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AUTH.NAME AUTHOR AFFILIATION
UTLEY,E.E. Carolina Power & Light Co.
RECIP.NAME RECIPIENT AFFILIATION
VARGA,S.A. Operating Reactors Branch 1

SUBJECT: Forwards supplemental info re expansion of spent fuel storage capacity,per 810127 request.

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Carolina Power & Light Company

June 15, 1981

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Office of Nuclear Reactor Regulation
ATTENTION: Mr. Steven A. Varga, Chief
Operating Reactors Branch No. 1
United States Nuclear Regulatory Commission
Washington, D. C. 20555

H. B. ROBINSON STEAM ELECTRIC PLANT UNIT NO. 2
DOCKET NO. 50-261
LICENSE NO. DPR-23
SUPPLEMENTAL RESPONSES TO REQUEST FOR
ADDITIONAL INFORMATION CONCERNING
SPENT FUEL POOL EXPANSION

Dear Mr. Varga:

On May 11, 1981, Carolina Power & Light Company (CP&L) responded to your request dated January 27, 1981 for additional information concerning our December 1, 1980 submittal for the expansion of the spent fuel storage capacity at H. B. Robinson. We were unable to respond to several of the questions because they pertained to construction details which were still in the planning stage. Some of these details are now known and are reflected in the responses attached to this letter. Please contact my staff if you have any questions regarding our proposed modification.

Yours very truly,

E. E. Utley
Executive Vice President
Power Supply and
Engineering & Construction

SDF/jc (824-909)
Attachment

cc: Mr. J. D. Neighbors

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411 Fayetteville Street • P. O. Box 1551 • Raleigh, N. C. 27602

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Auxiliary Systems Branch
H. B. Robinson Spent Fuel Pool Expansion Preliminary Questions

QUESTION

1. Section 6 of the December 1, 1980 submittal indicates that a temporary traveling bridge and hoist is to be erected on the fuel handling bridge rails. It will handle the old and new storage racks located beyond the reach of the Spent Fuel Cask Handling Crane. In this regard, provide the following additional information.

   a. Describe the temporary crane, with the aid of drawings, the codes and standards to which it has been built, its load rating, and the precautionary measures taken during its installation and removal which precludes it or its components from being dropped on stored spent fuel during its installation or removal.

   b. Describe and discuss, with the aid of drawings, the adequacy of the laydown area provided for the racks when the load is being transferred from the spent fuel cask handling crane to the temporary crane and the reverse.

   c. In the load handling operations involving the movement of any temporary structures, indicate and describe the load handling equipment and rigging that will be employed as well as the sequence and frequencies of these operations in order to complete the spent fuel pool modifications.

   d. Describe the lifting devices and associated attachment points interposed between the lifting devices and load. The response should include sufficient detail to enable the reviewer to conclude that they will not fail during the installation and removal of the temporary crane and storage racks or other temporary structures.

e. With the aid of drawings, describe the sequence and travel paths of all heavy load handling operations that are required in order to implement the spent fuel pit modifications.

CP&L RESPONSE (Items 1.a through 1.e)

1.a The temporary crane, or other lifting equipment has not been designed or specified. However, it will be in accordance with general industry standards for the class of equipment selected. A means will be provided to preclude lifting the racks more than six inches above the fuel pool floor with this temporary equipment. To the extent possible, this equipment will be installed or moved into the Spent Fuel Building outside the periphery of the fuel pool. Any temporary lifting equipment heavier than a fuel assembly (with RCCAs) and associated handling tools will be installed using the single-failure-proof cask crane and/or double rigging to assure that a single failure will not result in an unanalyzed load-drop event. It is not anticipated that any non-buoyant load will be handled over spent fuel whether double-rigged or not.

1.b The laydown area consists of the cask area of the spent fuel pool for the 8 cell x 10 cell rack and the area just south of the cask area for the three 8 cell x 12 cell racks (see sketches included in answer to question 5). These areas are large enough to accommodate the designated racks. With the addition of the temporary platform in the fuel cask area (see answer to 1.f), the laydown areas will be at the elevation of final rack placement so that the racks will only require lateral movement in a straight line to reach their final location. The fuel pool floor has been analyzed for loads greater than the empty racks and the temporary platform will be designed to withstand at least the same rack drop as the fuel pool floor.

1.c See answer to 1.a.

1.d The rack attachment device is a single-failure-proof lifting rig being designed by Westinghouse that consists of lifting bar assemblies that connect to the bottom support plate of the racks down through four fuel locations, a spreader plate assembly connecting these four in an "X" arrangement, and redundant lifting sling assemblies to connect with a duplex hook and a shackle. The loops of the sling assemblies are being reviewed for compatibility with the cask crane hook and shackle. If an adapter is required, it will be analyzed and designed to single-failure criteria. See the answers to 1.a for the installation of temporary lifting equipment and 1.f for the use of this equipment. Attachment between the temporary lifting equipment and the racks has not been designed, but standard precautions will be taken to protect the racks and adjacent structures against damage.

1.e Loads heavier than a fuel assembly will be rigged to withstand a single failure, so they may be handled along any path. However, as noted in answer to 1.a, it is not anticipated that any non-buoyant loads will be handled over spent fuel. Except for temporary lifting equipment (see 1.a), the only loads to be handled will be the racks which will be installed in the cleared areas shown in the sketches submitted in answer to question 5.

Radiological Assessment Branch Questions

QUESTION

471.3 Describe the use of mockups, specialized training, and special tools in preparation for this task as aspects of your efforts to achieve ALARA exposure (e.g., mock-ups of pool support installation, new rack installation, rack decontamination, etc.).

CP&L RESPONSE

471.3 As-built drawings will be used to plan detailed removal procedures in conjunction with the organization who will perform the work. Tools will be selected appropriate to each task and will be suited for underwater work. Their suitability will be verified prior to entry to the pool. Spent fuel will be shuffled to maintain as much separation between divers and fuel as possible (see sketches for answer to question 5 of January 27, 1981 NRC request). From measurements in our Brunswick plant pools and the experience of Duke Power Company in re-racking, this should lower the dose rate from fuel in the work area to approximately background. The racks to be removed will be washed off underwater, and the area will be kept as clean as possible by underwater vacuuming. After underwater cleaning, the removed racks should be relatively "clean," and will be packaged and shipped as any other LSA material.