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October 22, 1984
JPN-84-70

Director of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Attention: Mr. Domenic B. Vassallo, Chief
Operating Reactors Branch No. 2
Division of Licensing

Subject: James A. FitzPatrick Nuclear Power Plant
Docket No. 50-333
Proposed Change to the Technical Specifications
Regarding Main Steam Line High Radiation Monitor
Trip Level Setpoint.

Reference: 1. NYPA letter, J.P. Bayne to D.B. Vassallo (NRC), dated October 2, 1984 (JPN-84-62) regarding same subject.

Dear Sir:

In Reference 1, the Authority submitted a proposed change to the FitzPatrick Technical Specifications regarding the Main Steam Line High Radiation Trip Level Setpoint for the hydrogen addition test.

In a conference call on October 16, 1984 between the NRC staff and the Authority personnel, the staff requested additional information. This additional information is enclosed as an Attachment to this letter.

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If you have any questions, please contact Mr. J.A. Gray, Jr. of my staff.

Very truly yours,

J.P. Bayne
First Executive Vice President
Chief Operations Officer

enc.

cc: Office of the Resident Inspector
U.S. Nuclear Regulatory Commission
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ATTACHMENT TO JPN-84-70

Proposed change to James A. FitzPatrick Technical Specifications for the Main Steam Line Radiation Monitor Setpoint

The Authority and the NRC staff members held a telephone conversation on October 16, 1984. The proposed change to the FitzPatrick Technical Specifications for the Main Steam Line Radiation Monitor Setpoint was discussed. In response to NRC staff requests, the following additional information is provided.

A. Test Schedule/Purpose

1. Pre-Implementation Test - Current plans are to perform a 2-3 day pre-implementation test in late November 1984 to develop information on:

   a. Hydrogen and oxygen concentration relationships in the primary coolant
   b. Changes (if any) to plant chemistry and electrochemical potential of the primary coolant through on-line monitoring
   c. Off-gas system performance
   d. Steam line, in-plant and site boundary radiation surveys and shielding requirements to support a permanent program
   e. Adequacy of injection points
   f. Performance of the hydrogen addition system for controlling oxygen levels in the primary coolant
   g. Adequacy of sampling equipment and procedures
   h. Feasibility of a permanent hydrogen addition system

   The pre-implementation test involves injecting hydrogen in the feedwater from 0 to approximately 60 SCFM in pre-defined increments, with a stoichiometric amount of oxygen added upstream of the recombiner to aid in proper off-gas recombination. During this stage various chemical and operating parameters (O_2, H_2, ECP) are monitored to define the IGSCC free (immune) regime for JAF.

2. Constant Extension Rate Test (CERT)/Materials Verification - The CERT will be performed from early to mid-December 1984 for 14 days, bringing the total test duration to 17 days. The CERT will be conducted to:

   a. Insure that the immune regime has been attained by a materials confirmation of a CERT test with highly sensitized 304 SS.
   b. Attain steady state readings for electrochemical potential which, along with reactor coolant oxygen and conductivity, are the key indicators for the above regime.

This portion of the test involves operating the plant at steady state power and full hydrogen injection (as defined by the pre-implementation test) for 350 operating hours, as recommended by GE and EPRI.

Note: The test schedule is highly dependent upon timely review and approval of the technical specification change.

B. Design

All of the test equipment is designed and operated by General Electric and is proprietary. This includes the hydrogen and oxygen injection/flow control, chemical monitoring, ECP and the test autoclave for the CERT. The equipment will be located in areas of the plant consistent with the ALARA program.

C. Radiological/ALARA Considerations

A preliminary engineering evaluation on the use of hydrogen water chemistry (H_2 WC) at JAF was conducted in May 1984. One of the areas addressed was the impact of H_2 WC on in-plant and site boundary radiation levels. Some of the areas expected to have significant increases in radiation levels are the south side of the turbine floor, heater bays, steam tunnel, condenser bay and turbine building roof. Based on the test results from Dresden 2 (Reference: GE Report NEDC-23856-7, October 1982) which is the only plant currently using H_2 WC, the radiation level throughout the Steam System is expected to increase approximately by a factor of 6. In addition to normal radiation and ALARA practices/procedures utilized during the test, an ALARA review will be conducted in conjunction with the study mentioned above. Controlled access and administrative controls will be used to limit exposure during the test. While recognizing that in-plant and site boundary doses will invariably increase with increasing hydrogen flow, no significant safety hazards are expected.

A complete set of in-plant surveys will be taken at various hydrogen flow rates (i.e., radiation levels) in addition to normal survey points. Additionally, area radiation monitors will be logged at specific increments of hydrogen addition. Site boundary surveys will be conducted with Reuter Stokes high pressure ionization chambers which are appropriate for measuring N16 gamma. Gamma isotopic surveys will be conducted in the environment during the CERT test by an outside contractor. Surveys will be compared with normal operating data before/after the test.

D. Significant Hazards Considerations

The capability to monitor for fuel failures will be maintained via (1) main steam line radiation monitors which will still be functional for isolation and Reactor Protection System (RPS) signals, (2) increased frequency of radiation surveying, (3) daily primary reactor coolant isotopic analysis, (4) continued operability of the SJAE off-gas radiation monitor (it should be noted that items 1 and 4 are required by Technical Specifications).

During the entire test, the expected gas consumptions are 700,000 SCF H_2 and 350,000 SCF O_2. Two standard size (115,000 cu ft.) tube trailers will be used for hydrogen (with no more than two on site at one time), connected by a dual manifold and electrically grounded. The oxygen will be supplied cryogenically (liquid) with an approximate 3000 gallon tank. Administrative controls will be enforced to ensure access to these areas are controlled. The total quantities of hydrogen and oxygen on-site at any one time, will remain the same for the proposed 17 day test as they would be for a 3 day test. Furthermore, hydrogen and oxygen supplies will be located in areas consistent with fire protection requirements.