify one of the sentences of SR 3.7.13.4 to read:

The FHVES is designed to maintain ≤ -0.25 inches water gauge with respect to atmospheric pressure at a flow rate of \leq ~~18,221~~ 36,443 cfm ~~to the fuel building~~.

These revisions are consistent with the design depicted in the FSAR and UFSAR, and revised SR 3.7.13.4.

The TS Bases is a licensee-controlled document, and is not part of the TS (10 CFR 50.36(a)). However, the staff reviewed the licensee's proposed changes as supplemental information for the changes in TS Section 3.7.13. The staff finds the proposed changes to the Bases acceptable.

3.0 STATE CONSULTATION

In accordance with the Commission's regulations, the South Carolina State official, Mr. Virgil Autrey, was notified of the proposed issuance of the amendments. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

The amendments change surveillance requirements. The NRC staff has determined that the amendments involve no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite, and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that the amendments involve no significant hazards consideration, and there has been no public comment on such finding (64 FR 9187, February 24, 1999). Accordingly, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of the amendments.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (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 amendments will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributors: Harold Walker
Peter S. Tam

Date: March 26, 1999