



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

July 26, 1985

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. 44 TO FACILITY OPERATING LICENSE
NPF-9 AND AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE
NPF-17 - MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No. 44 to Facility Operating License NPF-9 and Amendment No. 25 to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments are issued in response to your application dated April 3, 1985, and supplemented May 14 and June 12, 1985.

The amendments incorporate into the Unit 2 license authority to receive, possess, and store irradiated fuel assemblies from the Oconee Nuclear Station under the same conditions as authorized by the Unit 1 license. The Unit 1 license is amended to reflect the granting of this authority to Unit 2. The amendments are effective as of their dates of issuance.

A copy of the related safety evaluation supporting Amendment No. 44 to Facility Operating License No. NPF-9 and Amendment No. 25 to Facility Operating License NPF-17 is enclosed.

Notice of issuance will be included in the Commission's next monthly Federal Register notice.

Sincerely,

DARL HOOD
Elinor G. Adensam, Chief
Licensing Branch No. 4
Division of Licensing

Enclosures:

1. Amendment No. 44 to NPF-9
2. Amendment No. 25 to NPF-17
3. Safety Evaluation

cc w/enclosures:
See next page

DESIGNATED ORIGINAL
Certified By *[Signature]*

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PDR ADOCK 05000369
P PDR

Mr. H. B. Tucker
Duke Power Company

McGuire Nuclear Station

cc:

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

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

Mr. F. J. Twogood
Power Systems Division
Westinghouse Electric Corp.
P. O. Box 355
Pittsburgh, Pennsylvania 15230

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

Chairman, North Carolina Utilities
Commission
Dobbs Building
430 North Salisbury Street
Raleigh, North Carolina 27602

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

Mr. Dayne H. Brown, Chief
Radiation Protection Branch
Division of Facility Services
Department of Human Resources
P.O. Box 12200
Raleigh, North Carolina 27605

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

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

R. S. Howard
Operating Plants Projects
Regional Manager
Westinghouse Electric Corporation - R&D 701
P. O. Box 2728
Pittsburgh, Pennsylvania 15230



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. 44
License No. NPF-9

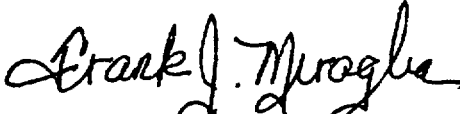
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment to the McGuire Nuclear Station, Unit 1 (the facility) Facility Operating License No. NPF-9 filed by the Duke Power Company (the licensee) dated April 3, 1985, and supplemented May 14 and June 12, 1985, 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;
 - B. The facility will operate in conformity with the application as amended, the provisions of the Act, and the 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 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, Facility Operating License No. NPF-9 is changed as follows:
 - A. Change paragraph 2.K.b. to read:
 - b. Irradiated fuel shipped to McGuire Nuclear Station, Units 1 and 2, from Oconee shall have been removed from the Oconee reactor no less than 270 days prior to shipment.
 - B. Change paragraph 2.K.c. to read:
 - c. No more than 300 Oconee irradiated fuel assemblies shall be received for storage at McGuire Nuclear Station.

C. Add paragraph 2.K.g. to read:

g. Ocone fuel assemblies may not be transferred from one McGuire spent fuel pool to the other.

3. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


by Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation

Date of Issuance: July 26, 1985



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. 25
License No. NPF-17

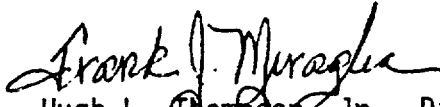
1. The Nuclear Regulatory Commission (the Commission or the NRC) has found that:
 - A. The application for amendment to the McGuire Nuclear Station, Unit 2 (the facility) Facility Operating License No. NPF-17 filed by the Duke Power Company (the licensee) dated April 3, 1985, and supplemented May 14 and June 12, 1985, 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;
 - B. The facility will operate in conformity with the application as amended, the provisions of the Act, and the 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 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, Facility Operating License No. NPF-17 is changed as follows:
 - A. Add paragraph 2.J. to read:
 - J. The licensee is authorized to receive from the Oconee Nuclear Station, Units 1, 2 and 3, possess, and store irradiated Oconee fuel assemblies containing special nuclear material, enriched to not more than 3.24% by weight U-235 subject to the following conditions:
 - a. Oconee fuel assemblies may not be placed in the McGuire Nuclear Station, Units 1 and 2, reactors.
 - b. Irradiated fuel shipped to McGuire Nuclear Station, Units 1 and 2, from Oconee shall have been removed from the Oconee reactor no less than 270 days prior to shipment.

- c. No more than 300 Oconeel irradiated fuel assemblies shall be received for storage at McGuire Nuclear Station.
- d. Burnup of Oconeel fuel shipped shall be no greater than 36,000 MW days per metric ton.
- e. Receipt of irradiated Oconeel fuel shall be limited by the use of the NFS-4 (NAC-1) or NLI-1/2 spent fuel casks.
- f. The spent fuel pool crane travel shall be restricted by administrative controls to the paths required by Technical Specification 3/4.9.7 whenever a spent fuel cask is being handled.
- g. Oconeel fuel assemblies may not be transferred from one McGuire spent fuel pool to the other.

B. Change the designation of paragraph 2.J. on page 8 to 2.K.

3. This amendment is effective as of the date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION


Hugh L. Thompson, Jr., Director
Division of Licensing
Office of Nuclear Reactor Regulation

Date of Issuance: July 26, 1985



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

SAFETY EVALUATION REPORT

RELATED TO AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE

NPF-9 AND TO AMENDMENT NO. 25 TO FACILITY OPERATING

LICENSE NPF-17

DUKE POWER COMPANY

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

In a letter dated April 3, 1985, supplemented May 14 and June 12, 1985, Duke Power Company (the licensee) proposed amendments to Facility Operating License Nos. NPF-9 and NPF-17 which would incorporate into the McGuire Unit 2 license authority to receive, possess and store irradiated fuel assemblies from the Oconee Nuclear Station under the same conditions as are presently authorized by the McGuire Unit 1 license. The conditions upon which the authority to possess, receive, and store irradiated Oconee fuel, as contained in the McGuire Unit 1 license, would not be changed, except for inclusion of Unit 2. The amendments would not increase the inventory of Oconee fuel that may be received at the McGuire site, but would provide for storage of that inventory at either of the two identical McGuire Units. The amendments would not authorize transfer of Oconee irradiated fuel from one McGuire unit's spent fuel pool to the other.

EVALUATION

A. Transportation and Handling

Pursuant to the Decision dated August 10, 1981, of the Atomic Safety and Licensing Appeal Board [ALAB-651, 14 NRC 370] and the licensee's letters of application dated March 9, 1978, and September 15, 1981, the Commission issued on October 27, 1981, Amendment No. 8 to Facility Operating License NPF-9. Amendment No. 8 to NPF-9 consisted of license conditions and Technical Specification changes to authorize the licensee to receive, possess and store at McGuire Unit 1 300 irradiated fuel assemblies generated at the Oconee Nuclear Station. In connection with issuance of that amendment, the Commission reviewed and approved various activities associated with the proposal. Those activities included the motor carrier transportation of 300 spent fuel assemblies (including the possible sabotage of spent fuel in transit and the possible consequences of a severe transportation accident), and accidents during the handling of the transported fuel assemblies at destination.

No changes in offsite transportation of Oconee spent fuel are involved with the proposed amendments because of the common site for the two McGuire Units and because no increase in inventory of Oconee spent fuel at the McGuire site is proposed. The on-site transportation route for the motor

carrier of Oconee spent fuel destined for the McGuire Unit 2 spent fuel pool consists of the same route followed to the Unit 1 pool plus an additional distance of about 1000 feet immediately around and to the opposite side of the McGuire Auxiliary Building to access the Unit 2 spent fuel pool loading area. The additional distance corresponds to the route used by the licensee when spent fuel generated at the McGuire station is transferred from one McGuire spent fuel pool to the other as authorized by Amendments 25 (Unit 1) and 6 (Unit 2). The safety implications of transferring McGuire spent fuel assemblies along this route have been previously evaluated in connection with Amendments 25 and 6 and found to be acceptable. No significant differences are introduced by the motor transport of Oconee spent fuel along this route. Also, no single shipment of spent fuel from Oconee will be divided between the two McGuire spent fuel pools. Therefore, the onsite transport of Oconee spent fuel destined for McGuire Unit 2 is acceptable.

Cask handling procedures in both pools are identical in that the restrictive paths used for moving the cask in and out of the pit and platform area of the Unit 2 pool are a mirror image of those paths used in the Unit 1 pool. Procedures for opening, closing and decontaminating the cask are specific to the cask itself and will, therefore, be identical between pools.

The cask tipping analysis for Unit 1 was reviewed during the hearing which preceded ALAB-651 and is addressed therein. It is also addressed in Chapter 9 of the McGuire FSAR. The same analysis is applicable for both pools because of the identical pool and pit geometry and dimensions for the two pools. This analysis provided an acceptable demonstration that the cask will not fall into the spent fuel pool.

Cask and fuel handling equipment between the Unit 1 and Unit 2 pools are identical. Both pools have 125 ton capacity overhead cranes used for cask movement. Both pools are equipped with a set of handling tools used specifically for the Oconee fuel. The decontamination pits and associated equipment are the same for both pools and the weir gate systems for flooding the cask pits are identical.

The Commission has recently completed further review of the McGuire Units 1 and 2 overhead handling systems and programs used to handle heavy loads in the vicinity of the reactor vessel, near the spent fuel in the spent fuel pool, or in other areas where a load drop may damage safety shutdown systems or spent fuel. The further review was based upon the guidelines of NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." Plants conforming to these guidelines (1) will have developed and implemented, through procedures and operator training, safe load travel paths such that, to the maximum extent practical, heavy loads are not carried over or near irradiated fuel or safe shutdown equipment, and (2) will have provided sufficient operator training, handling system design, load-handling instructions, and equipment inspection to ensure reliable operation of the handling systems. In its letter dated March 12, 1985, the Commission concluded that these systems and programs for McGuire meet the guidelines of NUREG-0612 and that a related license condition contained in paragraph 2.C.(8) of NPF-17 for McGuire Unit 2 requiring compliance with this NUREG had been satisfied.

Other areas which are considered part of the overall system for receipt, handling, and storage of spent fuel are the receiving area and related equipment, the spent fuel pool building ventilation system, area and process radiation monitoring systems and the pool water filtration system. These are all additional areas where the two spent fuel pools are identical.

Both pools share common emergency, health physics, security and safety procedures. Additionally, the manpower requirements for performing spent fuel handling related work would be provided by the same group for both pools.

Because the foregoing systems and procedures are identical or common to each McGuire unit and no additional Oconee spent fuel will be stored under the proposed amendments, we conclude that no adverse changes from our previous evaluations of handling aspects are associated with this action and the handling aspects are, therefore, acceptable.

B. Radiological Exposure, Material, Criticality, Structural, and Cooling Considerations

On September 24, 1984, the Commission issued Amendment No. 35 to NPF-9 and Amendment No. 16 to NPF-17 (Unit 2) to change the Technical Specifications to permit an expansion of the spent fuel pool storage capacity at each unit from 500 to 1463 spent fuel assemblies by replacing racks with two-region racks which utilize neutron absorbing materials to allow closer spacing between stored spent fuel assemblies (i.e., by reracking). The design of the new racks retained the provisions for storage of Oconee spent fuel, and the Amendments left in place the previous authorization set forth by Amendment 8 to NPF-9 for such storage by Unit 1 and provided Technical Specifications consistent with such storage for both McGuire units. In connection with issuance of Amendments 35 (Unit 1) and 16 (Unit 2), the Commission issued a Safety Evaluation Report (SER) in which it evaluated the Amendments with respect to criticality, material, structural and cooling conditions and radiation exposure. With respect to the criticality considerations the SER concluded that, subject to certain conditions, irradiated fuel from McGuire (Westinghouse standard or optimized fuel assembly design) or Oconee (Babcock and Wilcox 15 x 15 design) may be stored safely in the reracked spent fuel pools. The SER found the material, structural and pool cooling aspects associated with the expanded racks and spent fuel pool structure to be acceptable. These aspects are identical for both McGuire units, including material compositions, codes, standards, design loads, spent fuel pool cooling equipment, and overall heat removal capacities for both pools. No changes in material, structural or cooling aspects are associated with the proposed amendments and our previous conclusions continue to apply.

The SER for Amendments 35 and 16 concluded that the NRC's evaluation of the licensee's capacity expansion submittal had not changed the conclusions in SER Supplement No. 2 dated March 1979 related to the storing of Oconee fuel at McGuire. SER Supplement No. 2 had evaluated the consequences of dropping an Oconee fuel assembly during handling at McGuire and found the consequences

to be less severe than the dropping of a McGuire fuel assembly and within the 10 CFR Part 100 guideline values. Because of the identical and common features and procedures of McGuire Units 1 and 2 noted above and because no increase in the storage of Oconee fuel is proposed, these findings continue to apply for the proposed amendments.

The SER issued in connection with Amendments 35 and 16 also included an estimate of the increment in onsite occupational dose during normal operations after the pool rerack modifications as a result of the increase in stored fuel assemblies and concluded that storing additional fuel in the two pools would not result in any significant increase in doses received by workers. The assessment was based upon a worst case radionuclide concentration in the spent fuel pool recognizing the proposed combinations of Oconee and McGuire generated spent fuel assemblies (the spent fuel assemblies themselves contributed a negligible amount to dose rates in the pool area because of the depth of water shielding the fuel). Because the allowed total inventory of Oconee spent fuel for the McGuire site would not be increased, the proposed division of that inventory of Oconee spent fuel between the two identical McGuire spent fuel pools would not increase either pool's concentration of radionuclides relative to that previous worst case. Consequently, our previous conclusions (that the increase in onsite occupational dose to workers during normal operations would be small and should not affect the licensee's ability to maintain individual occupational dose to as low as is reasonably achievable levels and within 10 CFR Part 20) are not changed for the proposed amendments.

CONCLUSION

Because of identical designs, supporting systems and structures, common site, and common emergency, health physics, security and safety procedures, no adverse changes in the safety issues associated with possession, receipt, and storage of irradiated Oconee fuel assemblies at McGuire are associated with these amendments. On the basis of the foregoing reviews, and particularly the fact that the design of the Unit 2 spent fuel pool is identical to that of Unit 1 and that there would be no increase in the inventory of Oconee fuel for the McGuire site relative to that amount previously authorized for McGuire Unit 1, the staff concludes that the proposed amendments are acceptable.

SAFETY CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register on May 22, 1985 (50 FR 21152) and consulted with the state of North Carolina. No public comments were received, and the state of North Carolina did not have any comments.

The staff 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, 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.

Principal Contributor: D. Hood, Licensing Branch No. 4, DL

Dated: July 26, 1985

July 26, 1985

AMENDMENT NO. 44 TO FACILITY OPERATING LICENSE NPF-9 - McGUIRE NUCLEAR STATION, UNIT 1
AMENDMENT NO. 25 TO FACILITY OPERATING LICENSE NPF-17 - McGUIRE NUCLEAR STATION, UNIT 2

DISTRIBUTION

Docket File

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Local PDR

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LB#4 Reading

EAdensam

MDucan

Attorney, OELD

RDiggs ADM

TBarnhart (8)

ELJordan, DEQA:I&E

LJHarmon, I&E File

DHood

BGrimes

JPartlow

EButcher

ti...

ENGLISH TRANSLATION
Certified by *Jh mcl*