



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

DOCKETED  
USNRC

July 18, 1985

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Alan S. Rosenthal, Chairman  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Thomas S. Moore  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Howard A. Wilber  
Atomic Safety and Licensing Appeal Board  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

In the Matter of  
DUKE POWER COMPANY, ET AL.  
(Catawba Nuclear Station, Units 1 and 2)  
Docket Nos. 50-413 and 50-414 *OL*

Dear Members of the Appeal Board:

The Office of Nuclear Material Safety and Safeguards has recently issued Special Nuclear Material License No. SNM-1949 to Duke Power Company, et al. authorizing at Catawba Unit 2 the receipt, possession, inspection and storage of special nuclear material in the form of unirradiated nuclear fuel assemblies, and the receipt, possession, inspection and storage of U-235 fission chambers and a Pu-Be neutron source. I am enclosing for your information a copy of the materials license package containing the license as well as the documents supporting the issuance thereof.

Copies of this package are being forwarded to the members of the two Catawba licensing boards as well as to the persons on the service list.

Sincerely,

*George E. Johnson*  
George E. Johnson  
Counsel for NRC Staff

Enclosure: As stated

cc w/encl: Service List

FCUP:KKK  
70-3002  
SNM-1949

JUL 10 1985

Duke Power Company  
ATTN: Mr. Hal B. Tucker, Vice President  
Nuclear Production  
P.O. Box 33189  
Charlotte, North Carolina 28242

Gentlemen:

Enclosed is the Nuclear Regulatory Commission (NRC) License No. SNM-1949 which authorizes the receipt, possession, inspection, and storage of uranium enriched in the U-235 isotope contained in fuel assemblies and fission chambers. This license authorizes the storage of fuel assemblies in their shipping containers, in the New Fuel Storage Vault, and in the Spent Fuel Storage Facility. In addition, the license authorizes the receipt, possession, inspection, use, and storage of a Pu-Ba neutron source. All materials are for use at the Catawba Nuclear Station, Unit 2.

The license also authorizes the packaging of fuel assemblies for delivery to a carrier for transport. This latter authority enables you to return damaged fuel assemblies to another location, e.g., return to the manufacturer. The delivery of the assemblies to a carrier must be in accordance with 10 CFR Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions," copy enclosed. In this regard, your attention is directed to 10 CFR 71.12(b) which provides a general license under specified conditions for the use of certain shipping packages which have been licensed for use by another licensee.

Also enclosed are six copies of Amendment No. 5 to Indemnity Agreement No. B-100, for your review and acceptance. Please return one signed copy.

The NRC uses an electronic data processing system to record the location, by licensee, of special nuclear material. This system uses a 3-letter Reporting Identification Symbol (RIS) to identify licensees who submit the material transfer reports and periodic material status reports in accordance with 10 CFR 70.53 and 70.54 of the Commission's regulations. For this purpose, you should use the following RIS:XNE, previously assigned to you. This symbol is to be used in completing the transfer reports and the periodic material status reports and should be used in any other correspondence with the NRC relative to such reports. You should also note the requirements of 10 CFR 70.51(b), (c), and (d) regarding records, material control and accounting procedures, and physical inventories. Your cooperation is appreciated.

Your application for a license requested an exemption from the provisions of 10 CFR 70.24. Such an exemption would relieve you from the requirement of having a criticality alarm system. Because of the inherent features associated

JUL 10 1985

with the storage and inspection of unirradiated fuel, sealed detectors, and Pu-Be source, you have shown good cause for being granted the exemption. The Commission has determined that such an exemption is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest.

This license is issued following preparation of an Environmental Assessment related to the proposed action. Based on this Assessment, a Finding of No Significant Impact has been prepared and approved pursuant to 10 CFR Part 51.

Copies of this Finding, which was published in the Federal Register on April 30, 1985, and the supporting Environmental Assessment are enclosed. Also enclosed is our Safety Evaluation Report in support of this license.

Sincerely,

Original Signed By:

W. T. Crow

W. T. Crow, Acting Chief  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

Enclosures:

1. Material License No. SNM-1949
2. 10 CFR Part 71
3. Amendment No. 5 to  
Indemnity Agreement No. B-100
4. Finding of No Significant Impact
5. Environmental Assessment
6. Safety Evaluation Report

DISTRIBUTION

Docket Nos. 70-3002	GBennington, SGMT	KJabbour, NRR	KKodali
50-414	WBrown, SGFF	RFonner, ELD	Region II
NMSS R/F	DWeiss, LFMB	GJohnson, ELD	LCobb, IE
FCUP R/F	SHO	JSaltzman, SP	PDR
VLTharpe	PSkinner, Sr. Res. Insp.	NKetzlach	

\*See previous concurrence sheet

OFC: FCUP*	:FCUP	:FCUF*	:FCUF	:NRR	:ELD	:ELD*
NAME:KKodali/as:NKetzlach:VLTharpe	:WTCrow	:KJabbour	:RFonner	:GJohnson		
DATE:7/08/85	:7/10/85	:7/08/85	:7/10/85	:7/10/85	:7/ /85	:7/08/85
OFC: SP	:SG*	:	:	:	:	:
NAME:JSaltzman	:WBrown	:	:	:	:	:
DATE:7/10/85	:7/09/85	:	:	:	:	:

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with the storage and inspection of unirradiated fuel, sealed detectors, and Pu-Be source, the NRC staff has determined that you have shown good cause for being granted the exemption and that such an exemption, which is authorized by law, will not endanger life or property or the common defense and security and is otherwise in the public interest.

This license is issued following preparation of an Environmental Assessment related to the proposed action. Based on this Assessment, a Finding of No Significant Impact has been prepared and approved pursuant to 10 CFR Part 51.

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W. T. Crow, Acting Chief  
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OFC: FCUP	:FCUP	:FCUF	:FCUF	:NRR	:ELD	:ELD
NAME:KKodali/as:NKetzlach:VLTharpe:WTCrow:KJabbour:RFonner:GJohnson						
DATE:7/ /85	:7/ /85	:7/08/85	:7/ /85	:7/ /85	:7/ /85	:7/ /85
OFC: SP	:SG	:	:	:	:	:
NAME:JSaltzman:WBrown:						
DATE:7/ /85	:7/9/85	:	:	:	:	:

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## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensees*		
Duke Power Company		
North Carolina Municipal Power Agency Number 1		
1. North Carolina Electric Membership Corporation	License number	SNM-1949
Piedmont Municipal Power Agency		
2. Saluda River Electric Cooperative, Inc.		
P. O. Box 33189		
Charlotte, North Carolina		
4. Expiration date July 9, 1990, or **		
5. Docket or Reference No. 70-3002		
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Uranium enriched in the U-235 isotope	A. In unirradiated reactor fuel assemblies	A. 2150 Kilograms of U-235 in uranium enriched to no more than 3.15 w/o U-235
B. Uranium enriched in the U-235 isotope	B. Fission chambers	B. 60 milligrams U-235 in uranium at any enrichment
C. Plutonium-238	C. Pu-Be neutron source	C. 5 curies Pu-238

## 9. Authorized Use:

For receipt, possession, inspection, storage, and packaging of fuel for delivery to a carrier in accordance with the statements, representations, and conditions specified in the DPC's application dated June 20, 1984, and its supplements dated January 18, June 19, June 21, and July 1, 1985.

## 10. Authorized Place of Use:

The Catawba Nuclear Station, Unit 2, located in York County, South Carolina, as described in the aforesaid application.

\* Duke Power Company (DPC) is authorized to act as agent for the North Carolina Municipal Power Agency Number 1, North Carolina Electric Membership Corporation, Piedmont Municipal Power Agency, and the Saluda River Electric Cooperative, Inc., and has exclusive responsibility and control over the physical construction, operation, and maintenance of the facility.

\*\* Upon conversion of Construction Permit No. CPPR-117 to an operating license, whichever is earlier.



MATERIALS LICENSE  
SUPPLEMENTARY SHEET

COPY

License number

SNM-1949

Docket or Reference number

70-3002

11. The minimum technical qualifications for the Station Manager shall be in accordance with Section 4.2.1, "Plant Manager," ANSI N18.1-1971.
12. The minimum technical qualifications for Superintendent of Operations shall be in accordance with Section 4.3.2, "Supervisors Not Requiring AEC Licenses," ANSI N18.1-1971.
13. The minimum technical qualifications for Reactor Engineer shall be in accordance with Section 4.4.1, "Reactor Engineering," ANSI N18.1-1971.
14. The minimum technical qualifications for System Health Physicist shall be in accordance with the requirements for "Radiation Protection Manager," Regulatory Guide 1.8, September 1975.
15. All preoperational testing of fuel handling equipment related to activities authorized by this license shall be reviewed and approved by DPC before receipt of fuel onsite. Final review and approval of all preoperational testing of fuel handling equipment shall be required by the Superintendent of Operations or equivalent qualified designee. This includes the testing of the following:
  - a. New Assembly Handling Fixture,
  - b. Rod Cluster Control Assembly (RCCA) Handling Fixture,
  - c. New Fuel Elevator,
  - d. Spent Fuel Pool Manipulator Crane,
  - e. Indexing of Spent Fuel Pool Manipulator Crane,
  - f. Whiting 10 Ton Crane,
  - g. New Fuel Storage Racks in the New Fuel Storage Vault, and
  - h. Spent Fuel Storage Racks in the Spent Fuel Storage Facility.
16.
  - a. No more than a total of two fuel assemblies shall be out of approved shipping containers or fuel assembly storage racks at any one time.
  - b. The minimum edge-to-edge distance between the above two fuel assemblies, the shipping container array, and the storage rack arrays shall be 12 inches.
17. Fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.
18. New fuel assemblies may be stored in the Spent Fuel Storage Facility subject to the following conditions:
  - a. The maximum U-235 enrichment shall be 3.15 w/o.
  - b. The fuel assemblies shall be stored dry in a checkerboard pattern.

COPY

MATERIALS LICENSE  
SUPPLEMENTARY SHEET

COPY

License number

SNM-1949

Docket or Reference number

70-3002

- c. The Reactor Engineer or equivalent qualified designee shall verify correct fuel assembly location after insertion of each assembly into the assigned storage rack in accordance with a prepared written procedure approved by the Superintendent of Operations or equivalent qualified designee.
- d. An independent loading verification shall be made by a Quality Control Inspector.
- e. The Reactor Engineer or equivalent qualified designee and the Quality Control Inspector shall each sign a document assuring proper storage each fuel assembly.
19. DPC is hereby exempted from the provisions of 10 CFR 70.24 insofar as this section applies to materials held under this license.
20. DPC shall comply with provisions of Annex A, "License Condition for Leak Testing Sealed Plutonium Sources."
21. DPC shall maintain and fully implement all provisions of the Commission approved Physical Security Plan, including any changes made pursuant to the authority of 10 CFR 70.32(e). The approved Physical Security Plan consists of DPC's initially submitted Plan titled, "Catawba Nuclear Station (Unit 2) SNM of Low Strategic Significance Storage and In-Transit Security Plan," dated April 26, 1985, and as amended by Attachment 1 to DPC's letter dated June 19, 1985. The Physical Security Plan identified by this condition shall be withheld from public disclosure pursuant to 10 CFR 2.790(d).

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

W. T. Crow

Date:

By:

Division of Fuel Cycle and  
Material Safety, NMSS  
Washington, D.C. 20555VLT  
7/1/85

7/1/85

COPY

ANNEX A

LICENSE CONDITION FOR LEAK TESTING  
SEALED PLUTONIUM SOURCES

- A. Each plutonium source shall be tested for leakage at intervals not to exceed six (6) months. In the absence of a certificate from a transferor indicating that a test has been made within six (6) months prior to the transfer, the sealed source shall not be put into use until tested.
- B. The test shall be capable of detecting the presence of 0.005 microcuries of alpha contamination on the test sample. The test sample shall be taken from the source or from appropriate accessible surfaces of the device in which the sealed source is permanently or semipermanently mounted or stored. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Commission.
- C. If the test reveals the presence of 0.005 microcurie or more of removable alpha contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired by a person appropriately licensed to make such repairs or to be disposed of in accordance with the Commission regulations. Within five (5) days after determining that any source has leaked, the licensee shall file a report with the Division of Fuel Cycle and Material Safety, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, describing the source, the test results, the extent of contamination, the apparent or suspected cause of source failure, and the corrective action taken. A copy of the report shall be sent to the Director of the nearest NRC Inspection and Enforcement Office listed in Appendix D of Title 10, Code of Federal Regulations, Part 20.
- D. The periodic leak test required by this condition does not apply to sealed sources that are stored and not being used. The sources excepted from this test shall be tested for leakage prior to any use or transfer to another person unless they have been leak tested within six (6) months prior to the date of use or transfer.





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

Docket No. 50-413

AMENDMENT TO INDEMNITY AGREEMENT NO. B-100  
AMENDMENT NO. 5

Effective ~~JUL 10 1985~~, Indemnity Agreement No. B-100, between Duke Power Company, North Carolina Electric Membership Corporation and Saluda River Electric Cooperative, Inc. and the Nuclear Regulatory Commission, dated January 3, 1984, as amended, is hereby further amended as follows:

Item 1 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 1 - Licensees

Duke Power Company  
North Carolina Municipal Power Agency Number 1  
North Carolina Electric Membership Corporation  
Saluda River Electric Cooperative, Inc.  
Piedmont Municipal Power Agency

Address: 422 South Church Street  
Charlotte, North Carolina 28201

Item 3 of the Attachment to the indemnity agreement is deleted in its entirety and the following substituted therefor:

Item 3 - License number or numbers

SNM-1920	(From 12:01 a.m., January 3, 1984 to 12 midnight July 17, 1984 inclusive)
SNM-1949	(From 12:01 a.m., <del>JUL 10 1985</del> )
NPF-24	(From 12:01 a.m., July 18, 1984 to 12 midnight December 5, 1984 inclusive)


NPF-31

(From 12:01 a.m., December 6, 1984 to  
12 midnight January 16, 1985  
inclusive)

NPF-35

(From 12:01 a.m., January 17, 1985)

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

  
Jerome Saltzman, Assistant Director  
State and Licensee Relations  
Office of State Programs

Accepted \_\_\_\_\_

Accepted \_\_\_\_\_

By \_\_\_\_\_  
DUKE POWER COMPANY

By \_\_\_\_\_  
NORTH CAROLINA MUNICIPAL POWER  
AGENCY NUMBER 1

Accepted \_\_\_\_\_

Accepted \_\_\_\_\_

By \_\_\_\_\_  
NORTH CAROLINA ELECTRIC  
MEMBERSHIP CORPORATION

By \_\_\_\_\_  
SALUDA RIVER ELECTRIC  
COOPERATIVE, INC.

Accepted \_\_\_\_\_

By \_\_\_\_\_  
PIEDMONT MUNICIPAL POWER AGENCY

U.S. NUCLEAR REGULATORY COMMISSION

FINDING OF NO SIGNIFICANT IMPACT

ISSUANCE OF SPECIAL NUCLEAR MATERIAL LICENSE NO. SNM-1949

DUKE POWER COMPANY

YORK COUNTY, SOUTH CAROLINA

DOCKET NO. 70-3002

The U.S. Nuclear Regulatory Commission (the Commission) is considering the issuance of Special Nuclear Material License No. SNM-1949 to permit the receipt, possession, inspection, and storage of unirradiated nuclear fuel assemblies at the Catawba Nuclear Station in York County, South Carolina. The unirradiated fuel assemblies will be for eventual use in the Catawba Nuclear Station, Unit 2, once its operating license is issued.

The Commission's Division of Fuel Cycle and Material Safety has prepared an Environmental Assessment related to the issuance of Special Nuclear Material License No. SNM-1949. On the basis of this assessment, the Commission has concluded that the environmental impact created by the proposed licensing action would not be significant and does not warrant the preparation of an Environmental Impact Statement. Accordingly, it has been determined that a Finding of No Significant Impact is appropriate. The Environmental Assessment is available for public inspection and copying at the Commission's Public

Document Room, 1717 H Street, N.W., Washington, D.C. Copies of the Environmental Assessment may be obtained by calling (301) 427-4510 or by writing to the Uranium Fuel Licensing Branch, Division of Fuel Cycle and Material Safety, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555.

Dated at Silver Spring, Maryland this 24th day of April 1985.

FOR THE NUCLEAR REGULATORY COMMISSION

W. T. Crow, Acting Chief  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

OFC: FCUP	: FCUP	: FCUF	: FCUF	:	:
NAME: KKodali/as: NKetzlach: VLTharpe	: WTCrow	:	:	:	:
DATE: 4/9/85	: 4/11/85	: 4/18/85	: 4/24/85	:	:

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APR 24 1985

DOCKET NO.: 70-3002

APPLICANT: Duke Power Company (DPC)  
North Carolina Municipal Power Agency Number 1  
North Carolina Electric Membership Corporation  
Saluda River Electric Cooperative, Inc.  
Piedmont Municipal Power Agency

FACILITY: Catawba Nuclear Station (CNS), Unit 2  
York County, South Carolina

SUBJECT: ENVIRONMENTAL ASSESSMENT - LICENSE APPLICATION TO RECEIVE NEW  
FUEL

### Background

By letter dated June 20, 1984 and its supplement dated January 18, 1985, Duke Power Company (DPC), acting on its own behalf and as agents for the above utilities applied for an NRC license to permit the receipt, possession, inspection, and storage of special nuclear material in the form of unirradiated nuclear fuel assemblies. In addition, DPC as part of the license application, seeks authorization to receive, possess, inspect, and store U-235 fission chambers and a Pu-Be neutron source. The materials are for eventual use in CNS, Unit 2. In accordance with 10 CFR 51.21, the NRC has prepared this assessment of the environmental impacts that may be caused by issuance of the requested license. Because of the form and small amount (gram quantities) of nuclear materials contained in the fission chambers and Pu-Be neutron source, storage of these materials will pose no threat to the environment. Therefore, the discussion below will be limited to assessing the potential for environmental impacts resulting from the storage of new fuel assemblies at CNS, Unit 2.

### The Proposed Action

The proposed action is issuance of a license pursuant to 10 CFR 70 that will authorize DPC to receive, possess, inspect, and store 196 fresh fuel assemblies at CNS, Unit 2. The license has been requested by June 1, 1985, and would be effective until it can be superseded by DPC's operating license under 10 CFR 50. The fuel assemblies contain uranium dioxide ( $UO_2$ ) pellets that have a maximum uranium-235 enrichment of 3.15 percent by weight and are encapsulated in zircaloy tubing. Issuance of the license would result in the receipt, possession, inspection, and storage of the unirradiated fuel assemblies at CNS, Unit 2. The transport of new fuel to CNS, Unit 2, will be the responsibility of the fuel fabricator. However, the proposed license would authorize the applicant to transport, or deliver to a carrier for transport, the assemblies in approved packages if this should become necessary (e.g., to return defective fuel to the manufacturer).



APR 24 1985

### Need for the Proposed Action

The applicant proposes to receive and store fresh fuel prior to issuance of the Part 50 operating license in order to inspect the assemblies and to finalize fuel preparation (e.g., add necessary hardware) needed to load the fuel into the reactor core vessel. Actual core loading, however, will not be authorized by the proposed license. Early completion of this fuel handling will help avoid delays in the CNS, Unit 2, startup once its operating license is issued.

### Alternatives to the Proposed Action and their Environmental Impacts

Alternatives to the proposed action include complete denial of DPC's application. Assuming the operating license will eventually be issued, denial of the storage only license now would merely postpone new fuel receipt at CNS, Unit 2. Such action, as well as any other alternative that can be imagined, would not present an environmental advantage because, as discussed below, no environmental impacts are expected to result from the proposed action.

### Environmental Impacts of the Proposed Action

A Final Environmental Statement (NUREG-0921) associated with the full-scale operation of CNS, Unit 2, has already been issued by the NRC. Based on the evaluation in this statement, the environmental impacts of plant operation subject to proposed conditions for environmental protection are expected to be small. New fuel receipt and storage is only a small part of CNS, Unit 2's, overall operation that will eventually include handling of irradiated fuel which is significantly more hazardous. Accordingly, the environmental impact from handling unirradiated fuel is expected to be very minor.

Once at CNS, Unit 2, the new fuel will be received at the Fuel Building. In the Fuel Building, the new fuel will be stored temporarily in their shipping containers until they are to be removed and placed in their assigned storage locations. These storage locations are the New Fuel Storage Vault located in the New Fuel Storage Building and the spent fuel pool located in the Spent Fuel Storage Facility of CNS, Unit 2. The design of these storage locations, combined with plant procedures, will ensure acceptable protection of the fuel assemblies from excessive physical damage either under normal or abnormal conditions. Once placed in their storage locations, the new fuel assemblies will undergo inspection for contamination and damage. The presence of engineered-safety features and administrative controls minimize the likelihood of an accident situation occurring during fuel handling activities. Only a small amount, if any, of radioactive waste may be generated during this handling (e.g., smear papers or contaminated package material) and any waste that is produced will be properly stored onsite until it can be shipped to a licensed disposal facility.

APR 24 1985

In the event the applicant must return assemblies to the fuel fabricator, all packaging and transport of fuel will be in accordance with 10 CFR 71. The package will meet NRC approval requirements for normal conditions of transport and hypothetical accident conditions. No significant external radiation hazards are associated with the unirradiated assemblies because the radiation level from the clad fuel pellets is low and because the shipping packages must meet the external radiation standards in 10 CFR 71. Therefore, any shipment of unirradiated fuel by the applicant is expected to have an insignificant environmental impact.

In the unlikely event that an assembly (either within or outside its shipping container) is dropped during transfer, the fuel cladding is not expected to rupture. Even if the fuel rod cladding were breached and the pellets were released, an insignificant environmental impact would result. The fuel pellets are composed of a ceramic  $UO_2$  that have been pelletized and sintered to a very high density. In this form, release of  $UO_2$  aerosol is highly unlikely except under conditions of deliberate grinding. Additionally,  $UO_2$  is soluble only in acid solution so dissolution and release to the environment are extremely unlikely.

All fuel handling activities will be in accordance with approved procedures to assure nuclear criticality and radiation safety. Safety will be further assured by the presence of redundant engineering safeguards. Therefore, the proposed fuel handling and storage activities are critically safe (see the Safety Evaluation Report supporting this license) and no environmental impacts from an accidental criticality are expected.

### Conclusion

Based upon the information presented above, the environmental impacts associated with new fuel storage at CNS, Unit 2, are expected to be insignificant. Essentially no effluents, liquid or airborne, will be released and acceptable controls will be implemented to prevent a radiological accident. Therefore, in accordance with 10 CFR 51.31, a Finding of No Significant Impact is considered appropriate for this action.

Original signed by:

Kishore Kodali

Kishore K. Kodali  
Uranium Process Licensing Section  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

Approved by: Original signed by:  
W. T. Crow  
W. T. Crow, Section Leader

OFC: FCUP	: FCUP	: FCUF	: FCUF	: FCUP	: SW	:
NAME: KKodali/as: NKetzlach: VLTharpe: WTCrow	: SWyngarden	:	:	:	:	:
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JUL 10 1985

DOCKET NO: 70-3002

APPLICANTS: Duke Power Company (DPC)  
North Carolina Municipal Power Agency Number 1  
North Carolina Electric Membership Corporation  
Piedmont Municipal Power Agency  
Saluda River Electric Cooperative, Inc.

FACILITY: Catawba Nuclear Station (CNS), Unit 2

SUBJECT: SAFETY EVALUATION REPORT - REVIEW OF APPLICATION  
DATED JUNE 20, 1984, AND ITS SUPPLEMENTS DATED  
JANUARY 18, JUNE 19, JUNE 21, and JULY 1, 1985  
FOR A SPECIAL NUCLEAR MATERIALS LICENSE

I. INTRODUCTION

A. General

By application dated June 20, 1984, and its supplements dated January 18, June 19, June 21, and July 1, 1985, Duke Power Company (DPC) acting on its own behalf and as agent for the applicants listed above, requested authorization to receive, inspect, possess, and store enriched uranium contained in fresh fuel assemblies and fission chambers; and to receive, inspect, possess, store, and use a sealed Pu-Be neutron source. The materials are for eventual use in CNS, Unit 2.

On January 16, 1984, the Nuclear Regulatory Commission (NRC) issued Materials License No. SNM-1920 authorizing DPC to receive, possess, inspect, and store uranium contained in fresh fuel assemblies at its CNS, Unit 1 facility. In addition, License No. SNM-1920 also authorized the receipt and storage of fission chambers, Pu-238 contained in two Pu-Be neutron sources, and a plutonium alpha source set containing 2  $\mu$ Ci Pu-239 at CNS, Unit 1. Based on information provided by DPC, Unit 2 is nearly identical to Unit 1. This fact was confirmed in conversations with the NRR Project Manager, Senior Resident Inspector, utility staff members, and staff review of the two applications. Therefore, much of the work and analysis on the Unit 2 Safety Evaluation Report will be based on prior work performed by NRC staff on CNS, Unit 1.

By letter dated January 18, 1985, DPC supplemented their application by requesting that Piedmont Municipal Power Agency be included as a 25 percent partner in CNS, Unit 2.

JUL 10 1995

The materials license was requested to allow early receipt of the fuel for the purpose of inspection and preparation of the fuel for reactor loading. The materials license will automatically terminate upon issuance of the Part 50 operating license.

#### B. Fuel Assembly Design

The finished fuel assemblies for CNS, Unit 2, will be supplied by the Westinghouse Electric Corporation. Each fuel assembly contains 264 fuel pins, 24 guide thimble tubes, and 1 instrumentation thimble tube. The fuel pins, guide thimble tubes, and instrumentation thimble tube are spaced in a 17 x 17 array and supported by six zircaloy spacer grids, two inconel end grids, and two end fittings. Table 1 gives general fuel parameters that describe the fuel which will eventually be used in CNS, Unit 2.

TABLE 1

#### CATAWBA NUCLEAR STATION - UNIT 2

##### General Fuel Data

<u>Fuel Assembly Data</u>	<u>Inches</u>
Overall Length	151.6
Nominal Active Fuel Length	144.0
Fuel Rod Pitch	0.496
Rod Array	17 x 17
Rods Per Assembly	264
<u>Fuel Rod Data</u>	
Fuel Pellet Material	UO <sub>2</sub>
Outside Diameter	0.360
Cladding Thickness	0.0225
Cladding Inside Diameter	0.315
Fuel Pellet Immersion Density (% theoretical)	95.0
Fuel Pellet Diameter	0.3088

#### C. Location Description

The CNS, Unit 2, is a PWR located on the shore of Lake Wylie in York County, South Carolina. The construction permit, CPPR-117, was issued on August 7, 1975 (Docket Number 50-414).

## II. AUTHORIZED ACTIVITIES

#### A. Enriched Uranium Fuel Assemblies

This license will authorize the receipt, possession, inspection, and storage of 196 finished fuel assemblies with a maximum enrichment of a

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3.15 w/o in U-235. Fuel assemblies will be stored in their shipping containers, the New Fuel Storage Vault, and the Spent Fuel Storage Facility.

DPC also requests authorization to repackage any assembly, if necessary, for delivery to a carrier. It should be noted that the license does not authorize insertion of a fuel assembly into the reactor vessel.

B. Fission Chambers

The license will authorize the receipt, possession, inspection, and storage of 12 fission chambers. The total quantity of U-235 in each detector is less than 5 milligrams.

C. Pu-Be Neutron Source

The license will authorize the receipt, possession, inspection, use, and storage of one Pu-Be source containing a maximum of 5 curies.

III. SCOPE OF REVIEW

The staff's safety review of the DPC request for a materials license included an evaluation of the Catawba Nuclear Station organization, administration, nuclear criticality safety, radiation protection, and fire protection program.

During the course of the review, discussions were held with the NRR Project Manager, the Senior Resident Inspector, Region II, and DPC staff members. All sources verified that the storage facilities for the fuel assemblies are identical for both Catawba Units 1 and 2. Therefore, much of the safety review for Unit 1 is also applicable for Unit 2.

The evaluation of the physical security plan for the site was made by the Physical Security Licensing Branch, Division of Safeguards, Office of Nuclear Material Safety and Safeguards.

IV. POSSESSION LIMITS

Conditions 6, 7, and 8 of this license will specify the type, form, and quantity of material DPC may possess under this license and shall read as follows:

6. <u>Material</u>	7. <u>Form</u>	8. <u>Quantity</u>
A. Uranium enriched in the U-235 isotope	A. In unirradiated reactor fuel assemblies	A. 2150 kg of U-235 in uranium enriched to no more than 3.15 w/o U-235



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- |    |                                       |    |                      |    |  |
|----|---------------------------------------|----|----------------------|----|--|
| B. | Uranium enriched in the U-235 isotope | B. | Fission chambers     | B. | 60 mg U-235 in uranium at any enrichment |
| C. | Plutonium-238                         | C. | Pu-Be neutron source | C. | 5 Ci of Pu-238                           |

V. ORGANIZATION

A. Nuclear Criticality Safety and Radiation Protection Responsibilities

1. Station Manager

The Station Manager exercises overall managerial and supervisory responsibilities for the safe operation of the plant and its equipment. He is responsible for compliance with all NRC regulations and license conditions.

2. Superintendent of Operations

The Superintendent of Operations is responsible for receipt, shipment, inspection, handling, and storage of special nuclear materials contained in fuel assemblies. The operations are performed in accordance with approved written procedures.

3. Reactor Engineer

The Reactor Engineer is designated as the Nuclear Fuels Custodian at CNS, Unit 2. Being such, he is responsible for the following activities:

- a) Restrict the use of the station's special nuclear materials to locations and purposes authorized by the license(s).
- b) Approval of all fuel storage locations and transfers.
- c) Maintaining documentation concerning the receipt, shipment, inventory, accidental loss or diversion and transfer of special nuclear materials within the station's purview.
- d) Administering physical inventories and performing calculations of element and isotopic inventories onsite.

4. System Health Physicist

The System Health Physicist is responsible for establishing the Health Physics Program for the CNS that is designed to assure compliance with applicable regulations, licenses, and regulatory guides. In addition, he provides technical guidance for conducting this program, audits the effectiveness and the result of the program, and modifies it as required.

## 5. Station Health Physicist

The Station Health Physicist is designated as the Radiation Protection Manager (RPM) for the site and is responsible for conducting the Health Physics Program for CNS, Unit 2. He has direct access to the Station Manager in matters concerning radiation protection. His duties include the training of personnel in radiation safety, control of radiation exposures of personnel to maintain exposure levels that are as low as reasonably achievable (ALARA), to continuously evaluate and review the radiological status of the CNS, Unit 2, and to make recommendations for the control or elimination of radiation hazards.

### B. Minimum Qualifications

In the application, DPC specified the minimum qualifications for the position of Station Health Physicist shall be equivalent to those stated in Regulatory Guide 1.8, "Personnel, Selection, and Training for Radiation Protection Manager." The person presently serving in this capacity at CNS, Unit 2, does not have a degree in science or engineering as required by Regulatory Guide 1.8. Based on a review of the person's prior extensive experience in radiation protection, the NRC staff recommends granting an exemption from the educational requirements for Regulatory Guide 1.8 for the Radiation Protection Manager.

DPC did not commit to the minimum qualifications for CNS, Unit 2, Station Manager, Superintendent of Operations, Reactor Engineer, and System Health Physicist. Accordingly, Conditions 11, 12, 13, and 14 are recommended to specify the minimum qualifications for these positions and shall read as follows:

- Condition 11. The minimum technical qualifications for the Station Manager shall be in accordance with Section 4.2.1, "Plant Manager," ANSI N18.1-1971.
- Condition 12. The minimum technical qualifications for Superintendent of Operations shall be in accordance with Section 4.3.2, "Supervisors Not Requiring AEC Licenses," ANSI N18.1-1971.
- Condition 13. The minimum technical qualifications for Reactor Engineer shall be in accordance with Section 4.4.1, "Reactor Engineering," ANSI N18.1-1971.
- Condition 14. The minimum technical qualifications for System Health Physicist shall be in accordance with the requirements for "Radiation Protection Manager," Regulatory Guide 1.8, September 1975.

### C. Training

Training is conducted to ensure that all qualified personnel involved in fuel handling participate in a formal training program. The Superintendent

of Operations is responsible for developing and implementing the formal training program. Topics covered in DPC's training program include the basics of radiation, health physics, fire safety, and emergency response. Operations personnel must pass a written exam covering health physics procedures and a fuel handling test using a real assembly under the direction of a qualified individual or a dummy fuel assembly.

The staff has concluded that based on the applicant's radiation safety and fuel handling training programs, the licensee can responsibly carry out the activities for which a license is requested.

D. Administrative Procedures

Administrative procedures for the control and handling of nuclear fuel are reviewed and approved by DPC's operations group. These procedures and any changes to them require review and approval by CNS, Unit 2, Superintendent of Operations or equivalent qualified designee.

VI. NUCLEAR CRITICALITY SAFETY

DPC requests authorization to store fuel assemblies in their shipping containers in the fuel receiving area, in the New Fuel Storage Vault, and in the Spent Fuel Storage Facility.

A. Fuel Handling

Since DPC did not commit to preoperational testing of all fuel handling equipment related to activities authorized by this license, the staff recommends that the following license condition be added:

Condition 15. All preoperational testing of fuel handling equipment related to activities authorized by this license shall be reviewed and approved by DPC before receipt of fuel onsite. Final review and approval of all preoperational testing of fuel handling equipment shall be required by the Superintendent of Operations or equivalent qualified designee. This includes the testing of the following:

- a. New Assembly Handling Fixture,
- b. Rod Cluster Control Assembly (RCCA) Handling Fixture,
- c. New Fuel Elevator,
- d. Spent Fuel Pool Manipulator Crane,
- e. Indexing of Spent Fuel Pool Manipulator Crane,
- f. Whiting 10 Ton Crane,
- g. New Fuel Storage Racks in the New Fuel Storage Vault, and,
- h. Spent Fuel Storage Racks in the Spent Fuel Storage Facility.

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DPC's application specifies that no more than two fuel assemblies shall be out of their shipping containers or storage racks at one time.

Calculations have indicated that two assemblies could be made critical at optimum conditions of water moderation and reflection; however, one assembly separated from another assembly by  $\geq 12$  inches of spacing cannot be made critical under any conditions. Therefore, the staff recommends the following license condition limiting the number of fuel assemblies out of storage and the minimum distance from each other and from all other fuel:

Condition 16a. No more than a total of two fuel assemblies shall be out of approved shipping containers or fuel assembly storage racks at any one time.

- b. The minimum edge-to-edge distance between the above two fuel assemblies, the shipping container array, and the storage rack arrays shall be 12 inches.

#### B. Shipping Containers

The fresh fuel assemblies will be temporarily stored in shipping containers in the fuel receiving area. The shipping containers are authorized for use in accordance with Certificate of Compliance No. 5450. The Certificate of Compliance authorizes the shipment of as many as 60 containers filled with unirradiated fuel assemblies in a single Class III shipment independent of stacking or the degree of water moderation and reflection. DPC requests authorization to store up to 14 shipping containers stacked two high without supports or to stack three high with supports. The NRC staff finds that there is no criticality safety hazard when 14 containers are stored together.

#### C. New Fuel Storage Vault

The New Fuel Storage Vault has a capacity for 98 fuel assemblies. The facility is a reinforced concrete structure with a floor drain designed to prevent flooding of the facility. The fuel assemblies are stored in fuel storage cells (which are formed by steel tubing) with inner dimensions of 9-inches by 9-inches and walls which are 0.12-inch thick. Each cell will hold one fuel assembly. There are 3 double rows of fuel storage cells which are on 21-inch centers within the double rows. There is a 32-inch aisle between each pair of rows. There are 6 rows of assemblies with 17 assemblies per row (4 storage locations are not utilized).

DPC assumed accident conditions in which the array was immersed in water of varying densities. DPC reported k-effective to be less than or equal to 0.98 when the array of fuel assemblies of the highest enrichment was immersed in mist (optimal moderator). DPC assumed the array contained an infinite number of assemblies, enriched to 3.50 w/o U-235. DPC evaluated the array reactivity with a 16 group neutron cross-section data set utilized in KENO. The NRC staff was able to confirm the nuclear criticality safety of the New Fuel Storage Facility using KENO-5 and a 123 group cross-section data set. The NRC staff determined that, if an infinite



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fuel storage array was moderated with water mist at optimum density and enriched up to 3.15 w/o U-235, k-effective would be approximately 0.87. The staff finds that, in this condition, DPC's New Fuel Storage Vault design precludes accidental criticality.

DPC may wrap the fuel assemblies in protective covers to protect them from the environment while in storage. If the covers were sealed at their bottoms, the assemblies could become internally moderated with water while the spaces between assemblies will be occupied only with air. This could occur if the bottoms were closed, the storage area flooded and drained, and water retained in the covers. Large arrays under these conditions may become critical. DPC has stated that procedures require a hole be cut in the covers at the bottom to prevent the postulated accident from occurring. This added precaution taken by DPC to prevent such a situation will be represented in Condition 17 for emphasis.

Condition 17. Fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.

#### D. Spent Fuel Storage Facility

The fuel assemblies in the racks in the Spent Fuel Storage Facility are stored dry in a checkerboard pattern; the four fuel storage locations adjacent to each fuel assembly are vacant. The fuel racks are designed as steel cells with nominal wall thickness of 0.25-inch. The nominal internal cell dimension is 9 inches and the nominal center-to-center spacing is 13.5-inches. It is possible to have mist fill the facility from the fire protection systems (hoses). DPC assumed that all fuel assemblies are enriched to 3.50 w/o U-235 and that the fuel assembly array was infinite in all directions.

DPC used a 16 group cross-section data set in KENO. Under these conditions, fresh fuel assemblies stored in a checkerboard array of infinite dimensions would have a maximum k-effective of less than 0.98. The NRC staff, using 123 group cross sections and KENO-5, calculated a maximum k-effective of 0.82. The NRC assumed uranium enriched to 3.15 w/o occupied all storage locations in the checkerboard array and the array was at the optimum degree of water moderation (in this case, full density water) within and between assemblies. Therefore, the Spent Fuel Storage Facility is safe from an inadvertent criticality when the fresh fuel (enriched up to 3.15 w/o) is stored in a checkerboard pattern.

In the application, DPC did not clearly specify the administrative controls that will be used to provide assurance that the fuel assemblies will not be placed closer together in the Spent Fuel Storage Facility than those in a checkerboard pattern. Therefore, Condition 18 is recommended to provide the required assurance; namely:



Condition 18. New fuel assemblies may be stored in the Spent Fuel Storage Facility subject to the following conditions:

- a. The maximum U-235 enrichment shall be 3.15 w/o.
- b. The fuel assemblies shall be stored dry in a checkerboard pattern.
- c. The Reactor Engineer or equivalent qualified designee shall verify correct fuel assembly location after insertion of each assembly into the assigned storage rack in accordance with a prepared written procedure approved by the Superintendent of Operations or equivalent qualified designee.
- d. An independent loading verification shall be made by a Quality Control Inspector.
- e. The Reactor Engineer or equivalent qualified designee and the Quality Control Inspector shall each sign a document assuring proper storage of each fuel assembly.

E. Exemption from Criticality Alarm Requirements

DPC has requested, pursuant to 10 CFR 70.24(d), an exemption from the provisions of 10 CFR 70.24. Because of the inherent features associated with the storage and inspection of unirradiated fuel containing uranium enriched to less than 5 percent in the U-235 isotope when no fuel processing activities are to be performed and the inherent features in handling limited quantities of other radioactive materials, the staff hereby determines that granting such an exemption is authorized by law, will not endanger life or property, or the common defense and security and is otherwise in the public interest. This exemption is authorized pursuant to 10 CFR 70.24. It is recommended that the exemption be identified as Condition 19.

Condition 19. DPC is hereby exempted from the provisions of 10 CFR 70.24 insofar as this section applies to materials held under this license.

VII. RADIATION SAFETY

DPC is committed, consistent with the recommendation of Regulatory Guide 8.8, to establishing a program to maintain occupational and general public exposures as low as reasonably achievable (ALARA). It is the responsibility of the Station Health Physicist to implement the established radiation safety program to attain this goal. The System Health Physicist will periodically audit the effectiveness and adequacy of such a program.

Since all radioactive material, including fresh fuel assemblies, are sealed sources, the principal exposure pathway to an individual is via external radiation. For a low-enriched uranium fuel bundle (<4% U-235 enrichment), the exposure rate at 1 foot from the surface is normally less than 1 mr/hr; therefore, it is estimated that the exposure level to workers from these sources would be less than 25 percent of the maximum permissible exposure specified in 10 CFR Part 20. All other special nuclear materials requested by the licensee will also represent no threat to plant personnel or to the environment because of the small quantities of radioactive material involved.

At CNS, Unit 2, all persons subject to occupational radiation exposures will be monitored in accordance with 10 CFR 20.202. This is done by using TLD dosimeters and self-reading dosimeters. Individual exposures will be evaluated daily from self-reading dosimeters and monthly TLDs, in accordance with guidance in Regulatory Guide 8.14, "Personnel Neutron Dosimeter." An administrative limit of 1.0 rem per quarter for personnel has been established to ensure that the regulatory limits are not exceeded.

Storage of other radioactive materials (fission chambers and a Pu-Be neutron source) will be in a locked storage area. Access to these special nuclear materials shall be under the authority and control of the CNS, Unit 2, Station Health Physicist.

Annex A, "License Condition for Leak Testing Sealed Plutonium Sources," has been adopted as a Branch Technical Position and will be incorporated as License Condition 20. Accordingly, Condition 20 shall read as follows:

Condition 20. DPC shall comply with provisions of Annex A, "License Condition for Leak Testing Sealed Plutonium Sources."

Because of the low-radiation exposure levels associated with the requested materials and activities and DPC's radiation protection procedures, the staff has concluded that the requested operation can be carried out with adequate protection of the operating personnel.

#### VIII. ENVIRONMENTAL PROTECTION

The NRC has prepared an Environmental Assessment related to the proposed 10 CFR Part 70 Fuel Storage License for CNS, Unit 2. Based on this assessment, a Finding of No Significant Impact has been issued and approved pursuant to 10 CFR Part 51. This finding was published in the Federal Register on April 30, 1985.

#### IX. FIRE SAFETY

The materials used in the fuel storage areas are steel and concrete. There is a manual fire fighting system in the New Fuel Storage Vault area. All extinguishers are of the dry chemical or CO<sub>2</sub> type and the area is normally free of combustible material.

The Spent Fuel Storage Facility is protected from fire by two hoses and stations to extinguish fires in the area (including the fuel receiving area). Dry chemical or CO<sub>2</sub> extinguishers are also provided. DPC has administrative controls that prohibit fire fighting crews from spraying water into the Spent Fuel Storage Facility or fuel receiving areas if new fuel is being transferred from its shipping container to its storage location. The staff has determined that the fire protection measures taken by DPC are adequate for the protection of the health and safety of the workers and the public under this license.

#### X. PHYSICAL PROTECTION

The Division of Safeguards, NMSS, has reviewed DPC's Physical Security Plan and has determined that it meets the requirements of 10 CFR 73.67. To ensure

that the Physical Security Plan shall be fully implemented and remain in effect whenever fresh fuel is stored onsite, the staff recommends Condition 21.

Condition 21.

DPC shall maintain and fully implement all provisions of the Commission approved Physical Security Plan, including any changes made pursuant to the authority of 10 CFR 70.32(e). The approved Physical Security Plan consists of DPC's initially submitted Plan titled, "Catawba Nuclear Station (Unit 2) SNM of Low Strategic Significance Storage and In-Transit Security Plan," dated April 26, 1985, and as amended by Attachment 1 to DPC's letter dated June 19, 1985. The Physical Security Plan identified by this condition shall be withheld from public disclosure pursuant to 10 CFR 2.790(d).

#### XI. CONCLUSIONS

1. After reviewing the application and its supplement, the staff finds that:
  - a. DPC meets the requirements of the Atomic Energy Act, as amended, and of the regulations of the Commission,
  - b. Issuance of the license would not be inimical to the common defense and security, and
  - c. Issuance of the license would not constitute an unreasonable risk to the health and safety of the public.
2. With the recommended license conditions the NRC staff finds that:
  - a. DPC is qualified by reason of training and experience to use the material for the purpose requested in accordance with the regulations in 10 CFR 70.
  - b. DPC's proposed equipment and facilities are adequate to protect health and minimize danger to life or property.
  - c. DPC's proposed procedures to protect health and to minimize danger to life or property are adequate.

#### XII. RECOMMENDATIONS

The staff recommends approval of the application and its supplement subject to the following conditions which the staff finds are appropriate to protect health or to minimize danger to life or property.

- Condition 11. The minimum technical qualifications for the Station Manager shall be in accordance with Section 4.2.1, "Plant Manager," ANSI N18.1-1971.

- Condition 12. The minimum technical qualifications for Superintendent of Operations shall be in accordance with Section 4.3.2, "Supervisors Not Requiring AEC Licenses," ANSI N18.1-1971.
- Condition 13. The minimum technical qualifications for Reactor Engineer shall be in accordance with Section 4.4.1, "Reactor Engineering," ANSI N18.1-1971.
- Condition 14. The minimum technical qualifications for System Health Physicist shall be in accordance with the requirements for "Radiation Protection Manager," Regulatory Guide 1.8, September 1975.
- Condition 15. All preoperational testing of fuel handling equipment related to activities authorized by this license shall be reviewed and approved by DPC before receipt of fuel onsite. Final review and approval of all preoperational testing of fuel handling equipment shall be required by the Superintendent of Operations or equivalent qualified designee. This includes testing of the following:
- a. New Assembly Handling Fixture,
  - b. Rod Cluster Control Assembly (RCCA) Handling Fixture,
  - c. New Fuel Elevator,
  - d. Spent Fuel Pool Manipulator Crane,
  - e. Indexing of Spent Fuel Pool Manipulator Crane,
  - f. Whiting 10 Ton Crane,
  - g. New Fuel Storage Racks in the New Fuel Storage Vault, and
  - h. Spent Fuel Storage Racks in the Spent Fuel Storage Facility.
- Condition 16. a. No more than a total of two fuel assemblies shall be out of approved shipping containers or fuel assembly storage racks at any one time.
- b. The minimum edge-to-edge distance between the above two fuel assemblies, the shipping container array, and the storage rack arrays shall be 12 inches.
- Condition 17. Fuel assemblies shall be stored in such a manner that water would drain freely from the assemblies in the event of flooding and subsequent draining of the fuel storage area.
- Condition 18. New fuel assemblies may be stored in the Spent Fuel Storage Facility subject to the following conditions:
- a. The maximum U-235 enrichment shall be 3.15 w/o.
  - b. The fuel assemblies shall be stored dry in a checkerboard pattern.
  - c. The Reactor Engineer or equivalent qualified designee shall verify correct fuel assembly location after insertion of each assembly into the assigned storage rack in accordance with a prepared written procedure approved by the Superintendent of Operations or equivalent qualified designee.
  - d. An independent loading verification shall be made by a Quality Control Inspector.

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- e. The Reactor Engineer or equivalent qualified designee and the Quality Control Inspector shall each sign a document assuring proper storage of each fuel assembly.

Condition 19. DPC is hereby exempted from the provisions of 10 CFR 70.24 insofar as this section applies to materials held under this license.

Condition 20. DPC shall comply with provisions of Annex A, "License Condition for Leak Testing Sealed Plutonium Sources."

Condition 21. DPC shall maintain and fully implement all provisions of the Commission approved Physical Security Plan, including any changes made pursuant to the authority of 10 CFR 70.32(e). The approved Physical Security Plan consists of DPC's initially submitted Plan titled, "Catawba Nuclear Station (Unit 2) SNM of Low Strategic Significance Storage and In-Transit Security Plan," dated April 26, 1985, and as amended by Attachment 1 to DPC's letter dated June 19, 1985. The Physical Security Plan identified by this condition shall be withheld from public disclosure pursuant to 10 CFR 2.790(d).

Original signed by:

Kishore Kodali

Kishore K. Kodali  
Uranium Process Licensing Section  
Uranium Fuel Licensing Branch  
Division of Fuel Cycle and  
Material Safety, NMSS

Original Signed By:

W. T. Crow

Approved by:

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