



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30323

Report Nos.: 50-269/93-04, 50-270/93-04, and 50-287/93-04

Licensee: Duke Power Company  
422 South Church Street  
Charlotte, NC 28242

Docket Nos.: 50-269, 50-270, and 50-287

License Nos.: DPR-38, DPR-47,  
and DPR-55

Facility Name: Oconee 1, 2, and 3

Inspection Conducted: January 28 to February 2, 1993

Inspector: *P. T. Burnett*  
P. T. Burnett, Reactor Engineer

*3/4/93*  
Date Signed

Approved by: *R. V. Crlenjak*  
R. V. Crlenjak, Chief  
Operational Programs Section  
Operations Branch  
Division of Reactor Safety

*3/4/93*  
Date Signed

SUMMARY

Scope: This routine, announced inspection was conducted in the area of witnessing and review of startup tests performed for Unit 1, cycle 15.

Results: Initial criticality for Unit 1, cycle 15, was achieved in a well-controlled and conservative manner. Precritical and zero power tests were performed in accordance with approved procedures.

In each of control rod groups 1 and 2, there was one slow control rod which required repetitive drops before meeting the limiting condition for operation. The licensee is considering monitoring those rods throughout the cycle to obtain additional drop time measurement in the event of a reactor trip.

Reactor engineering personnel have made effective use of preplanned computer spreadsheets to aid in data reduction and analysis.

No violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*H. B. Barron, Station Manager
- C. C. Coutu, Unit 1 Operations Manager
- \*D. B. Coyle, Systems Engineering Manager
- \*J. M. Davis, Safety Assurance Manager
- \*N. E. Edwards, Operations Manager
- \*T. P. Gillespie, Nuclear Performance Engineer
- J. W. Hampton, Vice President, Oconee Site
- O. O. Kohler, Shift Supervisor
- \*G. A. Lareau, Reactor Engineering Supervisor
- R. R. Lingle, Shift Manager
- J. B. Morgan, Assistant Engineer, Component Engineering
- \*M. E. Patrick, Regulatory Compliance Manager
- \*B. L. Peele, Engineering Manager
- \*S. S. Perry, Regulatory Compliance
- T. E. Sanders, Reactor Engineer

Other licensee employees contacted included engineers, technicians, operators, and office personnel.

#### NRC Resident Inspectors

- \*P. E. Harmon, Senior Resident Inspector
- W. K. Poertner, Resident Inspector
- B. B. Desai, Resident Inspector

\*Attended the exit interview on February 2, 1993.

### 2. Unit 1, Cycle 15 Startup Tests (72700, 61705, 61708, 61710)

Portions of the startup test activities for Unit 1, cycle 15, were witnessed in the control room as they were performed. All test records were reviewed shortly after completion and prior to final review by licensee management. The cooperation of licensee personnel in providing access to test activities and to procedures as they were completed was excellent.

The following documents and procedures were reviewed by the inspector in the course of the inspection:

- a. Oconee 1 Cycle 15 Physics Test Manual.
- b. IP/0/A/0330/003A, Control Rod Drop Time Test.
- c. PT/0/A/0711/01, Zero Power Physics Tests.
- d. OP/1/A/1102/01 (Enclosure 4.3), Unit Startup from Hot Shutdown.

## e. PT/0/A/0811/01, Power Escalation Test.

The initial attempts to measure control rod drop time were made below operating temperature and pressure with all four RCPs operating. One slow control rod was identified in each of groups 1 and 2. Temperature and pressure were increased to operating conditions before drop time testing resumed. The same two control rods were again too slow and had to be dropped six to seven times each before consistent, acceptable drop times were recorded. All other control rods satisfied the limit on the first drop. No explanation for the slow drop times was offered by licensee personnel. The licensee is considering continuous monitoring of the two rods so that drop time could be measured during any scram that might occur during the cycle.

The approach to criticality was delayed several hours to resolve differences between procedures listed in items 2c and 2d. These differences could have been resolved prior to entering into the procedures had the licensee elected to perform a cross disciplinary review. The inspector could not find administrative guidance on when a cross disciplinary review is necessary. In the absence of a plant committee review of procedures, a cross disciplinary review is essential to assure well integrated procedures.

The tests observed by the inspector were performed by the licensee with hurried care. Although the test personnel appeared to be under pressure to complete the test rapidly, the inspector did not note any problems caused by the pressure and necessary attention to detail was observed. Overall, the test methods were acceptable and all test acceptance criteria were satisfied. Data reduction and analysis of test results were enhanced by the use of preplanned and carefully constructed spreadsheets.

## 3. Exit Interview

The inspection scope and results were summarized on February 2, 1992, with those persons indicated in paragraph 1. The inspector described the areas inspected and discussed in detail the inspection results. Although reviewed during this inspection, proprietary information is not contained in this report. Dissenting comments were not received from the licensee.

## 4. Acronyms and Initialisms

IP instrument procedure  
OP operating procedure  
PT periodic test  
RCP reactor coolant pump