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50-269

FILE NUMBER  
INCIDENT REPORT

TO: N.C. MOSEBEY

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

DATE OF DOCUMENT  
3/10/77

DATE RECEIVED  
3/24/77

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PLANT NAME: OCONEE # 1  
  
SAB  
  
**ACKNOWLEDGED**

ENCLOSURE  
REPORTABLE OCCURRENCE REPORT # 77-9, ON 2/28/77  
CONCERNING TWO-PUMP COASTDOWN FLOW ASSUMED IN  
THE CORE THERMAL HYDRAULIC DESIGN ANALYSIS FOUND  
TO BE SLIGHTLY NON-CONSERVATIVE...  
  
(2P)  
  
NOTE: IF PERSONNEL EXPOSURE IS INVOLVED  
SEND DIRECTLY TO KREGER/J. COLLINS

FOR ACTION/INFORMATION

BRANCH CHIEF:	<i>Schwencer</i>
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LIC. ASST.:	<i>Sheppard</i>
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ACRS 16 CYS HOLDING/SENT	<i>AS CAT B</i>

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TFDR: <i>Waltham, SC</i>			
TIC:			
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CONTROL NUMBER

770870116  
~~770870116~~

DUKE POWER COMPANY

POWER BUILDING

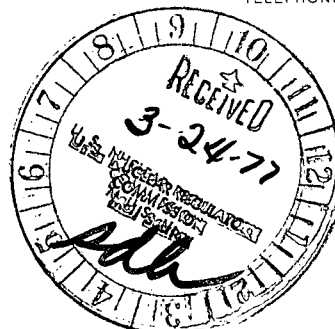
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.  
VICE PRESIDENT  
STEAM PRODUCTION

March 10, 1977

TELEPHONE: AREA 704  
373-4083

**REGULATORY DOCKET FILE COPY**



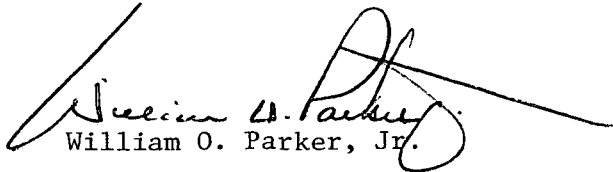
Mr. Norman C. Moseley, Director  
U. S. Nuclear Regulatory Commission  
Suite 818  
230 Peachtree Street, Northwest  
Atlanta, Georgia 30303

Re: Oconee Unit 1  
Docket No. 50-269

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-269/77-9.

Very truly yours,

  
William O. Parker, Jr.

MST:ge  
Attachment

cc: Director, Office of Management Information  
and Program Control

770870116

DUKE POWER COMPANY  
OCONEE UNIT 1

Report No.: RO-269/77-9

Report Date: March 10, 1977

Occurrence Date: February 28, 1977

Facility: Oconee Unit 1, Seneca, South Carolina

Identification of Occurrence: Two-pump coastdown flow assumed in the core thermal hydraulic design analysis found to be slightly non-conservative

Description of Occurrence:

On February 28, 1977, while the core design analysis and the associated technical specification changes for Cycle 4 operation of Oconee 1 were being reviewed, the NSSS vendor (B&W) informed Duke Power Company of a change in the core thermal hydraulic design analysis. The change pertains to using the measured 2-pump coastdown flow instead of the design coastdown flow previously utilized in the design analysis because of the discovery that the design coastdown flow was slightly non-conservative (as compared to the measured coastdown flow) for certain times during the 2-pump coastdown.

Analysis of Occurrence:

The 2-pump flow coastdown values are used to establish the flux/flow trip setpoint, which is designed to ensure that the minimum DNBR in the event of a loss-of-2-pump incident will not be less than 1.3. The flux/flow trip setpoints for Oconee 1, Cycles 1, 2 and 3; Oconee 2, Cycles 1 and 2; and Oconee 3, Cycles 1 and 2 were established on the basis of the design coastdown flow. The measured coastdown flow has now been determined to be slightly less than the design coastdown flow (maximum difference of 3%), and this difference could possibly impact upon the flux/flow ratio. However, a review of the flux/flow trip setpoints of the current cycles and the previous fuel cycles for all three Oconee units revealed that these flux/flow trip setpoints were indeed safe and adequate. In the case of Cycle 1 of Units 1, 2 and 3, the thermal hydraulic analyses were based on 100% design RC flow and included conservative allowances for vent valve flow penalty and densification power spike penalty. Considering that the measured RC flow values were 108.6% for Unit 1, 111.5% for Unit 2, and 110% for Unit 3 and that the vent valve flow penalty and densification spike penalty are no longer necessary, a significant degree of margin is seen in the Cycle 1 flux/flow trip setpoints even when the difference between the measured and the design coastdown flows is considered. For Cycles 2 and 3 of Unit 1 and Cycle 2 of Units 2 and 3, design analyses were based on 107.6% of design RC flow and included conservative allowances for the densification power spike penalty and/or vent valve flow penalty, and it has been determined that the difference in the two flow coastdown values did not lead to non-conservative flux/flow trip setpoints for these cycles. The current flux/flow trip setpoints still provide DNBR margins of approximately 5.5% for Unit 1, 3.0% for Unit 2, and

3.0% for Unit 3. Thus, the slightly non-conservative nature of the coast-down flow used in the previous thermal hydraulic analyses did not in any way result in an unsafe operation of any Oconee unit, and it has been concluded that this incident did not affect the health and safety of the public.

Corrective Action:

A review of the core safety related technical specifications has been performed to verify that the existing technical specification limits continue to be valid with sufficient safety margins. The core thermal hydraulic design analysis procedure has been modified to utilize the conservative coastdown flow.

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