



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

2000-0208

1

RESPONSE TYPE FINAL PARTIAL

REQUESTER

Mr. Jim Warren

DATE

MAY 24 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.
- | |
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| APPENDICES
A |
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 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.
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| APPENDICES |
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 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.
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| APPENDICES
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 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 *

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* See comments for details

- 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.

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

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

2000-0208

MAY 24 2000

PART II.A -- APPLICABLE EXEMPTIONS

APPENDICES
B

Records subject to the request that are described in the enclosed Appendices are being withheld in their entirety or in part under the Exemption No.(s) of the PA and/or the FOIA as indicated below (5 U.S.C. 552a and/or 5 U.S.C. 552(b)).

- Exemption 1: The withheld information is properly classified pursuant to Executive Order 12958.
- Exemption 2: The withheld information relates solely to the internal personnel rules and procedures of NRC.
- Exemption 3: The withheld information is specifically exempted from public disclosure by statute indicated.
 - Sections 141-145 of the Atomic Energy Act, which prohibits the disclosure of Restricted Data or Formerly Restricted Data (42 U.S.C. 2161-2165).
 - Section 147 of the Atomic Energy Act, which prohibits the disclosure of Unclassified Safeguards Information (42 U.S.C. 2167).
 - 41 U.S.C., Section 253(b), subsection (m)(1), prohibits the disclosure of contractor proposals in the possession and control of an executive agency to any person under section 552 of Title 5, U.S.C. (the FOIA), except when incorporated into the contract between the agency and the submitter of the proposal.
- Exemption 4: The withheld information is a trade secret or commercial or financial information that is being withheld for the reason(s) indicated.
 - The information is considered to be confidential business (proprietary) information.
 - The information is considered to be proprietary because it concerns a licensee's or applicant's physical protection or material control and accounting program for special nuclear material pursuant to 10 CFR 2.790(d)(1).
 - The information was submitted by a foreign source and received in confidence pursuant to 10 CFR 2.790(d)(2).
- Exemption 5: The withheld information consists of interagency or intraagency records that are not available through discovery during litigation. Applicable privileges:
 - Deliberative process: Disclosure of predecisional information would tend to inhibit the open and frank exchange of ideas essential to the deliberative process. Where records are withheld in their entirety, the facts are inextricably intertwined with the predecisional information. There also are no reasonably segregable factual portions because the release of the facts would permit an indirect inquiry into the predecisional process of the agency.
 - Attorney work-product privilege. (Documents prepared by an attorney in contemplation of litigation)
 - Attorney-client privilege. (Confidential communications between an attorney and his/her client)
- Exemption 6: The withheld information is exempted from public disclosure because its disclosure would result in a clearly unwarranted invasion of personal privacy.
- Exemption 7: The withheld information consists of records compiled for law enforcement purposes and is being withheld for the reason(s) indicated.
 - (A) Disclosure could reasonably be expected to interfere with an enforcement proceeding (e.g., it would reveal the scope, direction, and focus of enforcement efforts, and thus could possibly allow recipients to take action to shield potential wrongdoing or a violation of NRC requirements from investigators).
 - (C) Disclosure would constitute an unwarranted invasion of personal privacy.
 - (D) The information consists of names of individuals and other information the disclosure of which could reasonably be expected to reveal identities of confidential sources.
 - (E) Disclosure would reveal techniques and procedures for law enforcement investigations or prosecutions, or guidelines that could reasonably be expected to risk circumvention of the law.
 - (F) Disclosure could reasonably be expected to endanger the life or physical safety of an individual.
- OTHER (Specify)

PART II.B -- DENYING OFFICIALS

Pursuant to 10 CFR 9.25(g), 9.25(h), and/or 9.65(b) of the U.S. Nuclear Regulatory Commission regulations, it has been determined that the information withheld is exempt from production or disclosure, and that its production or disclosure is contrary to the public interest. The person responsible for the denial are those officials identified below as denying officials and the FOIA/PA Officer for any denials that may be appealed to the Executive Director for Operations (EDO).

DENYING OFFICIAL	TITLE/OFFICE	RECORDS DENIED	APPELATE OFFICIAL		
			EDO	SECY	IG
Samuel J. Collins	Director, NRR	App. B	<input checked="" type="checkbox"/>		

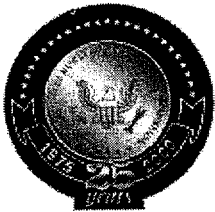
Appeal must be made in writing within 30 days of receipt of this response. Appeals should be mailed to the FOIA/Privacy Act Officer, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, for action by the appropriate appellate official(s). You should clearly state on the envelope and letter that it is a "FOIA/PA Appeal."

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

<u>NO.</u>	<u>DATE</u>	<u>ACCESSION NUMBER</u>	<u>DESCRIPTION/(PAGE COUNT)</u>
1.	2/16/00	ML003685113	NRC Inspection Report 50-400/2000-05 re: Discussion on Spent Fuel Pool Heat Exchanger Inspections, (15 pgs.).
2.	4/14/00	ML003707409	Letter from D. B. Alexander to DCD re: Response to NRC Request for Additional Information Regarding Rack Installation Spent Fuel Pools C&D, (9 pgs.).

**APPENDIX B
RECORDS BEING WITHHELD IN THEIR ENTIRETY**

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/(PAGE COUNT)/EXEMPTIONS</u>
1.	03/24/2000	Memo from G. Hubbard, NRC to R. Corriea, NRC Re: Safety Evaluation Input for the proposed amendment to support activation of the Shearon Harris Nuclear Power Plant Spent Fuel Pools C and D (TAC No. MA4432) (11 pages) ex. 5



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

February 16, 2000

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

SUBJECT: NRC INSPECTION REPORT NO. 50-400/2000-05

Dear Mr. Scarola:

This refers to the inspection conducted on January 31 - February 4, 2000, at your Harris facility. This was a special inspection covering activities related to the planned expansion of the Shearon Harris spent fuel pool capacity. The objectives of this inspection were to examine the equipment commissioning program for the C and D spent fuel pools, to inspect the ongoing construction activities, and to inspect the quality control processes and program for activation of the C and D spent fuel pools.

The inspection found that you have a comprehensive program to control, inspect, and document construction activities required for activation of the C and D spent fuel pools. Welding activities were being performed in accordance with Section III of the ASME Boiler and Pressure Vessel Code, and NRC requirements. The equipment commissioning program was being adequately implemented and should ensure that the C and D spent fuel pools meet design requirements and perform their design function. No violations of NRC requirements were identified during the inspection.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

Sincerely,

Original signed by Kerry D. Landis

Kerry D. Landis, Chief
Engineering Branch
Division of Reactor Safety

Docket No. 50-400
License No. NPF-63

Enclosure: NRC Inspection Report

cc w/encl: (See page 2)

A/1

cc w/encl:

Terry C. Morton, Manager
Performance Evaluation and
Regulatory Affairs CPB 9
Carolina Power & Light Company
Electronic Mail Distribution

Chris L. Burton
Director of Site Operations
Carolina Power & Light Company
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(cc w/encl cont'd - See page 3)

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Distribution w/encl:
 R. Laufer, NRR
 PUBLIC
 S. Uttal, OGC

OFFICE	RII:DRS	RII:DRS	RII:DRP	RII:DRS			
SIGNATURE							
NAME	LENAHAN	CROWLEY	BONSER	LANDIS			
DATE	4/ /2000	1/ /2000	1/ /2000	1/ /2000	4/ /2000	4/ /2000	4/ /2000
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-400

License No.: NPF-63

Report No.: 50-400/2000-05

Licensee: Carolina Power & Light Company (CP&L)

Facility: Shearon Harris Nuclear Power Plant, Unit 1

Location: 5413 Shearon Harris Road
New Hill, NC 27562

Dates: January 31 - February 4, 2000

Inspectors: J. Lenahan, Senior Reactor Inspector
Engineering Branch
Division of Reactor Safety

B. Crowley, Senior Reactor Inspector
Maintenance Branch
Division of Reactor Safety

Approved By: Kerry D. Landis, Chief
Engineering Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

Shearon Harris Nuclear Power Plant NRC Inspection Report 50-400/2000-05

In a letter dated December 23, 1998, the licensee requested an amendment to the Shearon Harris facility operating license to place spent fuel pools (SFP) C and D in service to increase the onsite spent fuel storage capacity. The licensee is currently operating and storing fuel in SFP A and B. The design basis for pools A and B was identical to that for pools C and D. These pools are located in a single building. During the early phase of construction, in the late 1970s and early 1980's, procurement and installation of the major system components for all four spent fuel pools were performed concurrently.

During preparation of the plans for completion of the C and D SFP, the licensee discovered that documentation for piping and pipe support welds on the ASME Class III SFP piping had been inadvertently destroyed. The most significant missing documents were the weld data reports (WDRs) for each of the welds. In order to demonstrate the weld quality for the piping welds the licensee developed and implemented an alternative inspection program. The inspectors examined the alternative piping weld inspection during the inspection documented in NRC Inspection Report number 50-400/99-12. The licensee determined that the existing pipe supports which lacked complete inspection documentation would be removed and replaced with new supports during completion of the C and D SFP.

This inspection included a review of the engineering documents prepared to complete the C and D SFP; the construction and quality control (QC) program and procedures which control piping and pipe support installation necessary to complete the C and D SFP; a walkdown inspection to examine completed work; the construction records documenting installation and inspection of the new piping and pipe supports; and the licensee's program for commissioning equipment for the C and D SFP. The inspectors used Temporary Instruction (TI) 2515/143 for guidance during this inspection.

The inspectors found that the licensee has a comprehensive program to control and inspect piping installation and welding in accordance with Section III of the ASME Boiler and Pressure Vessel Code, and NRC requirements. The inspectors also found that the licensee's program for commissioning of the C and D SFP equipment was being adequately implemented and should ensure that existing equipment meets design requirements and will perform their design function. No violations of NRC requirements were identified during the inspection.

REPORT DETAILS

E1. Conduct of Engineering

E1.1 Design Changes and Plant Modifications - Spent Fuel Pools C and D

a. Inspection Scope (TI 2515/143)

The inspectors reviewed the design changes prepared by licensee engineers to complete the C and D spent fuel pools.

b. Observations and Findings

The licensee implements design changes in accordance with CP&L procedure EGR-NGGC-0005, Engineering Service Requests (ESR). This procedure implements the design control program required by 10 CFR 50, Appendix B. The inspectors reviewed the following ESRs initiated by the licensee to complete the C and D spent fuel pools:

- ESR 95-00425, Study Effort to Support Fuel Pool in Service Date
- ESR 98-00218, CCW Tie In to Heat Exchangers for North Pools
- ESR99-00416, SFP Equipment Commissioning Plan

ESR 98-00218 was prepared for connecting the C and D spent fuel pool heat exchangers to the Unit 1 component cooling water system. During the inspection, the licensee was in the process of installing piping and pipe supports required for the tie-in of the CCW system to the SFP C and D heat exchangers. The final tie in will not be completed unless NRC approval is received for the fuel pool expansion. ESR 95-00425 was prepared to complete the C and D SFP piping, complete installation of equipment (pump motors, strainers, etc.), perform system pre-operational and startup testing, and revise existing plant procedures to incorporate the C and D SFP into the Unit 1 operating plant. During the current inspection pipe installation and pipe support installation was in progress. ESR 99-00416 was prepared to define the equipment commissioning requirements. Review of ESR 99-00416 and inspection of the equipment commissioning process is discussed in Section E8, below.

The inspectors reviewed the 10 CFR 50.59 safety evaluation, design inputs, design evaluations, assumptions, and references, design verification documentation, and installation drawings and instructions. The requirements and procedures for preoperational and startup testing were incomplete. Discussions with licensee engineers disclosed that these procedures will be developed following those used for startup of Unit 1 (SFP A and B). The 10 CFR 50.59 evaluation concluded that this project involved an unreviewed safety question (USQ) which required NRC approval prior to completion and startup. The USQ was due to the change in heat load on the CCW heat exchangers which had not been previously reviewed by NRC.

The above listed ESRs specify additional quality assurance (QA) requirements to supplement the current CP&L corporate program which primarily addresses the operating plant QA program. Examples of additional requirements include performance of hydrostatic testing of the systems/components in accordance with the American Society of Mechanical Engineers (ASME) Section III program which is more rigorous

than the ASME Section XI program. The involvement of the Authorized Nuclear Inspector (ANI) in review of work process control sheets is also specified.

c. Conclusions

The ESRs were technically adequate and met regulatory requirements.

E1.2 Pipe Welding and Inspection Activities

a. Inspection Scope (TI 2515/143)

The inspectors reviewed procedures, observed in-process welding and weld inspection activities, examined completed welds, and reviewed records for installation of the Component Cooling Water (CCW) System and the Spent Fuel Cooling (SFC) system pipe welds.

b. Observations and Findings

Procedure Reviews

ESRs 9500425 and 98-00219 specify that welding is to be performed in accordance with the Corporate Welding Manual. In accordance with the Corporate Welding Manual, the applicable Code for this welding is the ASME Boiler and Pressure Vessel Code, Section III, 1986 Edition with no Addenda. The requirements for pipe Welding are specified by the Corporate Welding Manual NGGM-PM-0003, Revision 52. Weld nondestructive examinations (NDE) are controlled by the Nuclear NDE Manual NGGM-PM-011, Revision 7. The inspectors reviewed the following welding control and NDE procedures, which are included in these two manuals:

- NW-01, Revision 7, Qualification of Welding and Brazing Procedures
- NW-02, Revision 7, Qualification of Welders and Welding Operators
- NW-03, Revision 6, Welding Material Control
- NW-06, Revision 7, General welding Procedure for Carbon and Low Alloy Steels, Stainless Steels, and Nonferrous Alloys
- NW-07, Revision 7, Weld Data Reports Preparation, and Use
- NDEP-A, Revision 1, Nuclear NDE Procedures and Personnel Process
- NDEP-0201, Revision 22, Liquid Penetrant Examination (visible dye, solvent removable)
- NDEP-0301, Revision 13, Magnetic Particle Examination (Dry Powder, Prods and Yoke)
- NDEP-0427, Revision 4, Digital Ultrasonic Thickness Measurement(Parameters Model 26DL Plus and Model 36DL Plus)
- NDEP-0601, Revision 13, VT Visual Examination of Piping System and Component Welds at Nuclear Power Plants

In addition to the welding control procedures, Welding Procedure Specifications (WPSs) 08-2-01, 08-3-01, 08-8-01, 01-3-04 and 01-3-01, which were used to weld the welds inspected in the paragraphs below, were reviewed by the inspectors. The inspectors also reviewed the following documents which specified additional requirements for installation of piping:

MMP-002, Revision 8, Installation of Piping and Piping Components

Drawing number CAR 2165-G-107S01, Field Installation Tolerances for Piping

NUA-NGGC-1532, Revision 3, Certification of Quality Control Inspectors

All procedures reviewed were comprehensive and provided detailed controls for the welding and NDE processes to meet ASME Code requirements.

Observation of In-process Welding and Nondestructive Examination (NDE)

The inspectors observed/inspected welding and NDE activities for the following in-process and completed welds:

- | | |
|------------------------|--|
| Dwg. SK-9500425-M-2040 | <ul style="list-style-type: none"> - FW-7 -Observed welding of final pass - FW-10 - Observed welding of final pass and witnessed visual (VT)and liquid penetrant (PT) inspection of the final weld - FW-19 - Examined final weld after preparation for NDE - FW-20 - Examined final weld after preparation for NDE - FW-13 -Witnessed PT inspection of final weld - FW-6 -Observed fitup, fitup inspection, and welding of the root pass |
| Dwg. Sk9800219-M-2003 | <ul style="list-style-type: none"> - FW-9, FW-10, FW-11, FW-57, and FW-82 - Examined final weld after acceptance by QC |
| Dwg. 2-SF-1 | <ul style="list-style-type: none"> -FW-3, FW-6, VW-5A, VW-5B - Examined final weld after acceptance by QC |

All work examined by the inspectors was performed by knowledgeable and qualified personnel in a quality manner. Final and in-process welds met ASME Code and licensee requirements.

The inspectors also observed the weld material issue station and examined weld material controls. The weld material issue station was orderly and weld material storage and issue were well controlled.

Review of Records

The inspectors reviewed the following records for the in-process and completed welds inspected and listed above:

In-process and completed, as applicable, Weld Data Reports (WDRs)

A sample of NDE Reports

Welder, NDE Examiner, and QC Inspector qualification records

A sample of vendor material certification records for PT materials

A sample of vendor material test reports for weld materials

All records reviewed were in order and provided good documentation to show that welding was being controlled in accordance with licensee and ASME Code requirements.

c. Conclusions

A detailed welding and NDE program equivalent to that used for original construction was in place and being implemented. Procedures were comprehensive and provided detailed controls for the welding and NDE processes. Work observed was performed by knowledgeable and qualified personnel in a quality manner. Records were in order and provided good documentation to show that welding was being controlled in accordance with licensee and ASME Code requirements.

E1.3 Installation of Pipe Supports

a. Inspection Scope (TI 2515/143)

The inspectors reviewed construction and quality control procedures which control installation of new pipe supports, examined completed pipe supports, and reviewed construction and inspection records to verify compliance with regulatory requirements.

b. Observations and Findings

The inspectors reviewed the following procedures which control installation and inspection of safety related pipe supports:

MMP-004, Revision 12, Installation of Pipe Supports

CMP-006, Revision 10, Concrete Anchors

CP&L Procedure NW-05, General Welding Procedure for Structural Welding Applications

Drawing number 2165-G-107S01, Field Installation Tolerances for Hangers

The inspectors questioned licensee engineers concerning the process controlling removal of the existing pipe supports for which documentation was missing. These discussions disclosed that the licensee initiated work requests for removal of existing supports which currently carry no vertical loads and therefore do not support the existing installed piping. For those existing supports that do carry vertical loads (supporting the existing piping), instructions for removal of the supports are specified in the WR/JO which covers installation of the new pipe support. The inspectors reviewed WR/JO numbers 99-AGLN1 and 99-ACLIN which specify the instructions for removal of supports carrying zero load on the CCW and SF piping. The work instructions specify that some support components, such as pipe clamps and struts, can be reused provided that documentation was available showing evidence that the components meet the requirements of the QA program. The remaining support materials which lack QA records documenting material specification requirements (heat numbers, physical and chemical properties, etc.) will be scrapped. Instructions were also specified in the

WR/JOs regarding repairs to embed plates in the event they were damaged by support removal.

The inspectors performed a walkdown inspection and examined the pipe supports listed below. Support number CC-H-2218 was complete. Work on the remaining supports was in progress. Acceptance criteria utilized by the inspectors included the installation drawings and the installation instructions specified in the WR/JOs. These instructions included weld data sheets, weld maps, inspection hold points, special instructions such as baseplate and concrete anchor installation requirements, if applicable, fastener torquing requirements, material verification requirements, and verification/inspection attributes. The following supports were inspected:

<u>Support Number</u>	<u>WR/JO No.</u>	<u>Attributes Inspected</u>
CC-H-2218	99-ACLI6	Support configuration and weld type and size
CC-H-1362	99-ACLI4	Support configuration
CC-H-1371	99-ACLE3	Support configuration and weld type and size
CC-H-2236	99-ACLE9	Concrete anchor installation
CC-H-2239	99-ACLI7	Concrete anchor installation
CC-H-2240	99-ACLI8	Concrete anchor installation
CC-H-2241	99-ACLI9	Support configuration and weld type and size. Field change request in design to resolve clearances between support and piping.
SF-H-1389	99-AGMM2	Weld to embed plate and concrete anchor installation

The inspectors verified that support member sizes, configuration, welding, concrete anchor installation, and other installation requirements were in accordance with the details specified in the design drawings and installation instructions. No deficiencies were identified. The inspectors reviewed the records for the above listed welds. These included WDRs and QC (visual) inspection results. The inspectors also reviewed the installation records and QC inspection records for the above listed concrete anchors. The records reviewed were complete and provided good documentation to show that the work was being performed in accordance with 10 CFR 50 Appendix B requirements.

c. Conclusions

Procedures for control of installation of pipe supports were technically adequate. Inspection of completed and in process pipe supports showed that the supports were being installed in accordance with design requirements. Records documenting installation and inspection of pipe supports were complete.

E8 Miscellaneous Engineering Issues

E8.1 (Closed) Inspector Followup Item (IFI) 50-400/99-12-01, Review of Final Equipment Commissioning Details. As noted in NRC Inspection Report 50-400/99-12, a significant portion of the Fuel Pool Cooling System and Component Cooling Water System piping and components for Fuel Pools "C" and "D" were installed during original construction in the late 1970s and early 1980s. As documented in section 26.5.0 of Engineering Service Request (ESR) Design Specification 95-00425, Revision 0, the equipment was never incorporated into the operating unit and has not been formally maintained under controlled storage since that time. The equipment was procured and installed to applicable quality assurance requirements. However, since the installed equipment was stored in-place without a formal storage and lay-up program, the licensee implemented an equipment commissioning or dedication process to ensure that the equipment will meet the applicable requirements and is capable of performing its intended function in the completed design. ESR 95-00425 requires a Matrix of Commissioning Requirements is to be developed to define the commissioning requirements, including any additional inspections and testing, for each component. At the time of the 99-12 NRC inspection, a preliminary matrix had been developed as part of ESR 95-00425 and ESR 99-00416 had been initiated to further detail and manage the commissioning process. Although plans and some of the details for the process were included in ESR 95-00425, most of the details for each individual component were being developed to be included in ESR 99-00416. This IFI was issued to further review the commissioning process after issue and implementation of ESR 99-0416. At the time of the current inspection, ESR 99-00416 had been issued and was being implemented. A number of components had been through the commissioning process.

The inspectors performed the following reviews/observations to evaluate the commissioning process:

ESR99-00416, Revision 0, SFP Equipment Commissioning Plan, was reviewed. The commissioning process includes the following activities:

Scope Development

To develop the scope for the commissioning process, a field walkdown of the installed equipment (mechanical, civil, instrumentation and control, and electrical) was performed to compare the installed equipment with the completed modification design and each item in scope will be identified and individually dispositioned as part of ESR 99-00416. The equipment was individually entered into a matrix wherein the commissioning requirements of each item was specified.

Document Review

For ASME Code equipment, quality documentation will be retrieved and reviewed to ensure that required quality assurance information is available, complete and acceptable. The verified records will include original procurement and field installation records. The equipment installation records will be compared with field conditions to ensure that the installation as accepted has not been altered. If records are missing or deficient, an assessment will be performed to determine what can be accepted by virtue of retest or re-inspection, or by use of alternate methods of verification. For non-Code

items, field testing activities will be specified as necessary to ensure the items are capable of performing their intended functions.

Test and Acceptance Criteria

The equipment commissioning effort specifies additional activities needed to ensure the required level of quality assurance because of the lack of formal storage and lay-up program since original equipment installation. These activities will include:

Field verification of equipment identification against procurement documentation with establishment of traceability to ASME Code Data Reports for code related equipment.

Physical inspections and testing as required to verify that plant activities since construction and lack of controlled storage conditions and regular maintenance has not caused any condition adverse to quality.

At the time of the current inspection, the Commissioning Matrix had been issued and some commissioning work completed. The inspectors reviewed the Commissioning Matrix and selected the completed and in-process activities for review/observation. Instructions for performing the required work and inspection activities are specified in work requests which are referenced in the commissioning matrix.

The following in-process work was inspected:

WR 98-AFIY1- Disassemble and Inspect Spent Fuel Pool Cooling Pump 2A

WR 98-AFIZ1- Disassemble and Inspect Spent Fuel Pool Cooling Pump 2B

Disassembly of Pump 2A was observed. Pump 2B, which had been disassembled prior to the inspection and not yet re-assembled was also observed. Other than a small amount of sand type material inside the pump casings, the internals of both pumps were in good condition. The licensee planned to replace the bearings and seals on both pumps.

WR 98-AFJF1- Disassemble and Inspect Train A Spent Fuel Cooling System Strainer

The internals of the "A" train strainer were observed. The strainer appeared to be in good condition.

WR 00-AAKR1 - Inspection of Shell Side of Train A Spent Fuel Cooling Heat Exchanger

WR 00-AAKS1 - Inspection of Shell Side of Train B Spent Fuel Cooling Heat Exchanger

These WRs were issued to inspect the shell side of the heat exchangers. The inspections included ultrasonic (UT) thickness inspection of the heat exchanger wall and boroscopic inspection of the internal (shell side) of the heat exchangers. The inspectors observed both of these inspections.

For the wall thickness inspections, the inspectors witnessed the UT measurements, observed calibration of the UT equipment (prior to and after the

inspections), and verified qualification of the NDE examiner. The wall thickness inspection consisted of approximately 50 inspections in a grid pattern on the bottom of each heat exchanger shell. If any type of degradation or corrosion of the shell occurred, the bottom was considered to be most susceptible. The UT measurements showed the shells to be uniform in thickness with no indication of wall thinning.

For the boroscopic inspection, in addition to witnessing licensee personnel, the inspectors observed the internal condition of the shell side of the heat exchangers using the boroscope. The inspection was performed through drain nozzles (2 in each heat exchanger) in the distributor boxes at the end of each tube bundle. The inspection was very limited due to the small nozzles and the lack of access to the tube bundles once inside the distributor boxes. Although detailed inspections were not possible, the general condition appeared to be good with light surface rust on the shell. Based on the limited view of the tube bundle, the tubes appeared shiny and clean.

The heat exchangers will be subject to additional testing during startup and preoperational tests. These tests include cleaning and flushing, hydrostatic testing of both the shell side and tube side of the heat exchangers to 150 percent of design/operating pressure, and testing to verify the operational characteristics of the heat exchangers.

WR 98-AFJB1 - Disassembly and Inspection of Spent Fuel Cooling System Heat Exchanger Outlet Isolation Valve 2SF-16

The valve had been removed from the system for inspection and re-furbishment as required. The inspectors observed the internal condition of the valve, and with exception of light surface rust, the valve appeared to be in good condition.

The following completed work packages were reviewed:

WR 98-AFIW1 - Spent Fuel Cooling System Valve 2SF-20, Remove, Disassemble, Inspect, and Re-furbish Valve

WR 98-AFIX1 - Spent Fuel Cooling System Valve 2SF-10, Remove, Disassemble, Inspect, and Re-furbish Valve

WR 98-AFIU1 - Spent Fuel Cooling System Valve 2SF-19, Remove, Disassemble, Inspect, and Re-furbish Valve

WR 98-AFIT1 - Spent Fuel Cooling System Valve 2SF-11, Remove, Disassemble, Inspect, and Re-furbish Valve

These manual valves had been removed from the system, disassembled, inspected, and re-assembled with new packing and gaskets. The completed work packages documented completion of the commissioning work in accordance with approved procedures and appropriate craft and QC signoffs.

Based on the above reviews/observations, the inspectors concluded that the equipment commissioning process should ensure that existing equipment will meet requirements

and will perform its design function. The observed activities and the completed records reviewed were considered appropriate to ensure that equipment is acceptable and provided evidence that the commissioning process was being adequately implemented as detailed in the licensee's commissioning process. This IFI is closed.

MANAGEMENT MEETINGS

The Inspectors presented the inspection results to members of licensee management and staff at the conclusion of the inspection on February 4, 2000. The licensee acknowledged the findings presented. Dissenting comments were not received from the licensee. The licensee did not identify any materials used during the inspection as proprietary information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

- D. Alexander, Manager, Regulatory Affairs
- B. Altman, Manager, Major Projects Section
- C. Burton, Director of Site Operations
- J. Eads, Supervisor, Licensing and Regulatory Programs
- S. Edwards, SFP Activation Project Manager
- J. Lane, Mechanical Engineer, Major Projects Section
- J. Scarola, Vice President, Harris Plant
- K. Shaw, Licensing Engineer, Major Projects Section
- M. Wallace, Senior Analyst, Licensing

Other licensee employees contacted included engineering, maintenance and administrative personnel.

NRC:

- J. Brady, Senior Resident Inspector

INSPECTION PROCEDURE USED

TI 2515/143, Shearon Harris Spent Fuel Pool ("C" and "D") Expansion

LIST OF ITEMS OPENED, CLOSED, OR DISCUSSED

Opened

NONE

Closed

50-400/99-12-01 IFI Review of Final Equipment Commissioning Details

Discussed

None

CP&L
Carolina Power & Light Company APR 14 ~
Harris Nuclear Plant fuuu
PO Box 165

SERIAL: HNP-00-0

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New Hill NC 27562

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
RESPONSE TO NRC REQUEST FOR ADDITIONAL
INFORMATION (RAI) REGARDING RACK INSTALLATION
SPENT FUEL POOLS C & D

Dear Sir or Madam:

By letter HNP-98-188, dated December 23, 1998, Carolina Power & Light Company (CP&L) submitted a license amendment request to increase fuel storage capacity at the Harris Nuclear Plant (HNP) by placing spent fuel pools C & D in service. The U.S. Nuclear Regulatory Commission (NRC) issued letters dated March 24, 1999, April 29, 1999, June 16, 1999, August 5, 1999, and September 20, 1999 requesting additional information regarding our license amendment application. HNP letters HNP-99-069, dated April 30, 1999, HNP-99-094, dated June 14, 1999, HNP-99-112, dated July 23, 1999, HNP-99-129, dated September 3, 1999, and HNP-99-172, dated October 29, 1999 provided our respective responses.

On March 30, 2000, NRC staff initiated a conference call with CP&L to discuss additional details related to the installation of rack modules into pools C & D. A follow-up conference call between NRC staff and CP&L was held on April 4, 2000 to discuss the numerical results of postulated rack drop analyses. In lieu of issuing a formal, documented request for additional information (RAI), NRC staff verbally issued a RAI during the above-referenced conference calls and requested CP&L to provide a formal, documented response to

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o the staff's RAI. Enclosure 1

to this letter provides CP&L's responses to the staff's RAI.

Enclosure 2 to this letter provides a replacement page for Holtec Licensing Report IIJ-971760,

"Licensing Report for Expanding Storage Capacity in Harris Spent Fuel Pools C & D,"

previously included as Enclosure 6 (proprietary version) and Enclosure 7 (non-proprietary version) to our license amendment request (SERIAL: HNP-98-188, dated December 23, 1998).

The replacement page (page 10-7) of the Holtec report reflects the removal of the reference to

Cask Handling Crane which was replaced with the reference to Auxiliary Crane, consistent with

the discussion of rack installation provided in Section 10 of the Holtec report. This revision is identified by a revision bar in the right margin of the page.

541 3 Shearon Harris Road New Hill NC

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SERIAL: IINP-00-069

Page 2

An enclosed replacement page 10-7 is provided for both the proprietary and non-proprietary

versions of the Holtec report. The replacement page 10-7 is the same for both the proprietary and

non-proprietary versions of the Holtec report (i.e., no proprietary information actually appears on

page 10-7 of the proprietary version of the report), with the exception of the page footer.

Accordingly, there is no requirement to withhold from public disclosure the enclosed

replacement page which has the 'Holtec International Proprietary Information' footer.

The enclosed information is provided as a supplement to our December 23, 1998 license

amendment request and does not change our initial determination that the proposed license

amendment represents a no significant hazards consideration.

Please refer any questions regarding the enclosed information

to Mr. Steven Edwards at (919)
362-2498.

Sincerely,

Donna B. Alexander
Manager, Regulatory Affairs
Harris Nuclear Plant

KWSIkws

Enclosures:

- 1. CP&L Responses to NRC Request For Additional Information (3 pages)
- 2. Replacement page 10-7 (proprietary and non-proprietary versions) of Holtec report H[-971760 (2 pages)

c: Mr. J. B. Brady, NRC Senior Resident Inspector (wi Enclosure 1)
 Mr. Mel Fry, N.C. DEHNR (wi Enclosure 1)
 Mr. R. J. Laufer, NRC Project Manager (w/ all Enclosures)
 Mr. L. A. Reyes, NRC Regional Administrator - Region II (wi Enclosure 1)

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SERIAL: HNP-OO-069

Page 3

bc: (all WI Enclosure 1)

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|--------------------------|--------------------------|
| Mr. K. B. Altman | Ms. L. N. Hartz |
| Mr. G.E. Attarian | Mr. W J. Hindman |
| Mr. R. H. Bazemore | Mr. C. S. Hinnant |
| Mr. C. L. Burton | Mr. W. D. Johnson |
| Mr. S. R. Carr | Mr. G. J. Kline |
| Mr. J. R. Caves | Mr. B. A. Kruse |
| Mr. H. K. Chernoff (RNP) | Ms. T. A. Head (PE&RAS F |
| Mr. R. J. Duncan II | Mr. R. D. Martin |
| Mr. W. F. Conway | Mr. T. C. Morton |
| Mr. G. W. Davis | Mr. J. H. O'Neill, Jr. |

ile)

Mr. J. W. Donahue
Mr. W. J. Dorman (BNP)
Mr. R. S. Edwards
Mr. R. J. Field
Mr. K. N. Harris

Mr. J. S. Scarola
Mr. J. M. Taylor
Nuclear Records
Harris Licensing File
Files: H-X-051.1
H-X-0642

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Enclosure 1 to SERIAL: HNP-00-069
Page 1 of 3

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50400/LICENSE NO. NPF-63
RESPONSE TO NRC REQUEST FOR ADDITIONAL INFORMATION
REGARDING RACK INSTALLATION
SPENT FUEL POOLS C & D

NRC Question 1: Will spent fuel storage racks be installed using the Fuel Handling Building (FHB) Auxiliary Crane or the Cask Handling Crane?

CP&L Response to Question 1: As stated within our License Amendment Request (LAR) to place spent fuel pools C and D in service (ref.: SERIAL: HNP-98-188, dated December 23, 1998), Enclosure 6, page 3-3: "The Fuel Handling Building Auxiliary Crane will be used for installation of the new storage racks in pools C and D." The Spent Fuel Cask Handling Crane (CHC) cannot be used for rack installation since travel limitations prohibit its movement over the spent fuel pools." The reference to the Cask Handling Crane found on page 10-7 of the Holtec Licensing Report (Enclosure 6 of the aforementioned LAR) has been revised, consistent with the discussion of rack installation on that same page, to indicate that it is the Auxiliary Crane that will be used to lower rack modules into pools C and D. A revised page 10-7, one each for the proprietary and non-proprietary versions of the Holtec report, are included as Enclosure 2 to this letter.

NRC Question 2: Please identify the capacity of the Auxiliary

Crane.

CP&L Response to Question 2: The LAR Enclosure 6, page 3-4 states: "The auxiliary crane is a single failure proof crane and is currently rated for 10 tons." This is further clarified in Harris Plant Design Basis Document DBD-109 (Fuel Handling Equipment) which states: "[The] 12 ton design capacity Auxiliary Crane is permitted to handle [a] 10 ton load. Loads greater than 10 tons but less than 12 tons require an engineering evaluation." This information is also included on FSAR page 9.1.4-16 (Amendment No.49) which states: "The Auxiliary Crane is used for handling of the removable barrier, pool gates, fuel racks and other miscellaneous items weighing less than 10 tons. The handling of loads weighing more than 10 tons but less than 12 tons are administratively controlled." Since the heaviest spent fuel storage rack that will be installed in either pool C or D is a 13x13 cell BWR rack with a dry weight of 15,700 lbs, the 10 ton normal load limit will not be exceeded.

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Enclosure 1 to SERIAL: HNP-00-069

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NRC Question 3: LAR Enclosure 6 page 7-7 states: ". . . the pool structure will not suffer any primary structural damage" [as a result of a postulated rack drop]. Please provide additional details concerning the results of this analysis.

CP&L Response to Question 3: The information and conclusions documented in Enclosure 6 of the LAR relative to the postulated rack drop are extracted and summarized from Holtec Report HI-971748, Analysis of the Mechanical Accidents for Harris Nuclear Plant, Revision 1, dated April 6, 1998.

Use of the single failure proof Auxiliary Crane for rack lifting follows the NUREG-0612 guidelines intended to preclude the possibility of rack drops. Nevertheless, Holtec evaluated the extremely remote possibility of the heaviest possible rack dropping from the operating deck

elevation and impacting the pool floor liner plate. This constitutes a drop of 40 feet through water. The analysis was performed using the LS-DYNA3D computer code. The objective of this scenario was to confirm that the structural integrity of the pool is maintained, thus precluding a rapid loss of pool water. The analysis indicated that the 3/16 inch thick stainless steel liner would be locally breached around the periphery of the pedestal contact area. The pedestal would indent the concrete approximately 2.7 inches in depth, but the structural integrity of the heavily reinforced concrete is not compromised, since the steel reinforced concrete is approximately 12 feet in thickness at these locations.

NRC Question 4: Describe the spent fuel pool liner leakage detection system.

CP&L Response to Question 4: The design and operation of the liner leakage detection system was previously described in CP&L letter SERIAL: HNP-99-1 12, dated July 23, 1999. Please see the responses to questions 9, 10 and 11 which describes how any leakage past the liner resulting from a postulated rack drop would be collected and contained. Also noted in FSAR 9.1.1.2, page 9.1.1 - 1: "provisions are made to limit and detect leakage from the fuel pools through the use of liner leak detection channels which are placed in various locations outside the stainless steel liner and pool gates. These channels funnel any leakage to drain lines which are checked periodically to determine the structural integrity of the pools and gates." Note that the liner leakage detection system valves are normally closed and are only opened to check for and measure any leakage during auxiliary operator rounds conducted in accordance with Harris Plant Operating Procedure OMM-016 (Operator Logs). Valve positions are identified in Harris Plant Operating Procedure OP-i 16 (Fuel Pool Cooling and Cleanup) Attachment 3 - Fuel Pool Cooling and Cleanup System Leak Detection System Valve Lineup Checklist.

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Enclosure 1 to SERIAL: HNP-00-069

NRC Question 5: Identify the spent fuel pool makeup water sources and capacities.

CP&L Response to Question 5: Normal pool makeup is accomplished using:

- Demineralized Water system (ref.: OP-i 16, Sections 8.4, 8.5 or 8.6),
 - Refueling Water Storage Tank (ref.: OP-i 16, Sections 8.4 and 8.5),
 - Reactor Coolant Drain Tank (ref.: OP-i 16, Section 8.22),
- or
- Reactor Makeup Water Storage Tank (ref.: OP-i 16, Section 8.26).

Emergency makeup can be provided by the Emergency Service Water system (ref.: OP-i 16 Section 8.13).

Normal makeup rates differ depending on the method selected. Makeup rates using

Demineralized Water as described in OP-i 16, Section 8.4 are set between 230 gpm and 260 gpm.

Makeup flow rates described in OP-i 16, Section 8.5 can be up to 325 gpm. The makeup

methods described in OP-i 16, Section 8.6 are described as "relatively slow" with flow provided

through the skimmer system. Fuel Pool Skimmer flow rates are identified in FSAR Table 9.1.3-2

as between 20 gpm and 50 gpm each. Makeup flow rates are identified in OP-i 16, Section 8.22

as approximately 100 gpm. Makeup rates using OP-i 16, Section 8.26 depend on the Reactor

Makeup Water Pump flow rates. The Reactor Makeup Water Pumps have a rated capacity of 150 gpm each.

ENCLOSURE 2 to SERIAL: HNP-00-069

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400ILICENSE NO. NPF-63
RESPONSE TO NRC REQUEST FOR ADDITIONAL
INFORMATION (RAI) REGARDING RACK INSTALLATION
SPENT FUEL POOLS C & D

Replacement page 10-7 for Holtec Licensing Report HI-97176

(2 pages total)

The new rack lifting device shall be installed into the rack and each lift rod successively engaged.

Thereafter, the rack shall be transported to a pre-levelled surface where the appropriate quality control receipt inspection shall be performed.

In preparing Pool C or D for the initial rack installation, the pool floor shall be inspected and any debris which may inhibit the installation of bearing pads will be removed. New rack bearing pads shall be positioned in preparation for the rack modules which are to be installed. Elevation measurements will then be performed in order to gage the amount of adjustment required, if any, for the new rack pedestals.

The new rack module shall be lifted with the Auxiliary Crane and transported along the safe load path. The rack pedestals shall be adjusted in accordance with the bearing pad elevation measurements in order to achieve module levelness after installation.

It is anticipated that the rack modules shall be lowered into the Pools C and D using the Auxiliary Crane. A hoist with sufficient capacity will be attached to the Auxiliary Crane for installation and removal activities in order to eliminate contamination of the main hook during lifting operations in the pools. The rack shall be carefully lowered onto its bearing pads. Movements along the pool floor shall not exceed six inches above the liner, except to allow for clearance over floor projections.

Elevation readings shall be taken to confirm that the module is level and as-built rack-to-rack and rack-to-wall offsets shall be recorded. The lifting device shall be disengaged and removed from the fuel pool under Radiation Protection direction.

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Thereafter, the rack shall be transported to a prelevelled surface where the appropriate quality control receipt inspection shall be performed.

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lifting operations in the pools. The rack shall be carefully lowered onto its bearing pads.

Movements along the pool floor shall not exceed six inches above the liner, except to allow for

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rack-to-wall offsets shall be recorded. The lifting device shall be disengaged and removed from

the fuel pool under Radiation Protection direction.

Holtec International Proprietary Information

10-7

Holtec Report HI-971760

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