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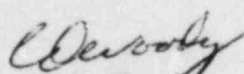
Dr. J. Nelson Grace
Regional Administrator, Region II
U.S. Nuclear Regulatory Commission
Suite 2900
101 Marietta Street, N.W.
Atlanta, Georgia 30323

Dear Dr. Grace:

Re: St. Lucie Unit 1
Docket No. 50-335
Special Report on Replacement of Fuel Pins with Clad Perforations

As requested by NRC, the attached Voluntary Special Report is being submitted.

Very truly yours,


C. O. Woody
Group Vice President
Nuclear Energy

COW/SAV:dh

Attachment

cc: Document Control Desk, USNRC, Washington, D.C.
Harold F. Reis, Esquire.
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SPECIAL REPORT

Replacement of fuel pins with clad perforations

DESCRIPTION OF EVENT:

Due to higher than expected I-131 activity levels from the beginning of cycle 6, it was believed that there were between 10 and 18 leaking fuel rods. At the end of the cycle 6, during the normally scheduled refueling outage, all reload fuel assemblies were removed and tested to find which assemblies had leaking rods. This sipping or ultrasonic testing gave a gross indication of which assemblies had leaking fuel rods. Leaking fuel rods were localized by ultrasonic testing. Those fuel rods that were found to be leaking were removed from the assemblies and replaced with dummy rods, using standard reconstitution procedures. Reconstitution was completed on November 27, 1985. Fifteen (15) fuel rods were replaced with dummy fuel rods.

The leaking fuel rods did not prevent the completion of cycle 6. The activity in the reactor coolant was higher than experienced in the previous cycle and was the activity expected for 15 leaking fuel rods. The number of leaking fuel rods was estimated from reactor coolant activity analysis, and was confirmed by the sipping and ultrasonic testing done.

The dummy pins in each reconstituted assembly were distributed such that no more than four replacement pins were inserted in any one assembly. These replacement pins were distributed in a manner to minimize local power peaking. Based on these restrictions and safety, mechanical, and fuel management considerations, the replacement pins and reconstituted fuel assemblies will have no adverse effect on the behavior of the cycle 7 core. The reconstituted fuel assemblies do not invalidate any design or safety analysis reported in the St. Lucie Unit 1 cycle 7 Safety Analysis Report.

CORRECTIVE ACTIONS:

All fuel assemblies to be reused were tested for leaking fuel rods. Leaking fuel rods that were found were removed from the fuel assemblies and replaced with dummy rods. While all of the fuel assemblies were removed from the reactor vessel, additional underwater camera surveillances and vacuuming were performed on the core support plate and in the reactor vessel. The small amount of foreign material visually observed during these inspections was removed. Also, camera inspections of the lower end fittings of the reload fuel were performed with no foreign material found. To date, no mechanism has been identified in different batches of fuel from both Combustion Engineering and Exxon Nuclear Corporation. Both vendors are still investigating to determine a failure mode and cause.