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U.S. NUCLEAR REGULATORY COMMISSION

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DOCKET NUMBER: 50-270

FILE NUMBER:

TO: Mr. Edson G. Case

FROM: Duke Power Company
William O. Parker, Jr.
Charlotte, North Carolina

DATE OF DOCUMENT: 7/27/77

DATE RECEIVED: 8/1/77

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DESCRIPTION: Re their LIR 5-6-77 & 6-21-77
Consists of information regarding Mark CR assemblies.....

ENCLOSURE

ACKNOWLEDGED (1-P)

DO NOT REMOVE

PLANT NAME: Oconee Unit No. 2

RJL 8/2/77

SAFETY		ENVIRONMENTAL
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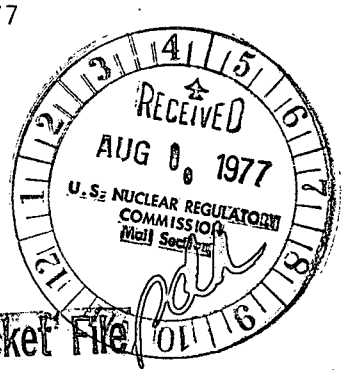
NRC FORM 195 (2-76)

DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

July 27, 1977

TELEPHONE: AREA 704
373-4083



Mr. Edson G. Case, Acting Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

RE: Oconee Unit 2
Docket No. 50-270

Dear Sir:

My letters dated May 6, 1977 and June 21, 1977 requested amendments to the Oconee Nuclear Station Technical Specifications to provide for the operation of the Oconee 2, Cycle 3 core within applicable fuel design and performance criteria. The report BAW-1452 "Oconee Unit 2, Cycle 3 Reload Report" was provided to support this amendment. In the report, it is pointed out that two Mark CR assemblies were to be included in this reload. The following information is provided concerning these assemblies.

The Mark CR demonstration fuel assemblies differ structurally from the Mark C demonstration assemblies described in BAW-1424 only in the reconstitutable lower end fitting. The reconstitutable feature is provided by positioning the lower end fitting to the lower grid by flange sleeves on the guide tubes rather than by welding the lower grid to the lower end fitting. Also, the lower end fitting is fastened to the guide tubes by torque nuts as in the Mark C demonstration assemblies; however, the nuts are prevented from rotating by swaged locking cups rather than by welding. The cups are brazed on a retainer plate that is restrained flush against the lower end fitting by a guide tube nut. The retainer plate cup brazement captures all 24 nuts by means of deformed metal tangs, so all nuts have to be untorqued before the brazement, including nuts, can be removed.

The Mark CR design has been subjected to a 300 hour test at simulated reactor full power conditions with no deterioration or wear of any of the parts of the retainer system (brazement nuts, lower end fittings, flange sleeves). Cold water tests were performed and the Mark CR design was found to have the same resonant frequency and amplitude as the Mark C design. Bench tests have been performed on the retainer system to assure the locking cups are securely brazed to the nut plate and the swaged cups will prevent loosening of the nuts which are captured within the nut plate brazement. The Mark CR demonstration assemblies have been designed to maintain their structural integrity through three cycles of operation and to successfully withstand seismic and loss-of-coolant loads.

Very truly yours,

William O. Parker, Jr.

William O. Parker, Jr.
MST:ge