August 29, 1986

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.⁶¹TO FACILITY OPERATING LICENSE NPF-9 AND AMENDMENT NO.⁴²TO FACILITY OPERATING LICENSE NPF-17 - MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No_{1}^{61} to Facility Operating License NPF-9 and Amendment No. 42 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 March 20, 1986, and supplemental letters dated May 23, June 4, July 10, and August 5 1986.

The amendments revise paragraph 2.K.e of NPF-9 and paragraph 2.J.e. of NPF-17 to authorize use of Transnuclear, Inc., multielement spent fuel shipping casks, Model Numbers TN-8 or TN-8L, for receipt of irradiated Oconee fuel at McGuire. The amendments are effective as of their date of issuance.

A copy of the related safety evaluation supporting Amendment No.⁶¹to Facility Operating License NPF-9 and Amendment No.⁴²to Facility Operating License NPF-17 is enclosed.

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

Sincerely,

Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Enclosures:

- 1. Amendment No. 61to NPF-9
- 2. Amendment No. 42to NPF-17
- 3. Safety Evaluation

cc w/enclosures: See next page

***SEE PREVIOUS CONCURRENCE**

*DHood/rad PWR/DPWR-A	*MDuncan PWR#4/DPWR-A	*BJYoungblood PWR#4/DPWR-A
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AMENDMENT NO. 61 TO FACILITY OPERATING LICENSE NPF-9 AMENDMENT NO. 42 TO FACILITY OPERATING LICENSE NPF-17 MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

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DISTRIBUTION:

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Docket File NRC PDR Local PDR PRC System PWR#4 Rdg MDuncan BJYoungb1ood DHood **OELD** LHarmon EJordan BGrimes **JPartlow** TBarnhart (8) WJones EButcher NThompson ACRS (10) OPA LFMB



August 29, 1986

Docket Nos. 50-369 and 50-370

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The amendments revise paragraph 2.K.e of NPF-9 and paragraph 2.J.e. of NPF-17 to authorize use of Transnuclear, Inc., multielement spent fuel shipping casks, Model Numbers TN-8 or TN-8L, for receipt of irradiated Oconee fuel at McGuire. The amendments are effective as of their date of issuance.

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Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Enclosures:

- 1. Amendment No.61to NPF-9
- 2. Amendment No.42to NPF-17
- 3. Safety Evaluation

cc w/enclosures: See next page

Mr. H. B. Tucker Duke Power Company

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

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

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

L. L. Williams Operating Plants Projects Regional Manager Westinghouse Electric Corporation - R&D 701 P. O. Box 2728 Pittsburgh, Pennsylvania 15230 McGuire Nuclear Station

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

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

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

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



DUKE POWER COMPANY

DOCKET NO. 50-369

McGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 61 License No. NPF-9

- The Nuclear Regulatory Commission (the Commission) has found that: 1.
 - The application for amendment to the McGuire Nuclear Station, Unit 1 Α. (the facility) Facility Operating License No. NPF-9 filed by the Duke Power Company (the licensee) dated March 20, 1986, and supplemented May 23, June 4, July 10, and August 5 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations as set forth in 10 CFR Chapter I;
 - The facility will operate in conformity with the application, as Β. amended, the provisions of the Act, and the regulations of the Commission;
 - There is a reasonable assurance (i) that the activities authorized by С. 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;
 - The issuance of this amendment will not be inimical to the common D. defense and security or to the health and safety to the public; and
 - The issuance of this amendment is in accordance with 10 CFR Part 51 Ε. of the Commission's regulations and all applicable requirements have been satisfied.

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- 2. Accordingly, Facility Operating License No. NPF-9 is changed as follows:
 - A. Change paragraph 2.K.e to read:

- e. Receipt of irradiated Oconee fuel shall be limited by the use of the NFS-4 (NAC-1), NLI-1/2, TN-8, or TN-8L spent fuel casks.
- 3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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HocD ARL

Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Date of Issuance: August 29, 1986



DUKE POWER COMPANY

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 42 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 March 20, 1986, and supplemented May 23, June 4, July 10, and August 5 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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 regulations of the Commission;
 - C. There is a 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 to 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. Change paragraph 2.J.e to read:
 - e. Receipt of irradiated Oconee fuel shall be limited by the use of the NFS-4 (NAC-1), NLI-1/2, TN-8, or TN-8L spent fuel casks.
- 3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

H 0 ARL

Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

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Date of Issuance: August 29, 1986



SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.61TO FACILITY OPERATING LICENSE NPF-9

AND AMENDMENT NO42TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

DOCKET NOS. 50-369 AND 50-370

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

These amendments expand subparagraph 2.K.e of Facility Operating License NPF-9 for Unit 1 and corresponding subparagraph 2.J.e of Facility Operating License NPF-17 for Unit 2 to authorize use of Transnuclear, Inc. multielement spent fuel shipping cask, Model Numbers TN-8 and TN-8L, for receipt of irradiated Oconee fuel. Prior to these amendments, these subparagraphs of the licenses limited such receipt of Oconee spent fuel at McGuire to use of the NFS-4 (NAC-1) and NLI-1/2 casks, which are single-element casks. The new author-ization is, therefore, in addition to existing authorized casks and is otherwise subject to all previous requirements of license paragraphs 2.K. (Unit 1) and 2.J. (Unit 2).

This change was requested in the licensee's application for amendments dated March 20, 1986. Additional information in support of the requested change was provided by the licensee's letters dated May 23, July 10, and August 5 1986. By related letter dated June 4, 1986, the licensee registered as a user of the TN-8 and TN-8L casks pursuant to 10 CFR 71.12.

EVALUATION

TN-8 and TN-8L are multielement truck casks which are physically capable of accommodating up to three PWR fuel assemblies. The two models have the same dimensions, but TN-8L is about one ton lighter than TN-8's forty tons because it has fewer external cooling fins and, hence, a lower maximum authorized heat load. These casks have received a Certificate of Compliance for Radioactive Materials Packages, which was recently renewed by the Commission (Certificate No. 9015, Revision 12, expiration date January 31, 1991). By letter dated June 4, 1986, Duke Power Company has registered with the Commission as a user of TN-8 and TN-8L shipping casks pursuant to section 71.12 of 10 CFR 71.

By letter dated March 20, 1986, the licensee notes that in order to maintain acceptable reserve spent fuel storage capacity (needed for potential full core off-loading, reload batch and upender access) in the shared Oconee Units 1 and 2 spent fuel pool, it is necessary to use a multielement spent fuel ship-

8609030056 860829 PDR ADOCK 05000369 P PDR ping cask. The licensee notes that in addition to maintaining the necessary shipment rate, multielement casks have the advantage of fewer shipments (and hence lower probability of adverse offsite impact), lower station manpower requirements and reduced total radiation exposure to personnel.

In support of its request for authorization to use TN-8 and TN-8L multielement spent fuel casks for shipping Oconee irradiated fuel to McGuire, the licensee provided cask drop analyses, discussed the effects of the change upon the guide-lines of NUREG-0612 "Control of Heavy Loads at Nuclear Power Plants," and identified certain minor design modifications to the decontamination pit and plant operating procedures associated with use of the new casks.

The licensee's spent fuel cask drop analyses for the TN-8 and TN-8L spent fuel casks are an update of the analyses provided in Amendment 38 of the FSAR. The analyses evaluated the consequences of dropping or tipping, or a combination of both, of the TN-8 and TN-8L casks in the McGuire spent fuel handling building. In order to bound the worst cases the analyses considered the following three cases:

- 1. The cask handling crane is assumed to be traveling at its maximum speed (50 feet per minute) and hits the crane stops nearest the spent fuel pool, causing the cask to swing toward the spent fuel pool, break free at the top of its swing, and fall.
- 2. The cask handling crane is assumed to be traveling at its maximum speed (50 feet per minute) and to hit the crane stops nearest the spent fuel pool. The cask is assumed to be at its highest allowed position (one foot above the floor), and to break free the instant before the upward swing motion begins, and therefore, to fall in a vertical position.
- 3. The cask is assumed to be dropped so as to catch the far edge of the cask pit and then to fall toward the spent fuel pool.

We have reviewed the analyses provided by the licensee and agree that the three analyzed accidents provide an adequate bounding envelope for purposes of the cask drop accident evaluation.

Administrative control procedures already in the Plant Technical Specifications, as well as in plant cask handling procedures, restrict the travel path of the cask, and thus provide additional assurance that the cask will not fall and tip into the spent fuel pool. The specifications (and procedures) require cask transfer along a prescribed path (see TS Figure 3.9-1) that approaches the spent fuel cask pit from the side rather than the end (i.e., the cask is precluded from approaching the cask pit in the direction of the spent fuel pool). The prescribed path assures that the cask's center of gravity will be located over the spent fuel cask pit such that any tipping of a dropped cask would be within the confines of the cask pit. The prescribed path also precludes the cask from passing over or near safety related equipment and restricts the cask to areas designed to accommodate a dropped cask with only negligible damage to the structural concrete. conclude that with the administrative control procedures, there is little likelihood that the cask will enter the spent fuel pool should it break free as postulated during cask handling. We also conclude that such an accident would not cause significant structural damage or damage to any safety related equipment.

In March 1985 the staff completed its review of the McGuire Units 1 and 2 overhead handling systems and programs for handling heavy loads in the vicinity of the reactor vessel or spent fuel pool or in other areas where a load drop may damage safe shutdown systems or spent fuel. The staff review was based upon the guidelines of NUREG-0612. Plants conforming to these guidelines (1) 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) have provided sufficient operator training, handling system design, load-handling instructions, and equipment inspection to ensure reliable operation of the handling systems. The staff concluded that these systems and programs for McGuire met the guidelines of NUREG-0612. The staff has reevaluated the information provided by the licensee for that NUREG-0612 review in addition to evaluating the cask drop accident analyses, the operating procedures for handling the TN-8 and TN-8L spent fuel casks, the TN-8 and TN-8L spent fuel cask designs and associated handling equipment, and plant staff training. The staff finds that, in addition to accepting the cask drop analyses and administrative controls for cask handling, as discussed above, the licensee is providing sufficient operator training, the handling system design has sufficient capacity to handle the casks, and the load-handling instructions and equipment inspection will assure reliable operation of the handling systems. Therefore, the staff concludes that the cask handling system and associated procedures at McGuire meet the guidelines of NUREG-0612 for the TN-8 and TN-8L spent fuel casks.

The requirements for obtaining a Certificate of Compliance, including those associated with offsite transportation accidents, impose more severe conditions on the cask and its contents than would be experienced during handling at the McGuire site. The fuel and cask would remain intact in the event of a dropped cask during handling at the McGuire site, and therefore the radiological consequences would be no more severe than those associated with use of the single-element casks. Also, use of the multielement cask results in less handling, and therefore reduced occupational exposure to plant staff.

Accordingly, we conclude that there is reasonable assurance that facility operations associated with use of the spent fuel casks in the manner provided by these amendments will not cause undue risk to the health and safety of the public and that use of TN-8 and TN-8L spent fuel trucking casks for receipt of irradiated fuel at McGuire is, therefore, acceptable.

ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.32, the Commission has determined that the issuance of these amendments will have no significant impact on the environment (51 FR 30593).

CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (51 FR 19428) on May 29, 1986, and 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.

Principal Contributors: Darl S. Hood, PWR#4, PWR Licensing-A R. Giardina, Plant Systems Branch, PWR-A

Dated: August 29, 1986



August 29, 1986

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.⁶¹TO FACILITY OPERATING LICENSE NPF-9 AND AMENDMENT NO.⁴²TO FACILITY OPERATING LICENSE NPF-17 - MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

The Nuclear Regulatory Commission has issued the enclosed Amendment No.⁶¹to Facility Operating License NPF-9 and Amendment No.⁴²to Facility Operating License NPF-17 for the McGuire Nuclear Station, Units 1 and 2. These amendments are issued in response to your application dated March 20, 1986, and supplemental letters dated May 23, June 4, July 10, and August 5 1986.

The amendments revise paragraph 2.K.e of NPF-9 and paragraph 2.J.e. of NPF-17 to authorize use of Transnuclear, Inc., multielement spent fuel shipping casks, Model Numbers TN-8 or TN-8L, for receipt of irradiated Oconee fuel at McGuire. The amendments are effective as of their date of issuance.

A copy of the related safety evaluation supporting Amendment No.61to Facility Operating License NPF-9 and Amendment No.42to Facility Operating License NPF-17 is enclosed.

Notice of issuance will be included in the Commission's next bi-weekly <u>Federal</u> Register notice.

Sincerely,

PARL HOST

Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Enclosures:

- 1. Amendment No.61to NPF-9
- 2. Amendment No.42to NPF-17
- 3. Safety Evaluation

cc w/enclosures: See next page

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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

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McGuire Nuclear Station

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



DUKE POWER COMPANY

DOCKET NO. 50-369

MCGUIRE NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. ⁶¹ 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 March 20, 1986, and supplemented May 23, June 4, July 10, and August 5 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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 regulations of the Commission;
 - C. There is a 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 to 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.e to read:
 - e. Receipt of irradiated Oconee fuel shall be limited by the use of the NFS-4 (NAC-1), NLI-1/2, TN-8, or TN-8L spent fuel casks.
- 3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

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Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Date of Issuance: August 29, 1986



DUKE POWER COMPANY

DOCKET NO. 50-370

MCGUIRE NUCLEAR STATION, UNIT 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 42 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 March 20, 1986, and supplemented May 23, June 4, July 10, and August 5 1986, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act) and the Commission's 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 regulations of the Commission;
 - C. There is a 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 to 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. Change paragraph 2.J.e to read:
 - e. Receipt of irradiated Oconee fuel shall be limited by the use of the NFS-4 (NAC-1), NLI-1/2, TN-8, or TN-8L spent fuel casks.
- 3. This license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Darl Hood, Project Manager PWR Project Directorate #4 Division of PWR Licensing-A

Date of Issuance: August 29, 1986



SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO.61TO FACILITY OPERATING LICENSE NPF-9

AND AMENDMENT NO42TO FACILITY OPERATING LICENSE NPF-17

DUKE POWER COMPANY

DOCKET NOS. 50-369 AND 50-370

MCGUIRE NUCLEAR STATION, UNITS 1 AND 2

INTRODUCTION

These amendments expand subparagraph 2.K.e of Facility Operating License NPF-9 for Unit 1 and corresponding subparagraph 2.J.e of Facility Operating License NPF-17 for Unit 2 to authorize use of Transnuclear, Inc. multielement spent fuel shipping cask, Model Numbers TN-8 and TN-8L, for receipt of irradiated Oconee fuel. Prior to these amendments, these subparagraphs of the licenses limited such receipt of Oconee spent fuel at McGuire to use of the NFS-4 (NAC-1) and NLI-1/2 casks, which are single-element casks. The new authorization is, therefore, in addition to existing authorized casks and is otherwise subject to all previous requirements of license paragraphs 2.K. (Unit 1) and 2.J. (Unit 2).

This change was requested in the licensee's application for amendments dated March 20, 1986. Additional information in support of the requested change was provided by the licensee's letters dated May 23, July 10, and August 5 1986. By related letter dated June 4, 1986, the licensee registered as a user of the TN-8 and TN-8L casks pursuant to 10 CFR 71.12.

EVALUATION

TN-8 and TN-8L are multielement truck casks which are physically capable of accommodating up to three PWR fuel assemblies. The two models have the same dimensions, but TN-8L is about one ton lighter than TN-8's forty tons because it has fewer external cooling fins and, hence, a lower maximum authorized heat load. These casks have received a Certificate of Compliance for Radioactive Materials Packages, which was recently renewed by the Commission (Certificate No. 9015, Revision 12, expiration date January 31, 1991). By letter dated June 4, 1986, Duke Power Company has registered with the Commission as a user of TN-8 and TN-8L shipping casks pursuant to section 71.12 of 10 LFR 71.

By letter dated March 20, 1986, the licensee notes that in order to maintain acceptable reserve spent fuel storage capacity (needed for potential full core off-loading, reload batch and upender access) in the shared Oconee Units 1 and 2 spent fuel pool, it is necessary to use a multielement spent fuel ship-

ping cask. The licensee notes that in addition to maintaining the necessary shipment rate, multielement casks have the advantage of fewer shipments (and hence lower probability of adverse offsite impact), lower station manpower requirements and reduced total radiation exposure to personnel.

In support of its request for authorization to use TN-8 and TN-8L multielement spent fuel casks for shipping Oconee irradiated fuel to McGuire, the licensee provided cask drop analyses, discussed the effects of the change upon the guidelines of NUREG-0612 "Control of Heavy Loads at Nuclear Power Plants," and identified certain minor design modifications to the decontamination pit and plant operating procedures associated with use of the new casks.

The licensee's spent fuel cask drop analyses for the TN-8 and TN-8L spent fuel casks are an update of the analyses provided in Amendment 38 of the FSAR. The analyses evaluated the consequences of dropping or tipping, or a combination of both, of the TN-8 and TN-8L casks in the McGuire spent fuel handling building. In order to bound the worst cases the analyses considered the following three cases:

- 1. The cask handling crane is assumed to be traveling at its maximum speed (50 feet per minute) and hits the crane stops nearest the spent fuel pool, causing the cask to swing toward the spent fuel pool, break free at the top of its swing, and fall.
- 2. The cask handling crane is assumed to be traveling at its maximum speed (50 feet per minute) and to hit the crane stops nearest the spent fuel pool. The cask is assumed to be at its highest allowed position (one foot above the floor), and to break free the instant before the upward swing motion begins, and therefore, to fall in a vertical position.
- 3. The cask is assumed to be dropped so as to catch the far edge of the cask pit and then to fall toward the spent fuel pool.

We have reviewed the analyses provided by the licensee and agree that the three analyzed accidents provide an adequate bounding envelope for purposes of the cask drop accident evaluation.

Administrative control procedures already in the Plant Technical Specifications, as well as in plant cask handling procedures, restrict the travel path of the cask, and thus provide additional assurance that the cask will not fall and tip into the spent fuel pool. The specifications (and procedures) require cask transfer along a prescribed path (see TS Figure 3.9-1) that approaches the spent fuel cask pit from the side rather than the end (i.e., the cask is precluded from approaching the cask pit in the direction of the spent fuel pool). The prescribed path assures that the cask's center of gravity will be located over the spent fuel cask pit such that any tipping of a dropped cask would be within the confines of the cask pit. The prescribed path also precludes the cask from passing over or near safety related equipment and restricts the cask to areas designed to accommodate a dropped cask with only negligible damage to the structural concrete. We have reviewed the licensee's analyses of the fuel cask drop accident and conclude that with the administrative control procedures, there is little likelihood that the cask will enter the spent fuel pool should it break free as postulated during cask handling. We also conclude that such an accident would not cause significant structural damage or damage to any safety related equipment.

In March 1985 the staff completed its review of the McGuire Units 1 and 2 overhead handling systems and programs for handling heavy loads in the vicinity of the reactor vessel or spent fuel pool or in other areas where a load drop may damage safe shutdown systems or spent fuel. The staff review was based upon the guidelines of NUREG-0612. Plants conforming to these guidelines (1) 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) have provided sufficient operator training, handling system design, load-handling instructions, and equipment inspection to ensure reliable operation of the handling systems. The staff concluded that these systems and programs for McGuire met the guidelines of NUREG-0612. The staff has reevaluated the information provided by the licensee for that NUREG-0612 review in addition to evaluating the cask drop accident analyses, the operating procedures for handling the TN-8 and TN-8L spent fuel casks, the TN-8 and TN-8L spent fuel cask designs and associated handling equipment, and plant staff training. The staff finds that, in addition to accepting the cask drop analyses and administrative controls for cask handling, as discussed above, the licensee is providing sufficient operator training, the handling system design has sufficient capacity to handle the casks, and the load-handling instructions and equipment inspection will assure reliable operation of the handling systems. Therefore, the staff concludes that the cask handling system and associated procedures at McGuire meet the guidelines of NUREG-0612 for the TN-8 and TN-8L spent fuel casks.

The requirements for obtaining a Certificate of Compliance, including those associated with offsite transportation accidents, impose more severe conditions on the cask and its contents than would be experienced during handling at the McGuire site. The fuel and cask would remain intact in the event of a dropped cask during handling at the McGuire site, and therefore the radiological consequences would be no more severe than those associated with use of the single-element casks. Also, use of the multielement cask results in less handling, and therefore reduced occupational exposure to plant staff.

Accordingly, we conclude that there is reasonable assurance that facility operations associated with use of the spent fuel casks in the manner provided by these amendments will not cause undue risk to the health and safety of the public and that use of TN-8 and TN-8L spent fuel trucking casks for receipt of irradiated fuel at McGuire is, therefore, acceptable.

ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.32, the Commission has determined that the issuance of these amendments will have no significant impact on the environment (51 FR 30593).

CONCLUSION

The Commission made a proposed determination that the amendments involve no significant hazards consideration which was published in the Federal Register (51 FR 19428) on May 29, 1986, and 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.

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Dated: August 29, 1986