

NRC FORM 464 Part I  
(6-1998)

U.S. NUCLEAR REGULATORY COMMISSION

FOIA/PA

RESPONSE NUMBER



RESPONSE TO FREEDOM OF INFORMATION ACT (FOIA) / PRIVACY ACT (PA) REQUEST

2000-0096

2

RESPONSE TYPE  FINAL  PARTIAL

REQUESTER

Mr. Jim Warren

DATE

FEB 22 2000

PART I. - INFORMATION RELEASED

- No additional agency records subject to the request have been located.
- Requested records are available through another public distribution program. See Comments section.
- APPENDICES E** Agency records subject to the request that are identified in the listed appendices are already available for public inspection and copying at the NRC Public Document Room.
- APPENDICES F** Agency records subject to the request that are identified in the listed appendices are being made available for public inspection and copying at the NRC Public Document Room.
- Enclosed is information on how you may obtain access to and the charges for copying records located at the NRC Public Document Room, 2120 L Street, NW, Washington, DC.
- APPENDICES F** Agency records subject to the request are enclosed.
- Records subject to the request that contain information originated by or of interest to another Federal agency have been referred to that agency (see comments section) for a disclosure determination and direct response to you.
- We are continuing to process your request.
- See Comments.

PART I.A - FEES

AMOUNT \*

\$

- You will be billed by NRC for the amount listed.  None. Minimum fee threshold not met.
- You will receive a refund for the amount listed.  Fees waived.

\* See comments for details

PART I.B - INFORMATION NOT LOCATED OR WITHHELD FROM DISCLOSURE

- No agency records subject to the request have been located.
- Certain information in the requested records is being withheld from disclosure pursuant to the exemptions described in and for the reasons stated in Part II.
- This determination may be appealed within 30 days by writing to the FOIA/PA Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. Clearly state on the envelope and in the letter that it is a "FOIA/PA Appeal."

PART I.C COMMENTS (Use attached Comments continuation page if required)

SIGNATURE - FREEDOM OF INFORMATION ACT AND PRIVACY ACT OFFICER

Carol Ann Reed

**APPENDIX E  
RECORDS ALREADY AVAILABLE IN THE PDR**

<b><u>NO.</u></b>	<b><u>DATE</u></b>	<b><u>ACCESSION NUMBER</u></b>	<b><u>DESCRIPTION/(PAGE COUNT)</u></b>
1.	7/29/98	9811030289	Letter to J. Donahue from D. Lochbaum, subject: Shearon Harris Spent Fuel Pools 'C' and 'D' Questions.
2.	12/7/98	9812150136	Letter to NRC from J. Scarola, subject: Retyped Technical Specification Pages for Spent Fuel Pool Water Level and Revised Fuel Handling Accident Analyses.
3.	3/19/99	9903290234	Letter to NRC from J. Scarola, subject: Response to Request for Additional Information Spent Fuel Pool Water Level and Revised Fuel Handling Accident Analyses.
4.	4/8/99	9904140182	Letter to J. Scarola from R. Laufer, subject: Issuance of Amendment No. 88 to Facility Operating License No. NPF-63 Regarding Spent Fuel Pool Water Level.

APPENDIX F

RECORDS MAINTAINED IN THE PDR UNDER THE ABOVE REQUEST NUMBER

<b>NUMBER</b>	<b>DATE</b>	<b>DESCRIPTION/PAGES</b>
1.	4/19/97	Letter to NRC from W. Robinson, subject: Shearon Harris Completion of Spent Fuel Survey Commitments, (3 pgs.).
2.	10/28/99	Letter to the Honorable Jesse Helms from W. Travers, re: Request to Increase the Spent Fuel Storage Capacity at Shearon Harris, (4 pgs.).
3.	11/1/99	Letter to The Honorable David Price from W. Travers, re: Request to Increase the Spent Fuel Storage Capacity at Shearon Harris, (4 pgs.).
4.	12/15/99	Letter to J. Scarola from R. Laufer, subject: Environmental Assessment Related to Expanding the Spent Fuel Pool Storage Capacity at the Shearon Harris Plant, (3 pgs.) with enclosure: Environmental Assessment, (10 pgs.).



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

SEPTEMBER 1998

OBTAINING COPIES OF RECORDS FROM  
THE PUBLIC DOCUMENT ROOM

**PLACING ORDERS FOR COPIES OF RECORDS.** Copies of records maintained at the PDR may be obtained by visiting the PDR at 2120 L Street, N.W., Lower-Level, Washington, D.C., 20555; by calling the PDR, Reference Services, at (202) 634-3273 or (1-800-397-4209); writing to the PDR at Mail Stop LL-6, USNRC, Washington, DC 20555; by E-mail (PDR@NRC.GOV) or by fax at (202) 634-3343.

In ordering records identified on appendices to NRC's responses to Freedom of Information Act requests, a person may place a telephone order whenever all records are being requested, or a limited number of records from different file locations are being requested. If a requester is interested in only some of the records identified on appendices, the requester should place a check mark beside each requested record identified on the appendices and send copies of the marked pages to the PDR. The PDR staff will then arrange for the records to be copied by the copying service contractor.

**PAYMENTS.** Payment for reproduction services can be accomplished in several modes. For in-person requests, the on-site contractor will collect payment when the copies are given to the requester. A self-service copier is also available for a person's use. For copies which are to be mailed, an invoice will accompany the order if the total order is under \$30.00. Prepayment will be required for orders over \$30.00 for requesters without established accounts. An account may be established by contacting Accounts Receivable, Qualex International at 202-293-3222. The contractor also accepts the following credit cards: Visa, Mastercard and Discover.

**INQUIRIES REGARDING ORDERS.** The contractor's on-site telephone number is (202) 293-3222. Inquiries related to the status of reproduction orders should be addressed in the following manner:

1. For records ordered by a telephone call to the PDR, contact the PDR and provide the approximate date of the telephone request, the name of the entity to be billed, and the method of delivery of records to you.

2. For records ordered by an on-site visit to the PDR, contact the contractor and provide him with the following information obtained from your copy of the reproduction request form: date of order, entity to be billed, the request number and the method of delivery of records to you.
3. For records ordered by letter to the PDR, contact the PDR and reference your letter.

CHARGES. Requests for the reproduction of records at the U.S. Nuclear Regulatory Commission (NRC) Public Document Room (PDR) in Washington, D.C., are performed by a copying service contractor, Qualex International. The contract for copying services provides for the following rates for copying records maintained at the PDR.

1. Paper to paper is \$0.08 per page, except for oversized records and engineering drawings which are \$0.15 per page for 11" x 17" full size. Over 11" x 17" is \$1.50 per page. NOTE: Pages greater than legal size, 8 1/2" x 14" but smaller than or equal to 11" x 17", shall be reduced to legal size and reproduced for \$0.08 per page, unless the order specifically requests full size reproduction.

A self-service copier is provided in the reading room at a charge of \$0.08 per page.

2. Microform to microform is \$0.75 per microfiche or aperture card.
3. Microform to paper is \$0.08 per page for pages on microfiche and \$5.00 for a full-sized print or \$3.00 for a reduced 18" x 24" sized print of a drawing on an aperture card.
4. Orders completed for mailing or for a special delivery service will have an additional fee for the actual mailing, shipping, or delivery service rate. Unless a user requests special packing materials, there is no additional charge by the contractor for wrapping materials and handling.
5. At a person's request, the reproduction contractor will transmit by facsimile. The rate for local telephone numbers is \$0.30 per page and the rate for long distance numbers is \$0.50 per page. The rate for long distance outside the continental U.S. is \$1.50 per page.
6. The contractor can also reproduce diskettes, video cassettes, audio cassettes, CD Rom disks and photographic material. Contact the PDR for additional information.

**CP&L**

Carolina Power & Light Company  
PO Box 165  
New Hill NC 27562

William R. Robinson  
Vice President  
Harris Nuclear Plant

APR 18 1997

'97 APR 29 11:44

SERIAL: HNP-97-091  
10 CFR 50.54(f)

United States Nuclear Regulatory Commission  
ATTENTION: Document Control Desk  
Washington, DC 20555

**SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
COMPLETION OF SPENT FUEL SURVEY COMMITMENTS**

Dear Sir or Madam:

By letter dated July 1, 1996 and received July 8, 1996, the NRC requested that Carolina Power & Light Company (CP&L) acknowledge and provide projected completion dates for commitments made related to spent fuel activities at the Harris Nuclear Plant (HNP). Specifically, CP&L was requested to confirm that: (1) the current spent fuel pool heatload analysis will be updated for current and future practices/assumptions; (2) the HNP FSAR will be revised to address the full-core off-loads, including the clarification or deletion of terminology such as "normal" and "abnormal;" and (3) the HNP FSAR will be revised to reflect the current as-installed spent fuel pool configuration.

By letter dated August 8, 1996, (HNP-96-131), CP&L committed to complete the above spent fuel related activities concurrently and prior to beginning fuel off-load for RFO7, which is currently in progress.

The fuel pool heatload analysis has been updated and approved. This analysis is valid for RFO7 and cycle 8 operation. The FSAR revisions to document this heatload analysis, clarify terminology and refueling strategies, and reflect the current as-installed spent fuel pool configuration, were approved on March 12, 1997. These changes will be incorporated in FSAR Amendment 48 scheduled for issuance no later than six months following RFO7 completion.

Please refer any questions regarding this submittal to Ms. D. B. Alexander at (919) 362-3190.

Sincerely,



KWS/kws

W. R. Robinson, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are employees, contractors, and agents of Carolina Power & Light Company.

*Linda B. Coy*

Notary (Seal)

My commission expires: *January 25, 2001*

c: Mr. J. B. Brady, NRC Sr. Resident Inspector  
Mr. N. B. Le, NRC Project Manager  
~~Mr. L. A. Reyes~~ NRC Regional Administrator

bc: Mr. H. K. Chernoff (RNP)  
Mr. B. H. Clark  
Mr. D. D. Davis  
Mr. G. W. Davis  
Mr. J. W. Donahue  
Ms. S. F. Flynn  
Mr. H. W. Habermeyer, Jr.  
Mr. M. D. Hill  
Mr. W. J. Hindman  
Mr. R. M. Krich

Ms. W. C. Langston (PE&RAS File)  
Mr. L. A. Martin  
Mr. R. D. Martin  
Mr. W. S. Orser  
Mr. G. A. Rolfson  
Mr. M. A. Turkal (BNP)  
Mr. T. D. Walt  
Ms. J. H. Westmoreland  
Nuclear Records  
Nuclear Licensing File  
File: HI/A-2D



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

October 28, 1999

The Honorable Jesse Helms  
United States Senate  
Washington, D.C. 20510

Dear Senator Helms:

On June 23, 1999, I responded to your letter of May 26, 1999, to Dennis K. Rathbun, Director of the U.S. Nuclear Regulatory Commission's (NRC's) Office of Congressional Affairs, regarding Carolina Power & Light Company's request to increase the spent fuel storage capacity at its Shearon Harris Nuclear Power Plant (HNP). In my response, I told you that the NRC staff intended to hold a public meeting in the vicinity of HNP to discuss the status of our technical review and to give members of the public an opportunity to express their concerns.

On July 12, 1999, the NRC's Atomic Safety and Licensing Board (ASLB) granted the hearing request made by the Board of Commissioners of Orange County, North Carolina. As part of the hearing process, the ASLB established a schedule to hear oral limited appearance statements in accordance with section 2.715(a) of the Commission's regulations. The limited appearance statement sessions will be held on December 7 and 8, 1999, in the vicinity of HNP, and will give members of the public an opportunity to state their positions on matters of concern relating to the proceeding.

In light of the ASLB's decision granting a hearing, and the opportunity for the public to present comments at the limited appearance sessions, the staff will defer holding any other public meetings at this time. The staff discussed deferring the meeting with representatives of the North Carolina Department of Environment and Natural Resources (NCDENR) and they supported the staff's decision. The staff has had ongoing discussions with NCDENR regarding holding a meeting on this issue since they made their original request for a meeting on behalf of several local government agencies and individual citizens in their letter of February 10, 1999. As the hearing proceeds, the staff will continue to evaluate the need for a public meeting on this amendment request.

Sincerely,

A handwritten signature in black ink that reads "William D. Travers".

William D. Travers  
Executive Director  
for Operations

Docket No. 50-400

cc: See next page

F/2

**Carolina Power & Light Company**

cc:

**Mr. William D. Johnson**  
Vice President and Corporate Secretary  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602

**Resident Inspector/Harris NPS**  
c/o U.S. Nuclear Regulatory Commission  
5421 Shearon Harris Road  
New Hill, North Carolina 27562-9998

**Ms. Karen E. Long**  
Assistant Attorney General  
State of North Carolina  
Post Office Box 629  
Raleigh, North Carolina 27602

**Public Service Commission**  
State of South Carolina  
Post Office Drawer  
Columbia, South Carolina 29211

**Mr. Mel Fry, Director**  
Division of Radiation Protection  
N.C. Department of Environment  
and Natural Resources  
3825 Barrett Dr.  
Raleigh, North Carolina 27609-7721

**Mr. Terry C. Morton**  
Manager  
Performance Evaluation and  
Regulatory Affairs CPB 9  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602-1551

**Mr. Bo Clark**  
Plant General Manager - Harris Plant  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P.O. Box 165  
New Hill, North Carolina 27562-0165

**Mr. John H. O'Neill, Jr.**  
Shaw, Pittman, Potts & Trowbridge  
2300 N Street, NW  
Washington, DC 20037-1128

**Mr. James Scarola**  
Vice President-Harris Plant  
Carolina Power & Light Company  
Post Office Box 165, MC: Zone 1  
New Hill, NC 27562-0165

**Shearon Harris Nuclear Power Plant  
Unit 1**

**Mr. Chris L. Burton**  
Director of Site Operations  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
Post Office Box 165, MC: Zone 1  
New Hill, North Carolina 27562-0165

**Mr. Robert P. Gruber**  
Executive Director  
Public Staff NCUC  
Post Office Box 29520  
Raleigh, North Carolina 27626

**Chairman of the North Carolina  
Utilities Commission**  
Post Office Box 29510  
Raleigh, North Carolina 27626-0510

**Mr. Vernon Malone, Chairman**  
Board of County Commissioners  
of Wake County  
P. O. Box 550  
Raleigh, North Carolina 27602

**Mr. Richard H. Givens, Chairman**  
Board of County Commissioners  
of Chatham County  
P. O. Box 87  
Pittsboro, North Carolina 27312

**Ms. Donna B. Alexander, Manager**  
Regulatory Affairs  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P.O. Box 165, Mail Zone 1  
New Hill, NC 27562-0165

**Mr. Johnny H. Eads, Supervisor**  
Licensing/Regulatory Programs  
Carolina Power & Light Company  
Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Zone 1  
New Hill, NC 27562-0165

**Ms. Diane Curran**  
Harmon, Curran, Spielberg, and Eisenberg, L.L.P.  
1726 M Street NW., Suite 600  
Washington, DC 20036

The Honorable Jesse Helms  
 United States Senate  
 Washington, D.C. 20510

Dear Senator Helms:

On June 23, 1999, I responded to your letter of May 26, 1999, to Dennis K. Rathbun, Director of the U.S. Nuclear Regulatory Commission's (NRC's) Office of Congressional Affairs, regarding Carolina Power & Light Company's request to increase the spent fuel storage capacity at its Shearon Harris Nuclear Power Plant (HNP). In my response, I told you that the NRC staff intended to hold a public meeting in the vicinity of HNP to discuss the status of our technical review and to give members of the public an opportunity to express their concerns.

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Sincerely, **Original Signed by**  
**William D. Travers**

William D. Travers  
 Executive Director  
 for Operations

Docket No. 50-400

cc: See next page

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\*See previous concurrence

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DATE	10/12/99	10/20/99	10/20/99	10/21/99	10/21/99	10/21/99
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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

November 1, 1999

The Honorable David Price  
United States House of Representatives  
Washington, D.C. 20515

Dear Congressman Price:

On June 23, 1999, Annette Vietti-Cook, Secretary of the U.S. Nuclear Regulatory Commission (NRC), responded to your letter of June 4, 1999, to the Chairman of the NRC regarding Carolina Power & Light Company's request to increase the spent fuel storage capacity at its Shearon Harris Nuclear Power Plant (HNP). In her response, Ms. Vietti-Cook told you that the NRC staff intended to hold a public meeting in the vicinity of HNP to discuss the status of our technical review and to give members of the public an opportunity to express their concerns.

On July 12, 1999, the NRC's Atomic Safety and Licensing Board (ASLB) granted the hearing request made by the Board of Commissioners of Orange County, North Carolina. As part of the hearing process, the ASLB established a schedule to hear oral limited appearance statements in accordance with section 2.715(a) of the Commission's regulations. The limited appearance statement sessions will be held on December 7 and 8, 1999, in the vicinity of HNP, and will give members of the public an opportunity to state their positions on matters of concern relating to the proceeding.

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Sincerely,

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William D. Travers  
Executive Director  
for Operations

Docket No. 50-400

cc: See next page

**Carolina Power & Light Company**

cc:

**Mr. William D. Johnson**  
Vice President and Corporate Secretary  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602

**Resident Inspector/Harris NPS**  
c/o U.S. Nuclear Regulatory Commission  
5421 Shearon Harris Road  
New Hill, North Carolina 27562-9998

**Ms. Karen E. Long**  
Assistant Attorney General  
State of North Carolina  
Post Office Box 629  
Raleigh, North Carolina 27602

**Public Service Commission**  
State of South Carolina  
Post Office Drawer  
Columbia, South Carolina 29211

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Division of Radiation Protection  
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3825 Barrett Dr.  
Raleigh, North Carolina 27609-7721

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Manager  
Performance Evaluation and  
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Shearon Harris Nuclear Power Plant  
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Licensing/Regulatory Programs  
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Shearon Harris Nuclear Power Plant  
P. O. Box 165, Mail Zone 1  
New Hill, NC 27562-0165

**Ms. Diane Curran**  
Harmon, Curran, Spielberg, and Eisenberg, L.L.P.  
1726 M Street NW., Suite 600  
Washington, DC 20036



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December 15, 1999

Mr. James Scarola, Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Code: Zone 1  
New Hill, North Carolina 27562-0165

**SUBJECT: ENVIRONMENTAL ASSESSMENT RELATED TO EXPANDING THE SPENT FUEL  
POOL STORAGE CAPACITY AT THE SHEARON HARRIS NUCLEAR POWER  
PLANT (TAC NO. MA4432)**

Dear Mr. Scarola:

Enclosed is a copy of the Environmental Assessment and Finding of No Significant Impact related to your application for amendment dated December 23, 1998, as supplemented on April 30, June 14, July 23, September 3, October 15, and October 29, 1999. The proposed amendment would support a modification to the Shearon Harris Nuclear Power Plant to increase the spent fuel storage capacity by adding rack modules to spent fuel pools 'C' and 'D' and placing the pools in service.

The assessment is being forwarded to the Office of the Federal Register for publication.

Sincerely,

**Original signed by:**

Richard J. Laufer, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosure: Environmental Assessment

cc w/encl: See next page

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NAME	RLaufer <i>RL</i>	EDunnington <i>ED</i>	CCarpenter *	SUttal *	RCorreia <i>RC</i>	HBerkow *
DATE	12/14/99	12/16/99	11/17/99	11/29/99	12/17/99	12/2/99
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F/4



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

December 15, 1999

Mr. James Scarola, Vice President  
Shearon Harris Nuclear Power Plant  
Carolina Power & Light Company  
Post Office Box 165, Mail Code: Zone 1  
New Hill, North Carolina 27562-0165

**SUBJECT: ENVIRONMENTAL ASSESSMENT RELATED TO EXPANDING THE SPENT FUEL  
POOL STORAGE CAPACITY AT THE SHEARON HARRIS NUCLEAR POWER  
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Sincerely,

A handwritten signature in black ink that reads "Richard J. Laufer".

Richard J. Laufer, Project Manager, Section 2  
Project Directorate II  
Division of Licensing Project Management  
Office of Nuclear Reactor Regulation

Docket No. 50-400

Enclosure: Environmental Assessment

cc w/encl: See next page

Mr. James Scarola  
Carolina Power & Light Company

cc:

Mr. William D. Johnson  
Vice President and Corporate Secretary  
Carolina Power & Light Company  
Post Office Box 1551  
Raleigh, North Carolina 27602

Resident Inspector/Harris NPS  
c/o U.S. Nuclear Regulatory Commission  
5421 Shearon Harris Road  
New Hill, North Carolina 27562-9998

Ms. Karen E. Long  
Assistant Attorney General  
State of North Carolina  
Post Office Box 629  
Raleigh, North Carolina 27602

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**UNITED STATES NUCLEAR REGULATORY COMMISSION****CAROLINA POWER & LIGHT COMPANY****DOCKET NO. 50-400****SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1****ENVIRONMENTAL ASSESSMENT AND FINDING OF****NO SIGNIFICANT IMPACT**

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-63, issued to Carolina Power & Light Company (CP&L, the licensee), for operation of the Shearon Harris Nuclear Power Plant, Unit 1, (HNP) located in Wake and Chatham Counties, North Carolina.

**ENVIRONMENTAL ASSESSMENT****Identification of the Proposed Action:**

The proposed action would support a modification to HNP to increase the spent fuel storage capacity by adding rack modules to spent fuel pools (SFPs) 'C' and 'D' and placing the pools in service. The proposed action consists of: 1) a revision to Technical Specification (TS) 5.6 to identify pressurized water reactor (PWR) burnup restrictions, boiling water reactor (BWR) enrichment limits, pool capacities, heat load limitations and nominal center-to-center distances between fuel assemblies in the racks to be installed in SFPs 'C' and 'D'; 2) an alternative plan in accordance with the requirements of 10 CFR 50.55a to demonstrate an acceptable level of quality and safety in completion of the component cooling water (CCW) and SFPs 'C' and 'D' cooling and cleanup system piping; and 3) an unreviewed safety question for additional heat load on the CCW system.

The proposed action is in accordance with the licensee's application for amendment dated December 23, 1998, as supplemented by letters dated April 30, June 14, July 23, September 3, October 15, and October 29, 1999.

The Need for the Proposed Action:

The proposed action is needed for the licensee to provide spent fuel storage capacity for all four CP&L nuclear units (Harris, Brunswick 1 and 2, and Robinson) through the end of their current licenses.

HNP was originally planned as a four nuclear unit site and the fuel handling building (FHB) was designed and constructed with four separate pools capable of storing spent fuel. HNP Units 3 and 4 were canceled in late 1981 and HNP Unit 2 was canceled in late 1983. The FHB, all four pools (including liners), and the cooling and cleanup system to support SFPs 'A' and 'B' were completed. However, construction on SFPs 'C' and 'D' was discontinued after Unit 2 was canceled and the system was not completed. HNP, Unit 1 began operation in 1987 with SFPs 'A' and 'B' in service.

As permitted by the HNP operating license issued on January 12, 1987, CP&L has implemented a spent fuel shipping program. Spent fuel from Brunswick (2 BWR units) and Robinson (1 PWR unit) is shipped to HNP for storage in the HNP SFPs. CP&L ships fuel to HNP in order to maintain full core offload capability at Brunswick and Robinson. As a result of the operation of HNP, shipping program requirements, and the unavailability of a Department of Energy (DOE) storage facility, it will be necessary to activate SFPs 'C' and 'D' and the associated cooling and cleanup system by early in the year 2000. Activation of these pools will provide spent fuel storage capacity for all four CP&L units through the end of their current operating licenses.

Environmental Impacts of the Proposed Action:

The Commission has completed its evaluation of the proposed action and concludes there are no significant environmental impacts. The factors considered in this determination are discussed below.

Radioactive Waste Treatment

HNP uses waste treatment systems designed to collect and process gaseous, liquid, and solid waste that might contain radioactive material. These radioactive waste treatment systems are discussed in the Final Environmental Statement (FES, NUREG-0972) dated October 1983, and evaluated in the Safety Evaluation Report (SER, NUREG-1083) dated November 1983. The proposal to increase the spent fuel storage capacity at HNP will not involve any change in the waste treatment systems described in the FES or SER.

Gaseous Radioactive Wastes

Gaseous releases from the fuel storage area are combined with other plant exhausts. Normally, the contribution from the fuel storage area is negligible compared to the other releases and no significant increases are expected as a result of the expanded storage capacity. Storing spent fuel in four pools (instead of the previous two pools) will result in an increase in the SFP evaporation rate. The licensee has determined that the increased evaporation will increase the relative humidity of the fuel building atmosphere by less than 10%. This increase is within the capacity of both the normal and the Engineered Safety Feature (ESF) ventilation systems. The net result of the increased heat loss and water vapor emission to the environment will be negligible.

Solid Radioactive Wastes

Spent resins are generated by the processing of SFP water through the SFP purification system. These spent resins are disposed of as solid radioactive waste. The necessity for pool

filtration resin replacement is determined primarily by the requirement for water clarity, and the resin is normally expected to be changed about once a year. The licensee does not expect the resin change-out frequency of the SFP purification system to be permanently increased as a result of the expanded storage capacity. During racking operations, a small amount of additional resins may be generated by the pool cleanup system on a one-time basis.

#### Radiological Impact Assessment

For this modification the licensee plans to install region 2 (non-flux trap style) rack modules in pools 'C' and 'D' in incremental phases, on an as-needed basis. The licensee estimates that the collective dose associated with the proposed fuel rack installation is in the range of 2-3 person-rem.

All of the operations involved in racking will use detailed procedures prepared with full consideration of ALARA (as low as reasonably achievable) principles. The HNP racking project represents low radiological risk because the pools currently contain no spent fuel. The Radiation Protection Department will prepare Radiation Work Permits (RWPs) for the various jobs associated with the SFP rack installation operation. These RWPs will instruct the project personnel in the areas of protective clothing, general dose rates, contamination levels and dosimetry requirements. Personnel will wear protective clothing and will be required to wear personnel monitoring equipment including alarming dosimeters.

Since the proposed license amendment does not involve the removal of any spent fuel racks, the licensee does not plan on using divers for this project. However, if it becomes necessary to use divers to remove any interferences which may impede the installation of the new spent fuel racks, the licensee will equip each diver with the appropriate monitoring equipment. The licensee will monitor and control work, personnel traffic, and equipment movement in the SFP area to minimize contamination and to assure that exposure is

maintained ALARA.

On the basis of its review of the HNP proposal, the staff concludes that the increase in spent fuel storage capacity at HNP can be accomplished in a manner that will ensure that doses to workers will be maintained ALARA.

#### Accident Considerations

In its application, the licensee evaluated the possible consequences of fuel handling accidents to determine offsite doses. The proposed SFP rack installation at HNP will not affect any of the assumptions or inputs used in evaluating the dose consequences of a fuel handling accident and, therefore, will not result in an increase in the doses from a postulated fuel handling accident. The proposed action will not change the procedures or equipment used for, or the frequency of, fuel moves at HNP or fuel shipments from the Brunswick and Robinson plants. Therefore, the probability of a postulated fuel handling accident will not increase from that previously evaluated.

The staff has previously considered accidents whose consequences might exceed a fuel handling accident; that is, beyond design basis events. One such accident evaluated by the staff involves a structural failure of the SFP, resulting in loss of all contained cooling water followed by heatup and a zirconium cladding fire. The details of this severe accident are discussed in NUREG/CR-4982, entitled "Severe Accidents in Spent Fuel Pools in Support of Generic Issue 82." The staff also issued NUREG/CR-5176, entitled "Seismic Failure and Cask Drop Analysis of the Spent Fuel Pools at Two Representative Nuclear Power Plants." This report considers the structural integrity of the SFP and the pool response to the circumstances considered. Subsequently, the staff issued NUREG/CR-5281, "Value/Impact Analysis of Accident Preventative and Mitigative Options for Spent Fuel Pools," and NUREG-1353, "Regulatory Analysis for the Resolution of Generic Issue 82: Beyond Design Basis Accidents in

Spent Fuel Pools." In NUREG-1353, the staff determined that no new regulatory requirements were warranted in relation to Generic Issue 82.

The staff believes that the probability of severe structural damage occurring at HNP is extremely low. This belief is based upon the Commission's requirements for the design and construction of SFPs and their contents and on the licensee's adherence to approved industry codes and standards. For example, in the HNP case, the pools are an integral part of the fuel building. The SFPs and the spent fuel storage racks are Seismic Category 1, and thus, are required to remain functional during and after a safe shutdown earthquake. In the unlikely event of a total loss of the cooling system, makeup water sources are available to replace coolant lost through evaporation or boiling. Therefore, the staff concludes that the potential for environmental impact from severe accidents is negligible.

The proposed action will not significantly increase the probability or consequences of accidents, no changes are being made in the types of any effluents that may be released offsite, and there is no significant increase in occupational or public radiation exposure. Therefore, there are no significant radiological environmental impacts associated with the proposed action.

With regard to potential nonradiological impacts, the proposed action does not involve any historic sites. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, there are no significant nonradiological environmental impacts associated with the proposed action.

Accordingly, the staff concludes that there are no significant environmental impacts associated with the proposed action.

Alternatives to the Proposed Action:

A "Final Generic Environmental Impact Statement (FGEIS) on Handling and Storage of

Spent Light Water Power Reactor Fuel," NUREG-0575, Volumes 1-3, was issued by the Commission in August 1979. The finding of the FGEIS is that the environmental costs of interim storage are essentially negligible, regardless of where such spent fuel is stored. The storage of spent fuel, as evaluated in NUREG-0575, is considered to be an interim action, not a final solution to permanent disposal. One spent fuel storage alternative considered in detail in the FGEIS is the expansion of the onsite fuel storage capacity by modification of the existing SFPs. The Commission has approved numerous applications for SFP expansion. The finding in each has been that the environmental impact of such increased storage capacity is negligible. However, since there are variations in storage design and limitations caused by spent fuel already stored in the pools, the FGEIS recommended that licensing reviews be done on a case-by-case basis, to resolve plant-specific concerns.

Specific alternatives to the proposed action are discussed below.

#### Shipment of Fuel to a Permanent Federal Fuel Storage/Disposal Facility

Shipment of spent fuel to a high-level radioactive storage facility is an alternative to increasing the onsite spent fuel storage capacity. However, DOE's high-level radioactive waste repository is not expected to begin receiving spent fuel until approximately 2010, at the earliest. In October 1996, the Administration did commit DOE to begin storing wastes at a centralized location by January 31, 1998. However, no location has been identified and an interim federal storage facility has yet to be identified in advance of a decision on a permanent repository. Therefore, shipping spent fuel to the DOE repository is not considered an alternative to increased onsite spent fuel storage capacity at this time.

#### Shipment of Fuel to a Reprocessing Facility

Reprocessing of spent fuel from HNP is not a viable alternative since there are no operating commercial reprocessing facilities in the United States. Therefore, spent fuel would

have to be shipped to an overseas facility for reprocessing. However, this approach has never been used and it would require approval by the Department of State as well as other entities. Additionally, the cost of spent fuel reprocessing is not offset by the salvage value of the residual uranium; reprocessing represents an added cost. Therefore, this alternative is considered unacceptable.

#### Reduction of Spent Fuel Generation

Improved usage of fuel and/or operation at a reduced power level would decrease the amount of fuel being stored in the pool and thus increase the amount of time before full core off-load capability is lost. With extended burnup of fuel assemblies, the fuel cycle would be extended and fewer offloads would be necessary. The licensee has already increased its fuel enrichment to 5 percent and is currently operating on 18-month refueling cycles. Operating the plant at a reduced power level would not make effective use of available resources, and would cause unnecessary economic hardship on CP&L and its customers. Therefore, reducing the amount of spent fuel generated by increasing burnup further or reducing power is not considered a practical alternative.

#### Alternative Creation of Additional Storage Capacity

Alternative technologies that would create additional storage capacity include rod consolidation, dry cask storage, and modular vault dry storage. Rod consolidation involves disassembling the spent fuel assemblies and storing the fuel rods from two or more assemblies in a stainless steel canister that can be stored in the spent fuel racks. Industry experience with rod consolidation is currently limited, primarily due to concerns for potential gap activity release due to rod breakage, the potential for increased fuel cladding corrosion due to some of the protective oxide layer being scraped off, and because the prolonged consolidation activity could interfere with ongoing plant operations. Dry cask storage is a method of transferring spent fuel,

after storage in the pool for several years, to high capacity casks with passive heat dissipation features. After loading, the casks are stored outdoors on a seismically qualified concrete pad. Concerns for dry cask storage include the potential for fuel or cask handling accidents, potential fuel clad rupture due to high temperatures, increased land use, construction impacts, the need for additional security provisions, and high costs. Vault storage consists of storing spent fuel in shielded stainless steel cylinders in a horizontal configuration in a reinforced concrete vault. The concrete vault provides missile and earthquake protection and radiation shielding. Concerns for vault dry storage include the need for additional security provisions, increased land use, construction impacts, eventual decommissioning of the new vault, the potential for fuel or clad rupture due to high temperatures, and high cost.

The environmental impacts of the alternative technologies discussed above and the proposed action are similar.

#### The No-Action Alternative

As an alternative to the proposed action, the staff also considered denial of the proposed action (i.e., the "no-action" alternative). Denial of the application would result in no change in current environmental impacts.

#### Alternative Use of Resources:

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for HNP.

#### Agencies and Persons Consulted:

In accordance with its stated policy, on December 2 and 3, 1999, the staff consulted with North Carolina State officials, Mr. Richard M. Fry and Mr. Johnny James of the North Carolina Department of Environment and Natural Resources, regarding the environmental impact of the proposed action. The State officials stated that they had no objection to the

finding. However, they requested that the staff hold a public meeting in Raleigh, North Carolina to discuss the license amendment review process, the results of the review for HNP's proposed amendment, and the analysis that led to this environmental assessment finding.

**FINDING OF NO SIGNIFICANT IMPACT**

On the basis of the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated December 23, 1998, as supplemented by letters dated April 30, June 14, July 23, September 3, October 15, and October 29, 1999, which are available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC.

Dated at Rockville, Maryland, this 15<sup>th</sup> day of December 1999.

**FOR THE NUCLEAR REGULATORY COMMISSION**



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