SOUTH CAROLINA ELECTRIC & GAS COMPANY
POST OFFICE BOX 764
COLUMBIA, SOUTH CAROLINA 29218

E. H. CREWS, JR.
VICE-PRESIDENT AND GROUP EXECUTIVE
ENGINEERING AND CONSTRUCTION

50-395

March 27, 1980

3 APR 1 PM 1:20

Mr. James P. O'Reilly
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, N. W.
Suite 3100
Atlanta, GA 30303

Subject: Virgil C. Summer Nuclear Station, Unit 1
Reportable Substantial Safety Hazard
Control Rod Guide Tube Support Pin Cracking
Nuclear Engineering File: 3.1051

Dear Mr. O'Reilly:

On March 14, 1980, Mr. Jack Skolds of NRC Region II was notified orally of a reportable substantial safety hazard.

On March 13, 1980, Westinghouse notified South Carolina Electric and Gas Company of a potential stress corrosion cracking problem of the control rod guide tube support pins supplied by Westinghouse for the V. C. Summer plant.

If a control rod guide tube support pin broke during operation, it could prevent proper control rod operation and cause a substantial safety hazard defined by 10CFR21. Under the South Carolina Electric and Gas Company program, we are reporting this as a significant deficiency under 10CFR50.55(e). Detailed information is presented in Attachment 1.

Westinghouse plans to perform an ultrasonic inspection of the support pins in two or more operating domestic plants. Since corrective action will be based upon the results of the support pin inspection program and a Westinghouse on-going materials test program, this is an interim report on this item. A final report will be issued when the results of these test programs are available. If any questions arise, please let us know.

Very truly yours,

E. H. Crews, Jr.

B019
SE
1/1

BSM:rm

Enclosure

OFFICIAL COPY

S

8004170 004

CC: Division of Inspection and Enforcement
Washington, DC

Messrs: V. C. Summer
H. T. Babb
M. B. Whitaker, Jr.
O. S. Bradham
D. R. Moore
H. Radin
A. A. Smith
J. Skolds
R. L. Whitney (W)
NPCF/Dixon
File

ATTACHMENT 1

10CFR21 - SUBSTANTIAL SAFETY HAZARD

1. Name and Address of Reporting Individual

B. S. Mullinax
South Carolina Electric and Gas Company
P. O. Box 764
Columbia, SC 29218

2. Identification of Basic Component

Control Rod Guide Tube Support Pin as supplied by
Westinghouse Electric Corporation

3. Identification of Firm Supplying Component

Westinghouse Electric Corporation
PWR Systems Division
P. O. Box 355
Pittsburgh, PA 15230

4. Nature of Defect, Substantial Safety Hazard Created, and Evaluation

In the most recent support pin inspection at a foreign plant, stress corrosion cracking was observed in Westinghouse supplied support pin. If a support pin broke in operation, it could prevent proper control rod operation.

Laboratory testing, conducted as part of the investigation into the support pin cracking problem, indicates that susceptibility to stress corrosion cracking decreases with increasing solution heat treatment temperature. These tests have established that the Westinghouse current manufacturing process, which utilizes a solution heat treatment at 2000°F, results in support pins which are highly resistant to stress corrosion cracking. The support pins which Westinghouse supplied for the V. C. Summer Nuclear Station, Unit 1, were pins having solution heat treatment at temperatures less than 1800°F.

The potential impact on Upper Head Injection (UHI) plants and non-UHI plants has been evaluated by Westinghouse. Since the V. C. Summer Nuclear Station is a non-UHI plant, control rod operation is not jeopardized by a broken pin due to the small gap clearance between the non-UHI guide tube and the core plate. This was previously reported in Westinghouse letter NS-TMA-2099.

In the unlikely event that a pin leaf should be broken off, the broken leaf could represent a loose part, which can have some small potential for interfering with control rod movement. However, due to the configuration of the internals, this is highly unlikely to occur. It should be noted that no broken leaves have ever been found in on-site inspections.

5. Date Information of Defect Was Obtained

March 13, 1980

6. Number and Location of Defect

There are ninety-six (96) support pins, two (2) per guide tube, in the V. C. Summer Nuclear Station. The support pins are bolted into the bottom plate of the lower guide tube to align the bottom of the control rod guide tube into the core plate at the top of the fuel assembly.

7. Corrective Action

No action will be taken pending the results of a proposed Westinghouse support pin inspection program. In the near future, Westinghouse plans to conduct ultrasonic inspection of guide tube support pins at two or more operating domestic plants. Further actions will be determined based on the results of this inspection program as well as the on-going Westinghouse materials test program.

8. Advice to Purchasers or Licensees

None