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FILE NUMBER
INCIDENT REPORT

TO: N.C. MOSELEY

FROM: DUKE POWER CO.
CHARLOTTE, N.C.
W.O. PARKER, JR.

DATE OF DOCUMENT
9-15-76

DATE RECEIVED
9-30-76

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DESCRIPTION
LTR. TRANS THE FOLLOWING.....

PLANT NAME: OCONEE # 1

ENCLOSURE
REPORTABLE OCCURRENCE # 76-14, ON 9-1-76,
CONCERNING THE MINIMUM REACTIVITY SHUTDOWN MAR-
GIN EXCEEDING DURING RECOVERY FROM THE UNIT
TRIP.....

(1 SIGNED CY. RECEIVED)
(2 PAGES)

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ACKNOWLEDGED**

NOTE: IF PERSONNEL EXPOSURE IS INVOLVED
SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION

SAB 10-4-76

<input checked="" type="checkbox"/> BRANCH CHIEF:	SCHWENCER		
W/3 CYS FOR ACTION			
<input checked="" type="checkbox"/> LIC. ASST.:	SHEPARD		
W/ CYS			
<input checked="" type="checkbox"/> ACRS 16 CYS HOLDING /SENT TO IA			

INTERNAL DISTRIBUTION

<input checked="" type="checkbox"/> REG FILE					
<input checked="" type="checkbox"/> NRC PDR					
<input checked="" type="checkbox"/> I & E (2)					
<input checked="" type="checkbox"/> MIPC					
<input checked="" type="checkbox"/> SCHROEDER/IPPOLITO					
<input checked="" type="checkbox"/> HOUSTON					
<input checked="" type="checkbox"/> NOVAK/CHECK					
<input checked="" type="checkbox"/> GRIMES					
<input checked="" type="checkbox"/> CASE					
<input checked="" type="checkbox"/> BUTLER					
<input checked="" type="checkbox"/> HANAUER					
<input checked="" type="checkbox"/> TEDESCO/MACCARY					
<input checked="" type="checkbox"/> EISENHUT					
<input checked="" type="checkbox"/> BAER					
<input checked="" type="checkbox"/> SHAO					
<input checked="" type="checkbox"/> VOLLMER/BUNCH					
<input checked="" type="checkbox"/> KREGER/J. COLLINS					

EXTERNAL DISTRIBUTION

CONTROL NUMBER

<input checked="" type="checkbox"/> LPDR: WALHALLA, S.C.				
<input checked="" type="checkbox"/> PTC:				
<input checked="" type="checkbox"/> NSIC:				

9929

Regulatory

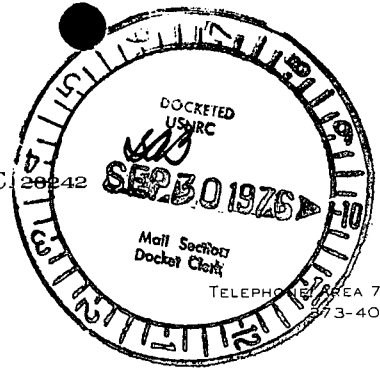
File 93

DUKE POWER COMPANY

POWER BUILDING

422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION



September 15, 1976

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

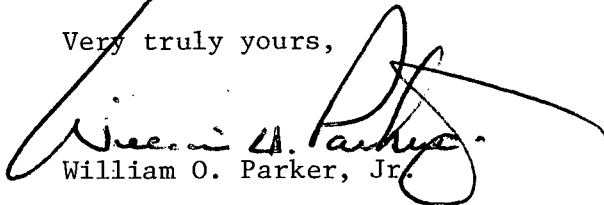


Re: Oconee Unit 1
Docket No. 50-269/76-14

Dear Mr. Moseley:

Pursuant to Sections 6.2 and 6.6.2 of the Oconee Nuclear Station
Technical Specifications, please find attached Reportable Occurrence
Report RO-269/76-14.

Very truly yours,


William O. Parker, Jr.

EDB:vr
Attachment

cc: Director, Office of Management Information
and Program Control

9929

DUKE POWER COMPANY
OCONEE UNIT 3

Report No.: RO-269/76-14

Report Date: September 14, 1976

Occurrence Date: September 1, 1976

Facility: Oconee Unit 1, Seneca, South Carolina

Identification of Occurrence: Minimum reactivity shutdown margin exceeded during recovery from unit trip

Conditions Prior to Occurrence: Unit at approximately 80 percent full power

Description of Occurrence:

On September 1, 1976, during startup of Oconee Unit 1 following a reactor trip, reactor power was increased to the power level cutoff limit of 90 percent full power. As indicated by Oconee Technical Specification 3.5.2.5.d, the power level cutoff is the power level to which the reactor is restricted during startup until the xenon concentration is within 10 percent of the equilibrium value at steady-state rated power and is asymptotically approaching the value for operation at the power level cutoff.

Within five minutes after the 20 percent full power limit was reached, a rod index alarm was received indicating that control rods had been inserted into the core to within 10 percent of the limiting position. (A graph of control rod position index versus reactor power level as shown in Figure 3.5.2-1A1 of the Oconee Technical Specifications, establishes these limits.) The control rods had been automatically inserted by the Integrated Control System to overcome the positive reactivity effects resulting from rapid xenon burnup. In order to remain within allowable rod index limits, reactor power level was reduced and concentrated boric acid was added to the Reactor Coolant System to attempt to prevent further control rod insertion. However, within 27 minutes following the initial rod index alarm, the control rods were inserted beyond the Technical Specification limits. After further reduction of reactor power and addition of boric acid, the control rods were restored to allowable insertion limits within one hour. At this time, the unit was operating at 57 percent full power.

Apparent Cause of Occurrence:

This incident was caused by the failure of the personnel involved to accurately evaluate the rapid burnup of xenon as a result of the return to power following the reactor trip and maintain sufficient quantities of boric acid in the Reactor Coolant System to compensate for the burnup.

Analysis of Occurrence:

Oconee Technical Specification 3.5.2.1 requires that the available reactivity shutdown margin be at least 1% $\Delta k/k$ with the highest worth control rod fully withdrawn. Operation within the control rod withdrawal limits indicated in Figure 3.5.2-1A1 of the Technical Specifications assures that this margin is maintained at the most restrictive time in the cycle. In this incident, the control rod withdrawal limits were exceeded for approximately one hour; however, a calculation of available shutdown margin has determined that the requirements of Specification 3.5.2.1 had been met since an available shutdown margin of 2% $\Delta k/k$ existed at this time in core life. Since the required 1% $\Delta k/k$ shutdown margin was available at all times, it is concluded that the health and safety of the public was not affected by this occurrence.

Corrective Action:

Operating personnel have been re-instructed of the necessity to make a thorough evaluation of xenon reactivity prior to a return to power following a unit trip or transient. It is felt that this action will prevent recurrence of this incident.

U.S.A.E.C.
REGULATORY OPERATIONS
REGION II
ATLANTA, GA.

SEP 20 10 58 AM '76