

ENVIRONMENTAL IMPACT APPRAISAL

related to

SPENT FUEL STORAGE

of

OCONEE SPENT FUEL

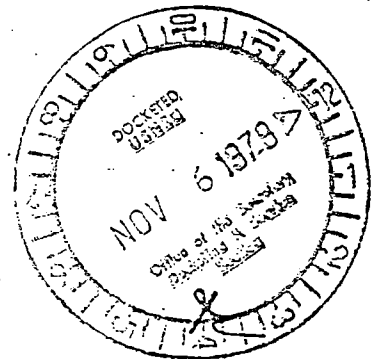
at

McGUIRE NUCLEAR STATION - UNIT 1

SPENT FUEL POOL

DUKE POWER COMPANY

Docket No. 70-2623



Published: December 1978

U.S. NUCLEAR REGULATORY COMMISSION

DIVISION OF FUEL CYCLE AND MATERIAL SAFETY

WASHINGTON, D.C.

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EXHIBIT "A"

Reracking of existing spent fuel pools at Oconee to accommodate more fuel was considered early in the operation phase of the station. The spent fuel pool serving Unit 3 was reracked in 1975, thereby adding to the storage capacity. It was thought at the time that this expanded storage capacity would be adequate. However, the reprocessing problems discussed in Section 9.1 have required the applicant to store more fuel for an indefinite period of time, causing an imminent shortage of storage space.

Reracking of the spent fuel pool serving Oconee Units 1 and 2 would alleviate the shortage of storage space for an interim period of time. The estimated time delay in completing the reracking of this pool is 15 months. This time delay involves lead time to design, contract, fabricate and install the new racks. In addition to reracking the basin, the pool cooling system would need to be expanded. Presently the pool has two cooling trains with cooling capacities of 1.5×10^4 MJ/hr (1.42×10^7 Btu/hr) each. An additional 6.4×10^3 MJ/hr (6.1×10^6 Btu/hr) of cooling capacity would be required to meet maximum load requirements, if the pool were to be reracked. Maximum load is based on a storage capacity of 350 assemblies, with the pool full including a full core of fuel cooled seven days.

The applicant has estimated that the cost of reracking of the spent fuel pool serving Unit 1 and 2 will be \$5,000 per fuel assembly and the radiation dose to the work force to be 150 man-rem.

The time required to rerack the basins, 15 months, is greater than the time remaining before the shortage of spent fuel storage space at Oconee impacts on production of electricity. As a result of the time required to perform this modification, transshipment of fuel assemblies to McGuire is not precluded. At the predicted rate of discharge, it would still be necessary to transship approximately 250 assemblies to allow for the needed working space one year from now. A combination of reracking plus the transshipment of 250 assemblies would be necessary. Therefore, while the alternative of reracking the spent fuel pool serving Units 1 and 2 is a viable option, the time delays involved may impact on power generation or result in greater impacts than the proposed transshipment, e.g., 150 man-rem occupational exposure from reracking plus additional exposure from transshipping approximately 250 fuel assemblies.