

April 8, 2002

MEMORANDUM TO: John A. Nakoski, Chief, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

FROM: Leonard N. Olshan, Project Manager, Section 1 /RA/
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

SUBJECT: TELEPHONE CONVERSATION WITH DUKE ENERGY REGARDING
THE INSPECTION OF THE REACTOR VESSEL HEAD AT OCONEE
NUCLEAR STATION, UNIT 1 (TAC NO. MB4559)

On March 26, 2002, the Nuclear Regulatory Commission (NRC) staff and the staff of Duke Energy (the licensee) held a telephone conference call to discuss the reactor vessel head inspection being conducted at Oconee Nuclear Station, Unit 1 (Oconee 1). Oconee 1 is classified as a high-susceptibility plant using the guidance of EPRI MRP-44, Part 2, and NRC Inspection Manual TI 2515/145, Appendix A. Oconee 1 shut down on March 23, 2002, for a scheduled refueling outage.

At the time of the call, the licensee had already completed a 100-percent bare-metal inspection of the top of the head. This qualified inspection (as discussed in NRC Bulletin 2001-01) was done with the head on the vessel. The inspection identified evidence of boric acid deposits around two nozzles. The licensee indicated that the most likely sources of these deposits were from leaks coming from above the vessel head rather than from cracks in the nozzles. Nonetheless, the licensee is planning additional ultrasonic inspection of these two nozzles and will make all necessary repairs prior to restart.

The last inspection of the Oconee 1 reactor vessel head was conducted in November 2000. There were some small localized areas of boric acid deposits identified during this inspection which were left on the top of the head. The 100-percent bare-metal inspection performed at this time identified one leaking control rod drive mechanism nozzle and five leaking thermocouple nozzles. All the nozzles were repaired by grinding out the defects. There were no signs of degradation of the reactor vessel head base material during the repairs of these nozzles (i.e., in the region near the J-groove weld where the entire thickness of the nozzle was removed by grinding). During the 2002 inspection, all of the nozzles repaired during the November 2000 outage were reexamined. There were no signs of wastage near these nozzles (based on visual examination on the top surface of the head) nor were there signs of leakage from these nozzles.

The 2002 nozzle inspections will be performed using a Framatome Aramis tool. The examinations will start at the bottom of the nozzle and end about two inches above the J-groove weld. The NRC staff asked the licensee to consider performing an ultrasonic examination

through the entire thickness of the head for the two nozzles with evidence of boric acid deposits and for the nozzles previously repaired with through-wall/through-weld defects. The NRC stated that it might be possible that a cavity could be present within the thickness of the head that might not be detected unless the entire thickness of the head is inspected (this assumes that the cavity initiates from within the reactor vessel head rather than on the surface).

The licensee is planning to replace the reactor vessel head during the next outage, which is planned for the fall of 2003. Startup from the current outage is scheduled for April 23, 2002.

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