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AUTH.NAME AUTHOR AFFILIATION
PARKER,W.O. Duke Power Co.
RECIP.NAME RECIPIENT AFFILIATION
DENTON,H.R. Office of Nuclear Reactor Regulation, Director
REID,R.W. Operating Reactors Branch 4

SUBJECT: Forwards description of spent fuel rack surveillance program, supplementing info provided in util 800701 & 25 ltrs. Discussions w/NRC indicated that info was needed to complete NRC review.

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WILLIAM O. PARKER, JR.
VICE PRESIDENT
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October 15, 1980

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. R. W. Reid, Chief
Operating Reactors Branch No. 4

Subject: Oconee Nuclear Station
Docket Nos. 50-269, -270

Dear Sir:

Discussions with your Staff concerning the proposed reracking of the spent fuel pool shared by Oconee Units 1 and 2 have indicated that supplemental information is needed in order for the Staff to complete their review of the proposal. Specifically, a materials surveillance program was not addressed by the proposal although indicated by one of the references. Therefore, please find attached a description of the spent fuel rack surveillance program for Oconee Units 1 and 2, which supplements the information provided by my letters of July 1 and July 25, 1980. The licensing fees associated with this proposal were provided previously with my July 1, 1980 letter.

Very truly yours,

William O. Parker, Jr. by

William O. Parker, Jr.

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Attachment

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DUKE POWER COMPANY
OCONEE UNITS 1 AND 2

SPENT FUEL RACK SURVEILLANCE PROGRAM

The following paragraphs provide a general description of the surveillance program Duke Power Company plans to implement with respect to the spent fuel racks being proposed for the spent fuel pool shared by Oconee Units 1 and 2. The purpose of this surveillance program is to assure the mechanical integrity and neutron absorption capability of the Boraflex neutron poison material used in the racks. The program described below is based on current performance information on the Boraflex material. However, in the coming years, the nuclear industry will gain more information on the performance of Boraflex through both experimentation and operating experience. Duke will evaluate this information as it becomes available and will modify the surveillance program as determined warranted and justified.

Proper documentation will be obtained from the manufacturers of the Boraflex and the racks to assure the quality of the neutron poison material and its proper loading in the racks. Duke will perform a visual inspection of the racks upon receipt to verify that the Boraflex is loaded in each of the specified locations in the rack.

A representative sampling of Boraflex specimens will be selected from the lots of material used in the fabrication of the racks. Although the exact number of specimens which will be used is still being evaluated by Duke, it is expected that a minimum of 25 specimens will be used. Each specimen will be placed in a stainless steel holder and immersed in the spent fuel pool such that it is located adjacent to a loaded fuel storage cell. The specimens will be located within the spent fuel pool such that they will receive exposure to a representative gamma flux.

Irradiation tests have been previously performed to test the stability of Boraflex in boric acid solution and under irradiation. The results of these tests are documented in Bisco test reports which were referenced in Duke's July 1980 Poison Rerack Licensing Submittal. From these tests, no evidence has been determined that indicates that any deterioration of Boraflex through a cumulative irradiation in an excess of 1 x 10" rads gamma occurs to effect the suitability of Boraflex as a neutron shielding material. Duke has calculated that the specimens would require at least 10 years in the pool environment to approach this level of cumulative exposure.

Duke plans to perform an initial surveillance of the specimens after approximately five years of exposure in the pool environment. During this surveillance, several specimens will be removed from the pool and checked for mechanical integrity as well as absorption capability. This examination is expected to include visual inspection as well as other tests determined necessary to verify the material stability. This initial surveillance will be used to verify that the performance of the Boraflex is consistent with the Bisco test results. Based on the results of this initial surveillance, Duke will determine the scheduling and extent of additional surveillances so as to assure acceptable material performance throughout the life of the plant.