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Docket No. 50-261

MEMORANDUM FOR: Thomas Novak, Assistant Director
for Operating Reactors, DL

FROM: William E. Kreger, Assistant Director
for Radiation Protection, DSI

SUBJECT: H. B. ROBINSON, UNIT NO. 2 - SPENT FUEL POOL EXPANSION

The Effluent Treatment Systems Branch (ETSB) has completed the review and evaluation of "Request for License Amendment - Spent Fuel Pool Storage Expansion", dated December 1, 1980, and submitted by Carolina Power and Light Company for H. B. Robinson, Unit No. 2. We find that the proposed modification to the H. B. Robinson Unit 2 SFP is acceptable because there will be no change in the radwaste management systems and the amount of radioactivity released to the environment, as a result of the proposed modification, is negligible.

Enclosure 1 is suitable for inclusion in the Safety Evaluation. Enclosure 2 is suitable for inclusion in the Environmental Impact Appraisal.

Original signed by,
W. E. Kreger

William E. Kreger, Assistant Director
for Radiation Protection
Division of Systems Integration

Enclosures:
1. Safety Evaluation Input
2. Environmental Impact Appraisal Input

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DATE	07/21/81	07/22/81	07/23/81	07/23/81			

Enclosure 1

SAFETY EVALUATION INPUT FROM
THE EFFLUENT TREATMENT SYSTEMS BRANCH
IN THE MATTER OF THE H. B. ROBINSON, UNIT NO. 2
SPENT FUEL POOL EXPANSION APPLICATION

3.6 Radioactive Waste Treatment

The plant contains waste treatment systems designed to collect and process the gaseous, liquid and solid wastes that might contain radioactive material. The waste treatment systems were evaluated in the Safety Evaluation, dated May 1970. There will be no change in the waste treatment system or in the conclusions given in Section 2.6 of the evaluation of these systems because of the proposed modification, and therefore, the H. B. Robinson, Unit 2, spent fuel pool expansion is acceptable.

Enclosure 2

ENVIRONMENTAL IMPACT APPRAISAL INPUT FROM
THE EFFLUENT TREATMENT SYSTEMS BRANCH
IN THE MATTER OF THE H. B. ROBINSON, UNIT NO. 2
SPENT FUEL POOL EXPANSION APPLICATION

1.3 Radioactive Wastes

The plant contains waste treatment systems designed to collect and process the gaseous, liquid and solid waste that might contain radioactive material. The waste treatment systems are evaluated in the Final Environmental Statement (FES) dated April 1975. There will be no change in the waste treatment systems described in Section 3.5 of the FES because of the proposed modification.

1.4 Spent Fuel Pool Cleanup System

The SFP cleanup system is designed to process 5% (100 gpm) of the SFP cooling system flow rate. It consists of a demineralizer with an inlet filter and the required piping, valves, and instrumentation. This cleanup system is similar to such systems at other nuclear plants which maintain concentrations of radioactivity in the pool water at acceptably low levels.

Therefore, because we expect only a small increase in radioactivity released to the pool water as a result of the proposed modification, as discussed in Section (Radiological Impacts), we conclude the spent fuel pool cleanup system is adequate for the proposed modification and will limit the concentrations of radioactivity in the pool water to acceptably low levels.

2.2.3 Solid Radioactive Wastes

The concentration of radionuclides in the pool is controlled by the filter and the demineralizer and by decay of short-lived isotopes. The activity is highest during refueling operations while reactor coolant water is introduced into the pool, and decreases as the pool water is processed through the filter and demineralizer. The increase of radioactivity, if any, should be minor because of the capability of the cleanup system to remove radioactivity to acceptable levels.

The licensee does not expect any significant increase in the amount of solid waste generated from the spent fuel pool cleanup systems due to the proposed modification. While we generally agree with the licensee's conclusion, as a conservative estimate we have assumed that the amount of solid radwaste may be increased by an additional two resin beds (60 cubic feet) a year due to the increased operation of the spent fuel pool cleanup system. The annual average volume of solid waste shipped from H. B. Robinson during 1973 through 1980 was 21,000 cubic feet. If the storage of additional spent fuel does increase the amount of solid waste from the SFP cleanup systems by about 60 cubic feet of dewatered spent resin (or approximately 120 cubic feet of solidified spent resin) per year, the increase in total waste volume shipped would be less than 1% and would have no significant additional environmental impact.

The present spent fuel racks to be removed from the SFP because of the proposed modification are contaminated and the licensee states that the old racks will be disposed of as low level solid waste after cleaning of surface contamination by spray washing and/or by hydrolasing. We estimated that approximately 3,800 cubic feet of solid radwaste (old racks) will be removed from the plant because of the proposed modification, assuming the old racks will be disposed of without reducing the volume by appropriate cutting and/or crushing prior to shipment. Averaged over the lifetime of the plant, this would increase the total waste volume shipped from the facility by less than 1%. This will have no significant additional environmental impact.

2.2.4 Radioactivity Released to Receiving Waters

There should not be a significant increase in the liquid release of radionuclides from the plant as a result of the proposed modification. Since the SFP cooling and cleanup system operates as a closed system, only water originating from cleanup of SFP floors and resin sluice water need be considered as potential sources of radioactivity.

It is expected that neither the quantity nor activity of the floor cleanup water will change as a result of this modification. The SFP demineralizer resin removes soluble radioactive matter from the SFP water. These resins are periodically flushed with water to the spent

resin storage tank. The amount of radioactivity on the SFP demineralizer resin might increase slightly due to the additional spent fuel in the pool, but the soluble radioactivity should be retained on the resins. If any activity is transferred from the spent resin to the flush water, it will be removed by the liquid radwaste system since the sluice water is returned to the liquid radwaste system for processing. After processing in the liquid radwaste system, the amount of radioactivity released to the environment as a result of the proposed modification would be negligible.