June 1, 1988

Docket Nos.: 50-369
and 50-370

Mr. H. B. Tucker, Vice President
Nuclear Production Department
Duke Power Company
422 South Church Street
Charlotte, North Carolina 28242

Dear Mr. Tucker:

SUBJECT: ISSUANCE OF AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NPF-9 AND AMENDMENT NO. 66 TO FACILITY OPERATING LICENSE NPF-17 - MCGUIRE NUCLEAR STATION, UNITS 1 AND 2 (TACS 67200/67201)

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 85 to Facility Operating License NPF-9 and Amendment No. 66 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments consist of changes to the Technical Specifications in response to your application dated April 1, 1988, which modified a letter dated February 5, 1988.

The amendments change Technical Specification 5.3.1 "Fuel Assemblies" to provide increased flexibility in the substitution of solid stainless steel rods and open water channels for fuel rods in reconstitutible fuel assemblies to be reinserted in the reactor core during a refueling outage. The amendments are effective as of their date of issuance.

A copy of the related safety evaluation supporting Amendment No. 85 to Facility Operating License NPF-9 and Amendment No. 66 to Facility Operating License NPF-17 is enclosed.

Notice of issuance of amendments will be included in the Commission's next bi-weekly Federal Register notice.

Sincerely,

DARL Hood

Darl Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II

Enclosures:
1. Amendment No. 85 to NPF-9
2. Amendment No. 66 to NPF-17
3. Safety Evaluation

cc w/enclosures:
See next page

OFFICIAL RECORD COPY

PD#II-3/DRP-I/II	PD#II-3/DRP-I/II	PD#II-3/DRP-I/II
MRood:	DHood:sw	DMatthews
5/17/88	5/17/88	5/25/88

Mr. H. B. Tucker
Duke Power Company

McGuire Nuclear Station

cc:
Mr. A.V. Carr, Esq.
Duke Power Company
P. O. Box 33189
422 South Church Street
Charlotte, North Carolina 28242

County Manager of Mecklenburg County
720 East Fourth Street
Charlotte, North Carolina 28202

Mr. Robert Gill
Duke Power Company
Nuclear Production Department
P. O. Box 33189
Charlotte, North Carolina 28242

J. Michael McGarry, III, Esq.
Bishop, Liberman, Cook, Purcell
and Reynolds
1200 Seventeenth Street, N.W.
Washington, D. C. 20036

Senior Resident Inspector
c/o U.S. Nuclear Regulatory Commission
Route 4, Box 529
Hunterville, North Carolina 28078

Regional Administrator, Region II
U.S. Nuclear Regulatory Commission,
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323

S. S. Kilborn
Area Manager, Mid-South Area
ESSD Projects
Westinghouse Electric Corporation
MNC West Tower - Bay 239
P. O. Box 355
Pittsburgh, Pennsylvania 15230

Dr. John M. Barry
Department of Environmental Health
Mecklenburg County
1200 Blythe Boulevard
Charlotte, North Carolina 28203

Mr. Dayne H. Brown, Chief
Radiation Protection Branch
Division of Facility Services
Department of Human Resources
701 Barbour Drive
Raleigh, North Carolina 27603-2008

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

DUKE POWER COMPANY

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 85
License No. NPF-9

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

   A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-9 filed by the Duke Power Company (the licensee) dated April 1, 1988, which modified a letter dated February 5, 1988, 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, as amended, 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 attachments to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-9 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 85, are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II

Attachment:
Technical Specification
Changes

Date of Issuance: June 1, 1988

OFFICIAL RECORD COPY

LA:PDII-3	PM:PDII-3	NRR:DTSB	OGC-WF	D:PDII-3	ADR2:NRR
MRood	DHood:sw	EButcher		DMatthews	GLainas
5/17/88	5/17/88	5/17/88	5/23/88	5/25/88	/88

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

DUKE POWER COMPANY

DOCKET NO. 50-370

McGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 66
License No. NPF-17

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

   A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-17 filed by the Duke Power Company (the licensee) dated April 1, 1988, which modified a letter dated February 5, 1988, 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, as amended, 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 attachments to this license amendment, and Paragraph 2.C.(2) of Facility Operating License No. NPF-17 is hereby amended to read as follows:

   (2) Technical Specifications

   The Technical Specifications contained in Appendix A, as revised through Amendment No. 66, are hereby incorporated into the license. The licensee shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

David B. Matthews, Director
Project Directorate II-3
Division of Reactor Projects-I/II

Attachment:
Technical Specification
Changes

Date of Issuance: June 1, 1988

OFFICIAL RECORD COPY

LA:PDII-3	PM:PDII-3	NRR:DTSB	OGC-WF	D:PDII-3	ADR2:NRR
MRood	DHood:sw	EButcher		DMatthews	GLainas
5/17/88	5/17/88	5/17/88	5/23/88	5/25/88	/88

ATTACHMENT TO LICENSE AMENDMENT NO. 85

FACILITY OPERATING LICENSE NO. NPF-9

DOCKET NO. 50-369

AND

TO LICENSE AMENDMENT NO. 66

FACILITY OPERATING LICENSE NO. NPF-17

DOCKET NO. 50-370

Replace the following page of the Appendix "A" Technical Specifications with the enclosed page. The revised page is identified by Amendment number and contains a vertical line indicating the area of change.

Amended Page

5-6

5.2.1.2 REACTOR BUILDING

a. Nominal annular space = 5 feet.

b. Annulus nominal volume = 427,000 cubic feet.

c. Nominal outside height (measured from top of foundation base to the top of the dome) = 177 feet.

d. Nominal inside diameter = 125 feet.

e. Cylinder wall minimum thickness = 3 feet.

f. Dome minimum thickness = 2.25 feet.

g. Dome inside radius = 87 feet.

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The reactor containment is designed and shall be maintained for a maximum internal pressure of 15.0 psig and a temperature of 250°F.

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 193 fuel assemblies with each fuel assembly nominally containing 264 fuel rods clad with Zircaloy-4, except that substitutions of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in fuel assemblies if justified by cycle-specific reload analyses using NRC-approved methodology. Should more than 30 rods in the core, or 10 rods in any assembly, be replaced per refueling, a special report describing the number of rods replaced will be submitted to the Commission pursuant to Specification 6.9.2 within 30 days after cycle startup. Each fuel rod shall have a nominal active fuel length of 144 inches. Reload fuel shall be similar in physical design to the initial core loading and shall have a maximum enrichment of 4.0 weight percent U-235.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length and no part-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material. The nominal values of absorber material for Unit 1 control rods shall be 80% silver, 15% indium, and 5% cadmium. The nominal values of absorber material for Unit 2 control rods shall be 100% boron carbide (B_4C) for 102 inches and 80% silver, 15% indium, and 5% cadmium for the 40-inch tip. All control rods shall be clad with stainless steel tubing.

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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 85 TO FACILITY OPERATING LICENSE NPF-9

AND AMENDMENT NO. 66 TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

DOCKET NOS. 50-369 AND 50-370

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

By letter dated April 1, 1988, Duke Power Company (the licensee) proposed amendments to change Technical Specification (TS) 5.3.1 "Fuel Assemblies" to provide increased flexibility in the substitution of solid stainless steel rods and open water channels (i.e., vacancies) for fuel rods in reconstitutible fuel assemblies to be reinserted in the reactor core during a refueling outage. Presently, TS 5.3.1 requires that each fuel assembly contain 264 fuel rods clad with Zircaloy-4, except that limited substitutions of fuel rods with filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in peripheral fuel assemblies if justified by cycle-specific reload analyses. The revised TS 5.3.1 would require that each fuel assembly nominally contain 264 fuel rods clad with Zircaloy-4, except that substitutions of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel, or by vacancies, may be made in fuel assemblies if justified by cycle-specific reload analyses using NRC-approved methodology. The proposed revision would also state that should more than 30 rods in the core, or 10 rods in any assembly, be replaced per refueling, a special report describing the number of rods replaced would be submitted to the Commission pursuant to Specification 6.9.2 within 30 days after cycle startup.

The licensee's letter of April 1, 1988 modified a previous related request dated February 5, 1988, which was not accepted by the NRC because it did not clearly specify requirements for analyses by the licensee to be performed for each reload using NRC-approved methodology.

EVALUATION

The proposed change provides increased flexibility by the removal of "limited substitutions" and "peripheral fuel assemblies." Under the proposed change, limitations on fuel rod substitution or omissions and limitations regarding core locations are those implicit in the justifying analyses required to be performed by the licensee for each fuel cycle using NRC-approved methodology to demonstrate that existing design limits and safety analyses continue to be met.

The term "NRC-approved methodology" includes those methodologies acknowledged in the FSAR and applied in support of issuance of the original operating licenses for McGuire Nuclear Station, Units 1 and 2. Additionally, it includes those subsequent methodologies which have been submitted to and accepted by the staff after the issuance of the McGuire operating licenses.

For example, by letter dated March 13, 1985, the NRC staff approved Duke Power Company's topical report DPC-NF-2010 titled "McGuire Nuclear Station 1/Catawba Nuclear Station Physics Methodology for Reload Design," dated April 1984. As noted in NRC Generic Letter 83-11, "Licensee Qualifications for Performing Safety Analyses in Support of Licensing Actions," each licensee or vendor who intends to use a safety analysis methodology to support licensing actions must demonstrate their proficiency in using the methodology by submitting verification performed by them, not others. Thus, methodologies approved by the NRC for a specific vendor may be used by that vendor in support of McGuire reload design and anlysis; use of that methodology by other than that vendor does not constitute "NRC-approved methodology" unless specifically authorized by the NRC.

The proposed flexibility is intended to provide for improved fuel performance by permitting timely removal of individual fuel rods which are found during a refueling outage to be leaking or are deemed to be candidates for future leakage. These improvements in the licensee's fuel performance program will provide for reductions in future occupational radiation exposure and plant radiological releases. The licensee's present goal for fuel reliability improvement (Reference a) is that the cycle average steady-state Iodine-131 activity, corrected for tramp contribution and normalized to a common purification rate, remain below 0.02 microcuries per gram. This corresponds to about 12 leaking fuel rods. The licensee's goal is to achieve one-half the present goal, or 0.01 microcuries per gram, by 1990 and beyond. This will be achieved, in part, by an action plan of outage inspections and reconstitution; if the I-131 activity exceeds 0.05 microcuries per gram any time during the cycle, then all of the reconstitutible assemblies to be reinserted will be examined by special ultrasonic testing (UT) equipment for defects in individual failed rods and results used for reconstitution decisions. Fuel handling, UT, and reconstitution of failed assemblies of a reconstitutible top-nozzle design would be conducted in parallel during refueling outages. The licensee estimates the fuel improvement program will reduce the total station occupational dose by at least 5 to 10 percent. Radiological releases from the station during normal operation would also be significantly reduced because of improved fuel performance.

The requirement for special reporting is consistent with existing TS 6.9.2 and is proposed in response to the NRC's request to be informed in the event a significant deviation from past fuel performances should be observed during a refueling outage.

Accordingly, we find that the proposed revision of TS 5.3.1 does not result in any significant adverse change in the process for determining the adequacy of reload designs and associated safety analyses. The licensee will continue to justify each cycle-specific reload by analyses using NRC-approved methodology in order to demonstrate that existing design limits and safety anlyses criteria are met in advance of cycle operation. The proposed change does not increase the probability or consequences of accidents. As discussed above, no adverse changes are being made in the types or amounts of effluents that may be released offsite, and there is no significant increase in the allowable individual or cumulative occupational radiation exposure. The licensee will continue to keep the NRC informed in a timely manner regarding any significant adverse change in its fuel performance program. Therefore, we find the proposed change acceptable.

ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.32 the Commission has determined that issuing these amendments will have no significant impact on the environment (53 FR 17991).

CONCLUSION

The Commission issued a Notice of Consideration of Issuance of Amendments to Facility Operating Licenses and Opportunity for Hearing which was published in the Federal Register (53 FR 15478) on April 29, 1988. The Commission consulted with the state of North Carolina. No public comments were received, and the state of North Carolina did not have any comments.

We have 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, and (2) such activities will be conducted in compliance with the Commission's regulations, and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

REFERENCES:

(a) Memorandum by Darl Hood, "Summary of March 28, 1988 Meeting on TS Changes Regarding Use of Steel Rods and Open Water Channels in Reconstitutible Fuel Assemblies," dated April 1, 1988, Docket Nos. 50-413/414 and 50-369/370.

Principal Contributor: D. Hood, PD#II-3/DRP-I/II
L. Lois, SRBX, DEST

Dated: June 1, 1988

7590-01

U.S. NUCLEAR REGULATORY COMMISSION

DUKE POWER COMPANY

DOCKET NOS. 50-369 and 50-370

NOTICE OF ISSUANCE OF AMENDMENTS TO

FACILITY OPERATING LICENSES

The U. S. Nuclear Regulatory Commission (Commission) has issued Amendment No. 85 to Facility Operating License No. NPF-9 and Amendment No. 66 to Facility Operating Licensee NPF-17 issued to Duke Power Company, (the licensee), which revised the Technical Specifications for operation of the McGuire Nuclear Station, Units 1 and 2, located in Mecklenburg County, North Carolina. The amendments were effective as of the date of issuance.

The amendments changed Technical Specification 5.3.1 "Fuel Assemblies" to provide increased flexibility in the substitution of solid stainless steel rods and open water channels for fuel rods in reconstitutible fuel assemblies to be reinserted in the reactor core during a refueling outage.

The application for the amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments.

Notice of Consideration of Issuance of Amendment and Opportunity for Hearing in connection with this action was published in the FEDERAL REGISTER on April 29, 1988 (53 FR 15478). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment and Finding of No Significant Impact (53 FR 17991) related to the action and has concluded that an environmental impact statement is not warranted and that the issuance of this amendment will not have a significant adverse effect on the quality of human environment.

For further details with respect to the action see (1) the application for amendment dated April 1, 1988, which modified a letter dated February 5, 1988, (2) Amendment No. 85 to License No. NPF-9, and Amendment No. 66 to License No. NPF-17, and (3) the Commission's related Safety Evaluation and Environmental Assessment.

All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, N.W., and at the Atkins Library, University of North Carolina, Charlotte (UNCC Station), North Carolina 28223. A copy of items (2) and (3) may be obtained upon request addressed to the U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, Attention: Director, Division of Reactor Projects.

Dated at Rockville, Maryland this 1st day of June 1988.

FOR THE NUCLEAR REGULATORY COMMISSION

Original signed by:

Darl S. Hood, Project Manager
Project Directorate II-3
Division of Reactor Projects I/II

*SEE PREVIOUS CONCURRENCE

*PDII-3	*PDII-3	*OGC-WF	PDII-3
MRood:sw	DHood		DMatthews
5/17/88	5/17/88	5/23/88	5/25/88

DATED: June 1, 1988

AMENDMENT NO. TO FACILITY OPERATING LICENSE NPF-9 - McGuire Nuclear Station, Unit 1
AMENDMENT NO. TO FACILITY OPERATING LICENSE NPF-17 - McGuire Nuclear Station, Unit 2

DISTRIBUTION:
Docket File
NRC PDR
Local PDR
PD#II-3 R/F
McGuire R/F
S. Varga
G. Lainas
D. Matthews
M. Rood
D. Hood
OGC-WF
J. Partlow
E. Jordan
W. Jones
T. Barnhart (8)
ACRS (10)
GPA/PA
ARM/LFMB
E. Butcher
D. Hagan
W. Hodges, SRXB