



William J. Cahill, Jr.  
Chief Nuclear Officer

September 13, 1995  
JPN-95-043

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

Subject: James A. FitzPatrick Nuclear Power Plant  
Docket No. 50-333  
**FitzPatrick Core Shroud Repair**  
**Inservice Inspection and XM-19 Material Testing Programs**

- References:
1. NRC letter, N. F. Conicella to W. J. Cahill, Jr., NYPA, "Request for Additional Information - Review of Proposed Repair of FitzPatrick Core Shroud (TAC M90964)," dated December 5, 1994.
  2. NYPA letter, W. J. Cahill, Jr. to NRC (JPN-94-066), "FitzPatrick Core Shroud Repair Design Report Response to Request for Additional Information," dated December 13, 1994.
  3. NYPA letter, W. J. Cahill, Jr. to NRC (JPN-95-006), "FitzPatrick Core Shroud Repair," dated February 16, 1995.

Dear Sir:

This letter transmits an augmented inservice inspection (ISI) program for the core shroud repair/tie rod assemblies and a material testing program for hot rolled XM-19 in a simulated BWR environment. This information was requested by the NRC in Reference 1. The Authority committed to submit this information to the NRC within six months of startup from the refuel 11/cycle 12 refueling outage (Reference 2).

The augmented inspection program for the shroud repair is submitted in Attachment 1. The Authority stated (Reference 3) that a proposed hot rolled XM-19 material test program and a schedule for implementation would be provided. This information is provided in Attachment 2. The Authority will initiate the XM-19 material testing program after written NRC acceptance of the proposed testing program. The proposed augmented ISI program will start during the refuel 12/cycle 13 refueling outage.

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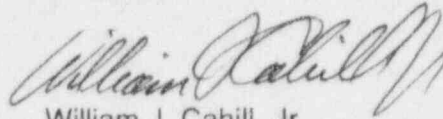
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The Authority's commitments associated with this submittal are summarized in Attachment 3.

If you have any questions, please contact Mr. A. Zaremba.

Very truly yours,



William J. Cahill, Jr.  
Chief Nuclear Officer

Attachments: As stated

cc: Regional Administrator  
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## ATTACHMENT 1 TO JPN-95-043

### James A. FitzPatrick Nuclear Power Plant Augmented Inservice Inspection (ISI) Plan Core Shroud and Tie Rod Assemblies

#### Purpose

By letter dated December 5, 1994, the NRC requested that the Authority submit an inspection program for the 10 core shroud tie rod assemblies placed in service during the Refuel 11/Cycle 12 refueling outage. The augmented inspections and frequency for the inspections are described below.

#### Stabilizer Assemblies (Tie Rods and Seismic Bumpers)

1. Verify the bolt tightness on all stabilizer assemblies during the Refuel 12/Cycle 13 refueling outage. Verify the bolt tightness on two different tie rods each subsequent refueling outage. Bolt tightness is verified by applying a tie rod pre-load and verifying the upper nut does not lift.
2. Perform a VT-3 examination of two different tie rod assemblies each refueling outage. The two selected tie rod assemblies should be approximately 180° apart. The examination shall include all accessible areas, with emphasis on the following:
  - Hook engagement and keeper
  - Bumper orientation and gaps
  - Top bracket attachment to the rod and shroud top flange
  - Crimp on top bracket nut

#### Gusset Plate and Weld

Perform an enhanced VT-1 examination of the gusset to support plate attachment welds and associated core support plate to reactor vessel weld (2 inch minimum either side of the selected gusset) on two different gusset plates during each regularly scheduled refueling outage.

#### Shroud Vertical and Ring Segment Welds

Perform an enhanced VT-1 examination on a different vertical weld and an enhanced VT-1 on a different top guide ring segment weld from the shroud outside diameter each regularly scheduled refueling outage.

#### Schedule

The initial examinations described above will be performed during the refuel 12/cycle 13 refueling outage.

## ATTACHMENT 2 TO JPN-95-043

### James A. FitzPatrick Nuclear Power Plant Hot Rolled XM-19 Material Test Program

#### Purpose

By letter dated December 5, 1994, the NRC requested that the Authority submit a material testing program for hot rolled XM-19 used in the FitzPatrick core shroud enhancement. The purpose of this test program is to demonstrate the resistance to intergranular stress corrosion cracking (IGSCC) of hot rolled XM-19 materials. Testing would simulate a BWR environment under a crevice condition, such as in a threaded configuration.

#### Test Program

Testing will be accomplished using cylindrical CERT type specimens containing a threaded section cut to the same type geometry as that used in the core shroud tie rods. A crevice geometry will be established around the threaded sections to simulate the conditions existing at the tie rod ends. Materials will be archive specimens from the same heats of material used in the core shroud tie rods installed at the FitzPatrick (New York Power Authority) and Oyster Creek (GPU Nuclear) Nuclear Power Plants.

The test medium will be simulated BWR reactor coolant at approximately 550°F and about 8 ppm oxygen. Contaminant levels will be controlled to maintain conductivity less than 0.75 microsiemens/cm, with a goal of 0.5 microsiemens/cm.

Test acceleration will be accomplished by subjecting the specimens to slow strain rate (approximately  $5 \times 10^{-7} \text{ sec}^{-1}$ ) testing until failure. Prior to straining, specimens will be preconditioned for approximately seven days in the elevated temperature test environment.

There are two different heats of hot rolled XM-19 material, each from NYPA and GPUN. From these heats, specimens will be tested in the BWR coolant environment, and in air as a control. In addition, one specimen of sensitized 304SS will be tested in the test environments as a control to assure adequacy of the test environment to produce IGSCC.

Following the test, specimens will be examined using conventional light microscopy and scanning electron microscopy. The specimens will be examined for indications of stress corrosion cracking on the fracture surface and along the gauge section. A minimum of two metallographic mounts will be evaluated for each specimen.

#### Schedule

The Authority plans to initiate this testing program after written NRC acceptance of this proposed testing program. Results of the test will be forwarded to the NRC when complete.

ATTACHMENT 3 to JPN-95-043

Summary of Commitments

Number	Commitment	Due Date
JPN-95-043-01	Initiate augmented inservice inspection (ISI) plan for the core shroud tie rod assemblies.	Refuel 12/Cycle 13 refueling outage
JPN-95-043-02	Initiate hot rolled XM-19 material test program and forward results to the NRC.	After receipt of written NRC acceptance