UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-269/79-38, 50-270/79-35 and 50-287/79-38

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

Facility: Oconee

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

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

Inspection at Oconee site near Seneca, South Carolina

Inspector: P. T. Burnett — Date Signed: 1-8-80

Approved by: C. M. Upright, Acting Section Chief, RONS Branch — Date Signed: 1/8/80

SUMMARY

Inspection on December 5-7, 1979

Areas Inspected

This routine, unannounced inspection involved 22 inspector-hours on site. The areas inspected were refueling activities in unit 1, routine operations of unit 2 and post-refueling power escalation tests of unit 3.

Results

No items of noncompliance or deviations were identified in the three areas inspected.

DETAILS

1. Persons Contacted

   Licensee Employees

   *J. E. Smith, Station Manager
   *H. R. Lowery, Operating Engineer
   *R. J. Brackett, Senior QA Engineer
   *R. T. Bond, Licensing and Projects Engineer
   *T. Owens, Superintendent of Technical Services
   T. S. Barr, Performance Engineer
   T. D. Curtis, Reactor Engineer
   N. F. Edwards, Assistant Operating Engineer
   J. Forbes, Junior Engineer

   Other licensee employees contacted during this inspection included two assistant shift supervisors, three refueling SROs, six reactor operators, three nuclear equipment operators and two technical support persons.

   NRC Resident Inspector

   *F. Jape

   *Attended exit interview

2. Exit Interview

   The inspection scope and findings were summarized on December 7, 1979 with those persons indicated in Paragraph 1 above. The inspection findings were clear. The licensee had no comment on the scope of the inspection.

3. Licensee Action on Previous Inspection Findings

   Not inspected.

4. Unresolved Items

   No unresolved items were identified.

5. Unit 1 - Refueling Operations

   a. Activities Observed.

      The inspector observed fuel-handling activities in the spent-fuel-pool area, and witnessed the successful operation of all the fueling equipment in that area. Setups were being made for the post-irradiation examination (PIE) program, and five assemblies are to be examined later in the outage. None of them are to be re-irradiated on this cycle.

The inspector inspected refueling activities within the reactor building on two different occasions. During these inspections he witnessed the successful operation of all fuel handling equipment within containment. He also witnessed several changes of the two-man refueling crews, since their assigned duty time in the containment building was limited to two hour stretches.

In observing the fuel handling operations within the reactor vessel, the inspector noticed on two occasions that the operators had difficulty either inserting or removing fuel assemblies, apparently from interference of the intermediate grids between or among assemblies. He observed these operations closely, and saw no evidence of slack cables or excessive force being used.

b. The Refueling Organization.

The SRO for refueling who has no concurrent duties was established in a partitioned area near but not in the control room. With him was a licensed operator in communication with the refueling equipment operators in the spent fuel pool and reactor building. The operator also maintained the board displaying the location of fuel bundles in the core, in the fuel handling equipment and in the spent fuel pool. A strip chart recorder, providing continuous display of both source range of nuclear instruments, and recycling scalers for each channel were visible to both. (A source range nuclear instrument channel was also continuously displayed in the control room where it could be viewed by the licensed reactor operator assigned to that station.)

Two operators, usually unlicensed nuclear equipment operators, were assigned to the equipment in the spent fuel pool. The reactor building bridges were manned by a licensed reactor operator and an unlicensed nuclear equipment operator. Usually, the nuclear equipment operator operated the bridge controls under the observation of the reactor operator who also acted as the spotter. (The nuclear equipment operators so assigned are in a formal training program leading to licensing.)

A refueling senior reactor operator stated that all refueling bridge operators had received hands-on training on the bridges, had been tested on their knowledge and that operation of refueling equipment is covered in the operator requalification program. The inspector noted that the superintendent of operations had issued a list of the names of qualified refueling equipment operators.

In addition to the normal equipment provided for voice communication between the refueling control center and fuel handling bridges, the licensee has provided electronic terminals to display alpha-numeric information at these locations. These displays can show the equivalent of only a few words at a time. Words such as insert or withdraw and alpha-numeric core position and fuel identification numbers can be displayed simultaneously. The only identification on the terminal was

the word and symbols TERMIFLEX HT/4. Use of these terminals to convey position and identification information avoided confusion between letters that sound alike in spoken communication such as m and n.

c. Procedures and Documents Reviewed.

The inspector reviewed operating procedure OP/O/A/15/01, "Preparation for Refueling". The record provided by this procedure confirms that all refueling equipment was properly functional prior to the start of fuel handling. Operating procedure OP/O/A/1502/07, "Refueling Procedure", was reviewed and found to address specific requirements of technicial specification section 3.8, which are applicable to fuel loading and refueling operations. The review confirmed that the refueling staff described above met requirements of the procedure. Enclosures to the procedure logged and recorded proper valve alignments, acceptable boron concentrations and proper performance of source range nuclear instruments. Review of parameters on display in the Unit 1 control room confirmed that in-vessel flow rates and temperatures were as specified by the procedure. Enclosure 4.2 to this procedure specifies the step-by-step sequence of fuel movements to be followed during the refueling evolutions and provides for recording the date and time and verifier's signature for completion of the steps. The procedure proper provides the protocol to be followed to deviate from the specified sequence if a fuel assembly should prove difficult to remove. The inspector reviewed data sheets for two such events and found that they met requirements of the procedure and adequately defined the location of all fuel at all times.

The refueling operations log was reviewed and found to adequately document the refueling activities that had taken place.

6. Unit 2 Operations.

Unit 2 shares the control room with unit 1, and was visited several times in the course of this inspection. During this time unit 2 was at or near 100% power with a primary system boron concentration of approximately 128 parts per million with group 7 nearly 80 percent withdrawn. The unit 2 operators were aware of the cause and significance of lighted alarm panels on the console, and at no time appeared to be distracted by unit 1 operations.

7. Unit 3 Power Escalation Tests

The inspector reviewed procedure TT/3/A/811/5, "Unit 3 Cycle 5 Power Escalation Test". The review was limited to confirming that all required tests had been documented as being complete and data had been collected and analyzed by the plant staff.

8. Requalification Training

The inspector took the requalification program in plant security and health physics necessary to keep his identification badge authorizing access to the plant radiation control and vital areas.