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U.S. NUCLEAR REGULATORY COMMISSION

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TO:	FROM:	DATE OF DOCUMENT
Mr. Norman C. Moseley	Duke Power Company Charlotte, North Carolina William O. Parker, Jr.	5/4/77
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DESCRIPTION

Ltr. advising of certain problems identified & corrective actions contemplated with regard to the nuclear instrument calibration policy and is provided as RO-269/77-14.....

ACKNOWLEDGED

PLANT NAME: (2-P)

Oconee Unit No. 1

RJL

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ENCLOSURE

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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

TELEPHONE: AREA 704
373-4083

May 4, 1977

Mr. Norman C. Moseley, Director
U. S. Nuclear Regulatory Commission
Suite 818
230 Peachtree Street, Northwest
Atlanta, Georgia 30303

Re: Oconee Unit
Docket No. 50-269

Dear Mr. Moseley:

The purpose of this letter is to advise of certain problems identified and corrective actions contemplated with regard to the nuclear instrument calibration policy at Oconee Nuclear Station and is provided as RO-269/77-14.

During the end-of-Cycle 1 operation of Oconee 1, in late 1974, the power range nuclear instrumentation channels (NI's) required frequent calibration as a result of daily power changes between 60 and 90 percent full power. Duke Power Company requested B&W to evaluate the possibility of reducing surveillance frequency of comparison between the NI indications and heat balance power. By letter of August 19, 1976, B&W advised Duke Power Company that it would be appropriate to institute a more frequent calibration check of the NI's. Upon receipt of this recommendation, Duke Power Company reviewed the performance of the NI's for all three Oconee units. On October 14, 1976, Oconee operating procedures were revised to require NI calibration checks, and recalibration if necessary, following power changes greater than 10%FP. The technical specification on the frequency of the NI calibration checks and allowable tolerance on the calibration were deemed adequate at that time.

On March 25, 1977, B&W informed Duke Power Company that additional requirements should be placed on the NI calibration policy. Duke Power Company representatives met with B&W representatives on April 5, 1977 to discuss a possible course of action. Following the Duke-B&W meeting, a detailed review consisting of comparisons of NI indications and heat balance power was performed to quantify the extent of mismatch between the NI's and indicated heat balance power. As a result of this review, at least one instance was identified in which a significant mismatch had occurred between the NI power and the indicated heat balance power.

The subject incident, identified on April 20, 1977, occurred on Oconee 1 on October 27, 1976 while the unit was being brought to power operation after a maintenance shutdown. The hourly plant system data logged by

the plant computer showed that the indicated NI power values were less than the indicated heat balance by varying degrees, as much as 13.6%, when reactor operation was between 50%FP and 90%FP for a period of approximately four hours. The plant computer data also indicated that the NI power values were conservative or in agreement with the indicated heat balance power at power levels below 50%FP and at power levels above 90%FP. Although the indicated heat balance power is not sufficiently accurate during period of power change, the power changes during the period in question were gradual, and therefore, the indicated mismatch between the NI power and heat balance power occurred as a result of the NI's going out of calibration.

The operation of the unit with the NI's out of calibration possibly resulted in operation of the unit with the measurement tolerance of the NI detectors being greater than the measurement tolerance for these detectors assumed in the safety analyses and in the Technical Specification bases of the RPS setpoints for a period of approximately four hours. Since the reactor was being operated only between 50%FP and 90%FP (and not close to rated power) when the NI channels were out of calibration and considering that there are significant conservatisms built into the design analysis, it is considered that this incident did not affect the health and safety of the public.

The current Oconee Nuclear Station Technical Specification requires that a calibration check be performed on the NI's once per day and that a calibration be performed if the check indicates the NI power to defer from the steady state heat balance power by $\pm$ 2% FP. A request to change the Technical Specification on the frequency of the calibration check from once per day to once per shift and to require recalibration only if the NI power indication is less than the steady state heat balance power by more than 2%FP is in preparation. (The existing requirement necessitates recalibration of the NI's even when the NI calibrations are conservative). Subsequent to issuance of this technical specification change, the station operating procedures (for all three units) will be revised to require NI calibration checks and recalibrations, if necessary, following significant changes in core conditions which affect the NI flux. It is expected that the proposed Technical Specification change supplemented by the aforementioned procedural change would minimize the possibility of any undesirable NI calibration conditions.

Very truly yours,

William O. Parker Jr. /PBZ

William O. Parker, Jr.

PMA:ge