DUKE POWER COMPANY
POWER BUILDING
422 SOUTH CHURCH STREET, CHARLOTTE, N. C. 28242

WILLIAM O. PARKER, JR.
VICE PRESIDENT
STEAM PRODUCTION

TELEPHONE: AREA 704
373-4083

October 2, 1979

Mr. James P. O'Reilly, Director
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Re: Oconee Unit 1
Docket No. 50-269

Dear Mr. O'Reilly:

Please find attached .ortable Occurrence Report RO-269/79-29. This report is being submitted pursuant to Oconee Nuclear Station Technical Specifications 6.2 and 6.6.2.1.b(2), which concerns shutdown required by a limiting condition for operation, and describes an incident which is considered to have no significance with respect to its effect on the health and safety of the public.

Very truly yours,

William O. Parker, Jr.

SRL:scs
Attachment

cc: Director, Office of Management Information
and Program Control
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

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DUKE POWER COMPANY
OCONEE UNIT 1

Report Number: RO-269/79-29

Report Date: October 2, 1979

Occurrence Date: September 2, 1979

Facility: Oconee Unit 1, Seneca, South Carolina

Identification of Occurrence: Reactor Vessel Head Flange Leak

Conditions Prior to Occurrence: Hot Shutdown

Description of Occurrence:

On September 2, 1979, during an inspection of the Oconee 1 Reactor Building while the unit was in hot shutdown in anticipation of returning to power operation, water was observed to be draining from around the insulation on the reactor vessel. The insulation was removed, and steam was found to be leaking from the reactor vessel head flange. Cooldown of the unit was initiated at 0830 on September 3. On September 8, 1979 the reactor vessel head was removed, and the head flange was inspected. The inspection revealed that incorrect O-rings were in use, and that they had been installed improperly. No damage to the reactor vessel was observed, but the improper installation of the O-ring clips resulted in some small impressions on the head flange. The impressions were honed and contoured, and proper O-rings were installed prior to resetting the reactor vessel head.

Apparent Cause of Occurrence:

The reactor vessel head flange leakage resulted from improper installation of the O-ring clips during the refueling outage in September of 1978. Thermal cycling of the unit caused the clips to cut into the sealing surface, allowing slight leakage. The clips were not installed in accordance with the O-ring replacement procedure. Adding to confusion in the installation was the fact that incorrect O-rings were provided by the supplier. This error resulted from the inability of the supplier to obtain the correct reference drawing for the O-rings. The drawing obtained illustrated O-rings which required sixteen clips, while those normally used at Oconee require only twelve clips.

Analysis of Occurrence:

Although slight impressions in the reactor vessel head flange resulted from improper installation of the O-ring clips, this was corrected, and no other damage was observed. The leakage was very slight, and was discovered at an early stage. If the leakage had not been discovered prior to startup of the unit, it would have been detected by the normal leakage monitoring methods before a serious degradation of the reactor coolant system boundary resulted. The leakage resulted in shutdown of the unit in accordance with Oconee Nuclear Station Technical Specification 3.1.6.2. The incident therefore resulted in conditions leading to a shutdown required by a limiting condition for operation, and must be reported pursuant to Technical Specification 6.6.2.1.b(2), although it did not affect safe operation of the unit or the health and safety of the public.

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Corrective Action:

Correct O-rings were installed using the proper procedure, eliminating the source of the reactor vessel head leakage. The remaining incorrect O-rings in stock were destroyed to assure that no attempt would be made to install them in the future. In addition, the installation procedure has been revised to state explicitly the type of O-rings to be used and the correct method for installing them. The procedures have been reviewed with the responsible personnel to assure complete understanding. These steps should preclude the possibility of a recurrence of such an incident.