

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

Region I

Report No. 78-22

Docket No. 50-333

License No. DPR-59 Priority -- Category C

Licensee: Fower Authority of the State of New York

10 Columbus Circle

New York, New York 10019

Facility Name: James A. Fitzpatrick Nuclear Power Plant

Inspection at: Scriba, New York

Inspection conducted: October 4-6, 1978

Inspectors: J. C. Higgins
J. C. Higgins, Reactor Inspector

10/26/78
date signed

T. H. Smith
T. H. Smith, Reactor Inspector

10/26/78
date signed

H. J. Wong
H. J. Wong, Engineer/Intern

10/25/78
date signed

Approved by: D. L. Capton
for D. L. Capton, Chief, Nuclear Support
Section No. 1, RO & NS Branch.

10/25/78
date signed

Inspection Summary:

Inspection on October 4-6, 1978 (Report No. 50-333/78-22)

Areas Inspected: Routine, unannounced inspection by regional based inspectors of the Containment Integrated Leak Test Procedure, local leak rate testing, licensee action on previous inspection findings, review of selected plant modifications, follow-up on selected IE Bulletins and Circulars, review of the MSIV Leakage Control System and review of the inservice test program for pumps and valves. The inspection involved 56 inspector-hours on site by three NRC regional based inspectors.

Results: No items of noncompliance were identified.

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DETAILS

1. Persons Contacted

- E. Abbott, Operating Superintendent
- *R. Baker, Maintenance Superintendent
- *V. Childs, Assistant to Resident Manager
- W. Fernandez, Assistant Maintenance Superintendent
- *J. Ford, I&C Superintendent
- *J. Leonard, Resident Manager
- S. Lew, Plant Engineer
- *R. Pasternack, Superintendent of Power

The inspector also talked with and interviewed several other members of the technical and operating staffs, reactor operators, health physics personnel, and training personnel.

*denotes those present at the exit interview.

2. Licensee Action on Previous Inspection Findings

(Open) Unresolved Item (333/77-32-04): The licensee is currently performing local leak rate testing and stated that the intent of the program is to ensure that total Type B&C leakage is less than 0.60 La, even with a conservative ratio used for MSIV leakage. The pertinent procedures have not been modified to require this and the licensee's representative further stated that additional review may indicate that such a ratio conversion may not be required.

(Open) Unresolved Item (333/77-32-07): The licensee has not yet revised the SCFD acceptance criterion for 0.60 La in his procedure. The inspector reviewed the licensee's calculations on site and noted that a non-conservatively large volume appeared to have been used. This item will receive further review.

(Closed) Unresolved Item (333/77-24-01): The licensee submitted an update to LER 77-41 on Local Leak Rate Test Failures to the NRC on March 1, 1978. For related comments see paragraph 5.d. This item is closed.

(Closed) Unresolved Item (333/77-22-06): The inspector reviewed the sample chosen for functional testing of snubbers during the current outage to determine if it was representative and rotated. The sample chosen was determined by the plant's cognizant engineer. The inspector had no further questions in this area.

(Closed) Noncompliance (333/77-32-05): The inspector reviewed the results of the special test conducted to determine leakage through main steam isolation valve 29 AOV 86A. This test was performed on February 26, 1978, using maintenance procedure T-9. The leak rate was measured as 138.7 SCFD. Combined with the previous seat leakage measured, the total leakage was 193.6 SCFD which is less than the acceptance criterion of 276 SCFD (11.5 SCFH). The inspector also discussed with licensee's representatives the need to ensure that leak rate measurements are made on containment isolation valves before repairs are effected. The licensee acknowledged these comments and stated that attention would be given to this item during local leak rate testing programs. This noncompliance is considered closed.

(Closed) Unresolved Item (333/77-32-06): The inspector reviewed Operations Department Standing Order, Procedure No. 5, "Valve/ Electrical Lineup Checkoff," Revision 0, dated July 7, 1978. This procedure lockwires shut the test, vent and drain connections and ensures that pipe ends are capped prior to plant startup.

(Closed) Unresolved Item (333/77-32-08): The licensee has purchased Volumetrics Leak Rate Monitors and is currently using these for local leak rate testing. The inspector observed their use and reviewed their operating procedures and calibration data. The inspector further noted that all calibrations were traceable to the National Bureau of Standards.

(Closed) Unresolved Item (333/77-32-10): The inspector reviewed the drywell to suppression chamber leak test (ST-39E) completed this outage. The inspector also noted that Torus water level and Torus temperature were recorded and he evaluated the test as having the required sensitivity to measure a leak rate on the order of the technical specification limit.

(Closed) Unresolved Item (333/77-32-11): The licensee stated that a review had been conducted to verify that containment isolation valves were properly vented during Type C tests. The inspector reviewed Revision 4 to the Type C test procedure (ST-39B) and noted on a sampling basis that each penetration tested had specific venting and draining requirements.

3. Containment Integrated Leak Rate Test (CILRT)

a. Procedure

The inspector reviewed Procedure F-ST-39F, "Type A Test (60 PSIA) Primary Containment Integrated Leak Rate Test," dated

September 9, 1978, for technical adequacy and conformance to regulatory requirements. The below listed items 2.a.(1) through 2.a.(9) are collectively designated at Item No. 333/78-22-01.

(1) Containment Inspection

The current procedure has no specific guidance or data sheet sign-offs regarding areas of the containment required to be inspected to satisfy the requirements of Section V.A. of Appendix J to 10 CFR 50.

(2) Drywell Pressure Switches

The procedure currently isolates the drywell pressure switches from the containment atmosphere. This closes a potential leakage path which would possibly exist under post-accident conditions. Electrical isolation of the pressure switches would accomplish the same function and would allow the pressure switches to remain exposed to the containment atmosphere for the CILRT.

(3) Leak Repair

The procedure currently does not contain sufficient guidance for actions in the event leakage is found during the CILRT. Section III.A.1.(a) of Appendix J provides guidance. Additionally, the NRC staff has established the position that a leakage path identified during the CILRT may be isolated and the CILRT continued provided that: the leakage path is locally leak rate tested before and after repair; the pre-repair leak rate is added to the CILRT results to determine the success/failure of the initial CILRT attempt; and the post repair leak rate is added to the CILRT results to determine the final containment acceptability prior to plant startup.

(4) Test Pressure

The procedure currently does not verify that test pressure is greater than 45 psig at the start of the test.

(5) Volume Changes

The procedure contains no provision for conservatively adjusting leakage rates for sump level increases which could change the containment free volume and thus mask CILRT leakage.

(6) Absolute Values

The current procedure has no provisions for calculating leakage rates using absolute values corrected for instrument error as required by Section III.A.3.c of Appendix J.

(7) Minimum Instrumentation

There is no guidance in the current procedure on the minimum instrumentation required to complete the CILRT, if some instrumentation fails during the test.

(8) Data Rejection

During analysis of the CILRT data it is permissible to reject outlying data points provided a definitive rejection criteria has been specified. In the current procedure, no such criteria is specified.

(9) Additions to CILRT Results

Appendix J, section III.A.1.(d) requires that systems exposed to the post-accident atmosphere be drained of water and vented during the CILRT. Certain systems in this category (e.g. Feedwater, Cleanup and RBCLCW) are required to be in operation or still flooded for safe plant operation during the CILRT. This is permissible, provided the isolation valves in these lines are Type C tested and the results added to the Type A test results prior to comparison with the acceptance criteria. The procedure currently has no provision for Type C additions for systems in operation or not properly vented and drained.

4. Plant Modifications

The inspector reviewed two plant modification packages, FI-77-12 and FI-77-70. There were no questions on modification FI-77-70.

Plant modification FI-77-12, "Reactor Building/Torus/Drywell dp," replaced instrumentation as well as several system valves. Manual isolation valves LRA 11, 12, 18, and 19 were replaced by air-operated valves 16-1 AOV 102A and B, and 16-1 AOV 101A and B respectively. These replacement air-operated valves receive a containment isolation signal. Technical Specification (TS) surveillance tests on these power-operated containment isolation valves were not performed. Additionally TS Table 3.7-1 was not modified to include these valves.

The inspector also noted that procedures F-ST-39B, F-ST-1C, 1F, and 1H, which were affected by this modification, were not updated as specified in Work Activity Control Procedure 10.1.6 "Control of Modifications." This item is unresolved (333/78-22-02) pending correction of TS Table 3.7-1 and pending further NRC review of this issue.

5. Local Leak Rate Testing (LLRT)

a. Equipment Hatches

The inspector reviewed procedures F-ST-39B, "Type B and C LLRT of Containment Penetrations," and F-ST-39A, "Leak Testing of Air Locks." Due to an apparent procedural revision, equipment hatches, penetrations X-1B and X-2B, were not included in either procedure. Actual testing of the two penetrations has been accomplished at the proper intervals. This is an unresolved item pending inclusion of the two penetrations into an appropriate procedure. (Item No. 333/78-22-03.)

b. Drywell Head Installation

The inspector reviewed IE Bulletin No. 78-09 "BWR Drywell Leakage Paths Associated with Inadequate Drywell Closures," and JAFP response letter 78-346. In essence, Bulletin 78-09 states that the procedure used to reinstall the drywell head must ensure it is reinstalled exactly the same as the installation immediately preceding the last successful CILRT. To ensure a reproducible reinstallation, a bolt tightening sequence should be specified. JAFP letter 78-346 states that their procedural controls are adequate to ensure the leak tightness of the drywell head closure. However, Maintenance Procedure 4.2, "Reassembly of Reactor Vessel After Refueling," which is the procedure used to install the drywell head, does not require a specific bolt tightening sequence. This is an unresolved item (333/78-22-04).

c. Test Witness

The inspector witnessed a Type C test on a Residual Heat Removal system penetration. The test was conducted with proper, calibrated test equipment in accordance with the approved procedure. The inspector had no further questions, regarding this test.

d. Reportability

In reviewing the 1977 licensee event report for Type B & C test failures (LER #77-41) the inspector noted that the licensee had not listed all valves which required repair due to excessive leakage, but rather stated that the data was available on site. The inspector stated that this information should be included in future LER's.

In discussing the current Type B & C test program with the licensee and in reviewing various records the inspector noted that a potential existed for repairing some containment isolation valves before definitive leak rates had been established. A determination of the leak rate should be made on each valve and, when one of two series valves fails, particular care should be given to measuring the leak rate of the second valve and to determining whether containment integrity existed or not. The licensee's representative acknowledged these comments.

6. Main Steam Leakage Collection System (MSLCS)

a. General

- Letters from PASNY to NRC (NRR) dated October 25, 1974, September 22, 1976, and July 25, 1977.
- Regulatory Guide 1-96, Revision 1, 1976, "Design of Main Steam Isolation Valve (MSIV) Leakage Control Systems for Boiling Water Reactor Nuclear Power Plants."
- OP-1, Revision 5, dated November 22, 1977, with temporary changes dated August 11, 1978, "Main Steam System."
- SP-1, Revision 0, dated October 5, 1973, "Loss of Coolant."
- SP-2, Revision 1, dated August 10, 1977, "Post LOCA Venting of Containment and Operation of Main Steam Leakage Collection System."
- LER-77-69, dated December 22, 1977.
- Preoperational Test Procedure, No. 29A, Revision 0, dated July 7, 1977, "Main Steam Leakage Collection System - CR-703."
- Surveillance Testing Procedures l.m, n, and p (draft).

The inspector reviewed the above documents relating to the design, operation, and testing of the MSLCS. The inspector reviewed the operation and testing of the MSLCS against applicable requirements and also verified on a sampling basis by actual observation of components that the system was built in accordance with design drawings. With the exception of the below items the inspector had no further questions in this area.

b. Actuation of the MSLCS

- (1) The MSLCS would not be required if the Main Steam System to the Main Condenser remained intact following the design basis Loss of Coolant Accident. Procedure SP-1 does not provide guidance to prevent the unnecessary actuation of the MSLCS.
- (2) Regulatory Guide 1-96, Section E.7 recommends the actuation of the MSLCS within approximately 20 minutes after an accident requiring the use of the system. Procedures SP-1 and SP-2 do not specify an actuation time. These items are unresolved pending revision of the procedures. (Item No. 333/78-22-07.)

c. Temporary Changes

Temporary changes to Procedure OP-1, Revision 5 were made to incorporate the MSLCS. In the review of the draft of Revision 6 to OP-1, the inspector noted that the temporary changes to Revision 5 had not been included as recommended by the "Administrative Procedures - Control of Plant Procedures" manual. This item is unresolved pending inclusion of the temporary changes into the procedure and is designated Item No. 333/78-22-08.

d. Approval and Operability

By the letter from PASNY to NRC dated October 25, 1974, the MSLCS was to be operational by the end of the first major refueling outage. The system was installed and tested during the 1977 refueling outage. A Technical Specification (TS) change was submitted on July 25, 1977, to define the operability and surveillance testing requirements of the MSLCS. This change has not yet been approved and this system, although fully installed, is not operable from a Technical Specification standpoint. The inspector also noted that during the 1977 refueling outages 9 of 14 MSIV's tested had leak rates in excess of the TS limit of 11.5 SCFH. This item is unresolved pending full implementation of the MSLCS, as committed, including issuance of the TS's. (Item No. 333/78-22-09.)

e. Seismic Design Criteria

The MSLCS, designed to Seismic Class I requirements, is attached to the Main Steam Line between the outboard MSIV's and the turbine stop valves. This portion of the Main Steam Line is shown to be non-seismic in the licensee's "Line Designation Table" dated March 1, 1974. This is unresolved pending review by the NRC of the seismic design requirements of the Main Steam Lines (Item No. 333/78-22-10).

7. Pipe and Component Supportsa. I&E Bulletin 78-10

The inspector reviewed on site the licensee's actions, relative to I&E Bulletin 78-10, "Bergen-Paterson Hydraulic Shock Suppressor Accumulator Spring Coils" and verified that his response was accurate. The actions taken were described in his response letter to Region I dated July 24, 1978. During the current visual snubber inspection program, a few snubbers of the old type were discovered and were removed. These will be replaced with new Bergen-Paterson snubbers. The inspector had no further questions on this Bulletin.

b. I&E Circular 78-07

The inspector reviewed on site the subject material covered in I&E Circular 78-07, "Damaged Components on a Bergen-Paterson Series 25000 Hydraulic Test Stand." The licensee contacted the vendor and discussed the problem identified in the circular. The licensee currently utilizes a Grinell snubber test stand and the snubber being tested is always pinned to the machine through a ball bushing, simulating the actual installed condition. Therefore, the damage described in the circular should not have the potential for occurring at FitzPatrick.

c. Snubber Piston Setting

Technical Specification 4.6.I.1 requires that hydraulic snubbers be ensured to be operable by a visual inspection. The NRC has determined that verification of proper snubber piston setting is an essential element of this inspection to assure operability and hence should be included in the appropriate procedures. The inspector reviewed Procedure No. 100.2 and noted that step 7.2, which contains the acceptance criteria, did not reference piston setting, although the setting was recorded on the data sheets. This item is unresolved pending inclusion of this item into the procedure (333/78-22-05).

8. Inservice Testing Program

The inspector discussed with the licensee's representatives plans for implementing the Inservice Test requirements for Pumps and Valves of Subsections IWP and IWV to Section XI of the ASME Boiler and Pressure Vessel Code. 10 CFR 50.55a(g) requires that this test program be implemented on November 28, 1978 for FitzPatrick. The licensee has submitted a proposed program to the NRC and has requested certain exemptions from the requirements of Section XI. Procedures for program implementations are currently being prepared by a contractor and were not available for review. Additionally, the licensee stated that there was considerable overlap between current Technical Specifications (TS's) and the new Section XI requirements. The inspector stated that, as of November 28, 1978, the licensee must comply with Section XI by having his test program in effect. Additionally, since his program as submitted to NRC, differs from Section XI, he must obtain relief from those requirements, which he cannot meet. In areas covered by both his current TS's and Section XI, he must comply with the most restrictive requirement. The licensee acknowledged these comments. This item is unresolved pending review of the licensee's implementing procedures (33/78-22-06).

9. Unresolved Items

Items about which more information is required to determine acceptability are considered unresolved. Paragraphs 3, 4, 5, 6, 7, and 8 of this report contain unresolved items.

10. Exit Interview

At the inspection's end the inspectors held a meeting (see Detail 1 for attendees) to discuss the inspection scope and findings. The unresolved items were identified.