

April 7, 1999

Mr. D. E. Young, Vice Presic
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

SUBJECT: ISSUANCE OF AMENDMENT NO. 181 TO FACILITY OPERATING LICENSE NO. DPR-23 REGARDING H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2 - AMENDMENT FOR A PREVIOUSLY UNREVIEWED SAFETY QUESTION REGARDING MOVEMENT OF SPENT FUEL SHIPPING CASK AT H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2 (TAC NO. MA0652)

Dear Mr. Young:

The Commission has issued the enclosed Amendment No. 181 to Facility Operating License No. DPR-23 for the H. B. Robinson Steam Electric Plant, Unit No. 2 (HBRSEP). This amendment consists of a change to the Updated Final Safety Analysis Report (UFSAR) in response to your request for amendment dated August 28, 1997, as supplemented by your letters dated June 17, 1998, October 29, 1998, and February 11, 1999.

This amendment revises the UFSAR to allow movement of spent fuel shipping cask model IF-300 with the cask valve covers removed at HBRSEP by revising the UFSAR to include the evaluation of a previously unanalyzed accident scenario. The event is a spent fuel cask drop occurring during a specific part of the cask handling process where the cask is moved, with its valve covers removed, by crane from the decontamination facility to the shipping rail car using a non-redundant cask lifting yoke. The analysis bounds a second previously unanalyzed scenario wherein lateral movement of the cask into plant equipment results in damage to the valves.

Also enclosed is the Notice of Issuance which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

Original signed by:
Ram Subbaratnam, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-261

Enclosures:

- 1. Amendment No. 181 to License No. DPR-23
- 2. Safety Evaluation
- 3. Notice

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*See previous concurrence

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PM:PDH/S2	LA:PDII/S2	OGC*	PERB/NRR	SC:PDII/S2	g:PDII*
RSubbaratnam	EDunnington	APH	RPederson*	SPeterson*	HBerkow
4/7/99	4/7/99	2/24/99	3/25/99	4/5/99	4/6/99
Yes/No	(Yes)/No	Yes/No	(Yes)/No	Yes/No	

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UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

April 7, 1999

Mr. D. E. Young, Vice President
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

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Also enclosed is the Notice of Issuance which has been forwarded to the Office of the Federal Register for publication.

Sincerely,

A handwritten signature in black ink, appearing to read "Ram Subbaratnam", written over a horizontal line.

Ram Subbaratnam, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket No. 50-261

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2. Safety Evaluation
3. Notice

cc w/encls: See next page

Mr. D. E. Young
Carolina Power & Light Company

H. B. Robinson Steam Electric
Plant, Unit No. 2

cc:

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

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

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

Mr. Robert P. Gruber
Executive Director
Public Staff - NCUC
Post Office Box 29520
Raleigh, North Carolina 27626-0520

U.S. Nuclear Regulatory Commission
Resident Inspector's Office
H. B. Robinson Steam Electric Plant
2112 Old Camden Road
Hartsville, South Carolina 29550

Mr. Virgil R. Autry, Director
South Carolina Department of Health
Bureau of Land & Waste Management
Division of Radioactive Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Mr. J. W. Moyer
Director of Site Operations
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

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

Public Service Commission
State of South Carolina
Post Office Drawer 11649
Columbia South Carolina 29211

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

Mr. H. K. Chernoff
Supervisor, Licensing/Regulatory Programs
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550

Mr. R. L. Warden
Manager - Regulatory Affairs
Carolina Power & Light Company
H. B. Robinson Steam Electric Plant,
Unit No. 2
3581 West Entrance Road
Hartsville, South Carolina 29550-0790

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B. Bonser, RII

cc: H. B. Robinson 2 Service List



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

CAROLINA POWER & LIGHT COMPANY

DOCKET NO. 50-261

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 181
License No. DPR-23

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Carolina Power & Light Company (the licensee), dated August 28, 1997, as supplemented by letters dated June 17, 1998, October 29, 1998, and February 11, 1999, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the changes to the Updated Final Safety Analysis Report to reflect new analysis of the radiological consequences of dropping a fuel cask as set forth in the application for amendment by the Carolina Power & Light Company dated August 28, 1997, as supplemented by letters dated June 17, 1998, October 29, 1998, and February 11, 1998, are authorized.

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3. This license amendment is effective as of the date of its issuance and shall be implemented within 30 days of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Sheri R. Peterson, Chief, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Date of Issuance: April 7, 1999



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATING TO AMENDMENT NO. 181 TO FACILITY LICENSE NO. DPR-23

CAROLINA POWER & LIGHT COMPANY

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT 2

DOCKET NO. 50-261

1.0 INTRODUCTION

By letter dated August 28, 1997, as supplemented by letters dated June 17, 1998, October 29, 1998, and February 11, 1999, Carolina Power and Light Company (the licensee) requested NRC approval for a revision to the H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP) Updated Final Safety Analysis Report (UFSAR) that changes the design basis for fuel cask handling operations. The scenario concerns movement of spent fuel shipping cask model IF-300 from the decontamination facility at the HBRSEP to the shipping railcar using a crane in a non-single-failure-proof configuration, i.e using a non-redundant cask lifting yoke, without the cask valve covers installed. The analysis also considered a second scenario of potential damage by lateral movement of the cask into plant equipment that results in damage to the valves. The proposed revision would add a discussion in the UFSAR for the handling of an IF-300 fuel cask with less than the full designed cask integrity as above.

Spent fuel in an IF-300 shipping cask is routinely shipped from HBRSEP to another nuclear plant in the licensee's system for storage. When used within the limitations listed in its Certificate of Compliance (CoC)(with valve covers installed), the IF-300 shipping cask is designed to withstand being dropped from 30 feet onto an unyielding surface. In concert with review criteria in Section 15.7.5 of the NRC's NUREG-0800, Standard Review Plan (SRP), the consequences of a cask drop accident were not analyzed for HBRSEP since the potential drop of a spent fuel cask is limited to less than an equivalent 30-foot drop onto a flat, essentially unyielding, horizontal surface. However, recently the licensee has identified that some portions of the cask lifts used in removing the spent fuel from the spent fuel pool are performed with the protective exterior valve covers removed using a non-single-failure-proof configuration, i.e, while using a non-redundant cask lifting yoke. Although these portions of the cask movements do not represent a potential drop of more than 30 feet, the licensee realized that such drops with less than the full cask integrity (valve covers removed) are outside the analyzed cask design and constitute an unreviewed safety question.

The licensee has analyzed the consequences of a cask drop accident with the cask configured as used at HBRSEP. This analysis indicates that, even without full cask integrity, dropping an IF-300 cask (30-foot equivalent drop) loaded with the maximum fuel loading results in offsite doses that are well within the acceptance criteria in the SRP. The licensee concluded that the cask drop analysis bounds any consequences that would be incurred due to cask impact during lateral movement during any part of the cask handling operation.

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2.0 EVALUATION

The staff's evaluation of the proposed change to the HBRSEP licensing basis consisted of reviewing the assumptions and methods in the licensee's radiological consequence analysis to ensure they are conservative, bounding, and consistent with the HBRSEP design basis. As a sample check, the staff also performed calculations for the control room using the HABIT Code with the licensee's input assumptions. The HABIT calculations gave doses consistent with the licensee's results. The licensee's consequence analysis assumed the bounding condition that the IF-300 cask was loaded with pressurized-water reactor fuel assemblies with maximum burn-up (45,000 MWd/MTU). In concert with item 10 of the IF-300 cask CoC (Certificate number 9001 Rev. 31), a minimum decay time of 5 years was assumed. The fuel pin gap activity and chemical composition assumptions were consistent with the guidance in Regulatory Guide (RG) 1.25. In addition, the maximum reactor power level (with a radial peaking factor of 1.65) consistent with the RG 1.25 guidance was assumed for each assembly. The licensee's analysis used the bounding assumption that 100% of the fuel pin gap activity in the fully loaded cask was released to the environment with no filtration. The worst case, short-term, ground level atmospheric dispersion values for the Exclusion Area Boundary listed in the HBRSEP FSAR were also applied.

The staff concludes, based on this evaluation, that the licensee has demonstrated with reasonable assurance that the maximum radiological consequences of dropping an IF-300 cask at HBRSEP are radiation doses to members of the public that are a small fraction of the numerical criteria in 10 CFR Part 100 and are well within the acceptance criteria in the SRP. The staff also finds that the licensee's analysis is reasonable in its conclusion that the consequences of the cask drop accident bound those that might be incurred due to impact from lateral movement. Therefore, they are acceptable.

3.0 STATE CONSULTATION

In accordance with its stated policy, on February 17, 1999, the staff consulted with the South Carolina State official, Virgil Autry, South Carolina Department of Health, Bureau of Radiological Health and Environmental Control. The State official had no comments.

4.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on April 7, 1999 (64 FR 17019). Accordingly, based upon the environmental assessment, the staff has determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

5.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that (1) there is reasonable assurance that the health and safety of the public will not be endangered by

operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

Principal Contributor: Roger Pedersen

Date: April 7, 1999

UNITED STATES NUCLEAR REGULATORY COMMISSIONLICENSEEDOCKET NO. 50-261NOTICE OF ISSUANCE OF AMENDMENT TO
FACILITY OPERATING LICENSE

The U.S. Nuclear Regulatory Commission (Commission) has issued Amendment No. to Facility Operating License No. DPR-23 issued to H. B. Robinson Steam Electric Plant, Unit 2 (HBRSEP), which revised the Updated Final Safety Analysis Report (UFSAR) for operation of HBRSEP located in Darlington County, SC. The amendment is effective as of the date of issuance.

This amendment consists of a change to the UFSAR in response to the request for amendment dated August 28, 1997, as supplemented by letters dated June 17, 1998, October 29, 1998, and February 11, 1999.

The application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment to Facility Operating License and Opportunity for a Hearing in connection with this action was published in the FEDERAL REGISTER on May 21, 1998 (63 FR 28008). No request for a hearing or petition for leave to intervene was filed following this notice.

The Commission has prepared an Environmental Assessment related to the action and has determined not to prepare an environmental impact statement. Based upon the

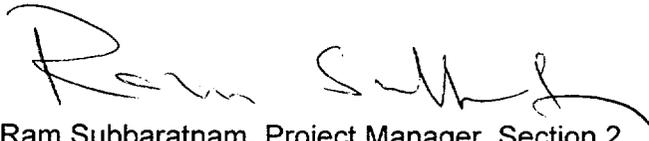
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environmental assessment, the Commission has concluded that the issuance of the amendment will not have a significant effect on the quality of the human environment (64 FR 17019).

For further details with respect to the action see (1) the application for amendment dated August 28, 1997, as supplemented June 17, 1998, October 29, 1998, and February 11, 1999, (2) Amendment No. 181 to License No. DPR-23, (3) the Commission's related Safety Evaluation, and (4) the Commission's Environmental Assessment. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street NW., Washington, DC, and at the local public document room located at Hartsville Memorial Library, 147 West College Avenue, Hartsville, South Carolina 29550.

Dated at Rockville, Maryland, this 7th day of April, 1999.

FOR THE NUCLEAR REGULATORY COMMISSION



Ram Subbaratnam, Project Manager, Section 2
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation