123 Main Street
White Plains, New York 10601
914-681-6840
914-287-3309 (FAX)

NewYork Power Authority

William J. Cahill, Jr.
Chief Nuclear Officer

November 22, 1996
JPN-96-047

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

SUBJECT: **James A. FitzPatrick Nuclear Power Plant**
Docket No. 50-333
Submittal of Corrections to SERs Associated with
Technical Specification Amendments 232 and 233

Reference:

1. NRC letter, K. Cotton to W. J. Cahill, dated August 16, 1996, Issuance of Amendment 232 for James A. FitzPatrick Nuclear Power Plant (TAC Nos. M92631, M93725. M94084 and M94210)

2. NRC letter, K. Cotton to W. J. Cahill, dated October 2, 1996, Issuance of Amendment 233 for James A. FitzPatrick Nuclear Power Plant (TAC No. M94638)

Dear Sir:

During the implementation reviews of Amendments 232 and 233 to the James A. FitzPatrick Technical Specifications (References 1 and 2), five discrepancies in the text of the amendment Safety Evaluation Reports (SERs) were identified. Four of these discrepancies are minor deviations from the changes proposed by the Authority in the amendment requests and are believed to be typographical errors. The fifth discrepancy is the inclusion of information in the SER for Amendment 233 which is no longer applicable to the Technical Specifications as the referenced surveillance requirement was deleted by Amendment 231. These discrepancies are minor and do not alter the bases for either SER or their conclusions.

The specific discrepancies are described in detail on Attachments 1 and 2. Please review these discrepancies and provide corrected documentation.

If you have any questions, please feel free to contact Charlene Faison.

Very truly yours,

William J. Cahill, Jr.
Chief Nuclear Officer

Attachments as Stated
cc: see next page

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cc: Regional Administrator
U. S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Office of the Resident Inspector
U. S. Nuclear Regulatory Commission
P.O. Box 136
Lycoming, NY 13093

Ms. K. Cotton, Acting Project Manager
Project Directorate I-1
Division of Reactor Projects-I/II
U. S. Nuclear Regulatory Commission
Mail Stop 14 B2
Washington, DC 20555

Mr. F. William Valentino, President
New York State Energy, Research,
and Development Authority
2 Rockefeller Plaza
Albany, NY 12223-1253

Attachment 1 to JPN-96-047

Discrepancies in SER for FitzPatrick TS Amendment 232

There is an error on pages 10 and 11 of the Safety Evaluation regarding the frequency of station battery performance (or modified performance) testing for batteries which have reached 85% of their service life. These errors and their corrections are indicated on the attached marked-up pages.

recommendations of IEEE-450-1995. Based on the above, the use of the modified performance test is acceptable.

The proposed requirements for battery testing are consistent with those stipulated in IEEE Standard 450-1995. The performance or modified performance testing of TS 4.9.E.4, in conjunction with the other requirements in TS 4.9.E, provide a high level of confidence that the condition of the station batteries will be detected prior to degradation leading to battery inoperability.

Potential station battery and charger operability problems would be detected by the following combination of on-line tests and inspections:

(a) Every week the specific gravity, voltage and temperature of the pilot cell and overall battery voltage is measured.

(b) The 125V DC system is also subjected weekly to visual inspections and tests for cracked cells or electrolyte leakage, corrosion at either terminals or connectors, electrolyte level within the level markings on the jars, and the proper battery charger current and voltage output. A weekly battery charger visual inspection is also required by TS.

(c) A quarterly station battery surveillance test measures the voltage of each cell to the nearest 0.01V, the specific gravity of each cell, and the temperature of every fifth cell.

(d) "Accelerated performance testing (or modified performance test) shall be conducted on any battery:

a) Annually if capacity drops more than 10% from its previous performance test (or modified performance test).

b) Annually if capacity is below 90% of manufacturer's rating

c) Annually if it has reached 85% of its service life with capacity ≤100% of manufacturer's rating.

d) Once every 24 months if it has reached 85% of its service life with capacity ≥100% of the manufacturer's rating."

Thus, adequate on-line surveillance testing and maintenance programs are in place to ensure that the station batteries and their associated chargers are functioning properly. This extensive on-line testing program establishes the operability of the batteries while testing performed during each refueling outage demonstrates the battery's ability to meet the design requirements of the system.

The 125V DC station battery service and charger performance surveillance test required by current TSs 4.9.E.4 and 4.9.E.5 can be safely extended to accommodate a 24-month operating cycle because:

1) Service and performance testing of battery capability is consistent with the recommendations of IEEE 450-1995.

2) On-line testing provides adequate assurances that station battery and charger performance problems would be detected through the weekly, quarterly and annual surveillances, if certain conditions exist.

3) A review of previous discharge tests up through 1995 indicate that the acceptance criteria has always been satisfied for this test.

4) Computer trending of the specific gravity of the individual cells should indicate potential problems with the battery.

Based on the associated surveillance tests for current TSs 4.9.E.3 and 4.9.E.5 discussed above, the proposed TS surveillance test intervals can be safely extended to accommodate a 24 month operating cycle.

Technical Specification 4.9.E.4 requires a performance test of the batteries at 5-year (i.e., 60-month) intervals. The frequency of this surveillance test requirement will not be changed to accommodate the 24-month operating cycle. It is proposed that the TS be revised to state that the performance test shall verify the battery capacity is at least 80% of the manufacturers rating. This acceptance criterion is consistent with the recommendations of IEEE-450-1995. A capacity of <80% shows that the rate of battery degradation is increasing, even if there is ample capacity to meet the load requirement.

New TS 4.9.E.5 proposes accelerated performance testing requirements for any battery that shows signs of degradation or has reached 85% of its service life. Degradation is indicated when battery capacity drops by more than 10% relative to its capacity on the previous performance test (or modified performance test), or when its capacity is below 90% of the manufacturers rating. If the battery shows degradation, or if it has reached 85% of its expected life and capacity is <100% of the manufacturers rating, the surveillance frequency is reduced to 12 months. However, if the battery shows no degradation but has reached 85% of its expected life, the surveillance frequency is only reduced to 24 months for batteries that retain capacity ≥100% of the manufacturers rating. These performance testing requirements are consistent with those stipulated in IEEE standard 450-1995, and are acceptable.

2.2.3 LPCI Station Batteries

The surveillance associated with current TSs 4.9.F.3 and 4.9.F.5 is the LPCI Battery Duty Cycle and Charger-Inverter Performance Surveillance Test. This test demonstrates operability of the Low Pressure Coolant Injection (LPCI) independent power supply battery by performance of a duty cycle test.

In the same manner as discussed above for the station batteries, new commitments for modified performance testing and accelerated performance testing for LPCI station batteries are proposed in TSs 4.9.F.3, 4.9.F.4, and 4.9.F.5. Surveillance intervals are revised to 24 months for the LPCI battery service test in TS 4.9.F.3 and the battery charger performance test (current TS 4.9.F.5, renumbered to 4.9.F.6). In addition, TS 4.9.F.3 has been revised to specify that a modified performance test may be performed in lieu of the battery service test.

Attachment 2 to JPN-96-047

Discrepancies in SER for FitzPatrick TS Amendment 233

1. SER section 2.2.3.a. (page 4): Wrong acronym is used; "PCIC" should be "PCIS" (marked-up correction is attached).

2. SER section 2.2.3.c. (second instance of "c." in this section; page 10): This section addresses surveillance requirement *(SR) 4.11.B.2; Crescent Area Unit Cooler Temperature Control Instrumentation Calibrations.* Technical Specification sections *3.11.B; Crescent Area Ventilation* and *4.11.B; [SR for] Crescent Area Ventilation* were deleted with Technical Specification Amendment 231. This section of the SER should be deleted.

3. SER section 2.2.10 (page 12) has a grammatical error. The third sentence in this section reads:

   "The licensee analyzed the impact of the voltage drop from the EPAs to scram the pilot valve solenoids and other relays and concluded that the minimum voltage should be raised for the RPS scram pilot valve solenoids to ensure proper operation."

   This sentence should read (correction in bold):

   "The licensee analyzed the impact of the voltage drop from the EPAs to ***the*** *scram* ***[word deleted]*** *pilot valve solenoids and other relays and concluded that the minimum voltage should be raised for the RPS scram pilot valve solenoids to ensure proper operation."*

   A marked-up page indicating this correction is included for your reference.

4. This amendment changes the surveillance requirement for instrument line excess flow check valves from "At least once per operating cycle" to "Once per 24 months." This change is not discussed in the NRC SER.

were replaced with Rosemount Transmitters. Square root and summing components of the APRM flow bias loop were found out of procedural tolerance in the past due to a tight CT. New calibration tolerances have been calculated based on past performance and should bound future drift. The main steam isolation valves (MSIV) limit switches (Item 10) have experienced problems during plant operation primarily due to failure of the switches to reset, and slow resets during the periodic MSIV limit switch instrument functional test. The majority of the limit switch failures were related to a reset of the switches, rather than instrument drift. The failure to reset problem has been addressed by installation of modified actuating levers during the Reload 11/Cycle 12 Refueling Outage.

Projected values of future drift were incorporated into loop accuracy calculations for Items 5, 6, 8, 11, and 12. The calculations determined that sufficient margin exists between the field trip setpoints and the analytic limit when the 30-month drift uncertainties are considered. For the APRM flow bias signal transmitters (Item 3), the projected drift based on Rosemount information of the new transmitters is significantly less than the old transmitters evaluated in the drift analysis using past drift data. Therefore, it is acceptable to extend the calibration interval to 24 months for these instruments. Extension of the calibration intervals for Item 7, 10, and 13 require changes to the field settings to ensure that sufficient margin exists between the field setting and the TS setpoint limit. The field setting changes will be completed prior to implementation of the 24-month STI. The staff finds these changes acceptable.

d. RPS EPA Channel Calibration - SR 4.9.G.2 (Change A.1.18)

This SR currently requires a once per operating cycle calibration of the overvoltage (OV), undervoltage (UV) and underfrequency (UF) protective instrumentation. This includes simulated automatic actuation of relays, logic and output breakers.

Extension of the calibration interval for the Normal and Alternate EPA time delays is acceptable because sufficient margin is available between the field settings and the TS trip setpoints to accommodate the projected drift and uncertainties associated with a 30-month calibration interval. The staff finds these changes acceptable.

2.2.3 Primary Containment Isolation System (PCIS) Instrumentation

a. PCIS Instrument Response Time Testing - SR 4.2.A (Change 1.A.5)

This SR currently requires that response times of the MSIV actuation trip functions listed in SR 4.2.A be demonstrated within specified limits once per 18 months. This SR can be extended to support a 24-month operating cycle because of the redundant design of the PCIC, adequate on-line testing to detect failures that could affect PCIC response times, available margin to accommodate potentially slower response times, and a monitoring program to detect failures of these transmitters due to loss of fill-oil. This conclusion is supported by a review of past surveillance results which indicate that all required acceptance criteria have consistently been met.

replaced with new switches. Past drift for the temperature indicating controllers has exceeded the CT on more than rare occasions with four out of the five failures occurring before 1988. Past drift for the emergency trains differential pressure switches has exceeded the CT on more than rare occasions. All these failures were minimally above CT and did not jeopardize the switch design function. New calibration tolerances have been calculated for these instruments based on past performance to bound future drift for the extended interval. Predicted values of future drift were incorporated into loop accuracy calculations for these instruments. New calibration tolerance bands for the DPS, DPIS, and certain temperature instrumentation were calculated based on past instrument performance. The calculations determined that future drift over the longer STI is predicted to remain within the existing or revised calibration tolerance. Sufficient margin is provided between the field trip setpoint and the TS setpoint limit. Based on the above analysis, the proposed extension of the calibration STI to 24 months for this instrumentation is acceptable.

THIS SURVEILLANCE REQUIREMENT WAS DELETED BY TAF TECH. SPEC. AMENDMENT 281

c. SR 4.11.B.2 Crescent Area Unit Cooler Temperature Control Instrumentation Calibrations (Change 1.A.20)

A review of drift data for the fan control temperature switches and the temperature indicating controllers for the crescent area indicates that drift values were within the required calibration tolerance. Therefore, the instrumentation has an acceptable past performance record as defined in Generic Letter 91-04. Predicted values of future drift for these instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field setpoint and the TS setpoint limit considering 30-month drift uncertainties. Based on the results of the above analysis, the proposed extension of the calibration interval for the temperature control instrumentation is acceptable.

d. SR 4.11.C.2 Battery Room Ventilation Temperature Transmitter and Differential Pressure Switch Calibrations (Change 1.A.21)

A review of past drift data for the battery room differential pressure switches indicates that drift has exceeded the calibration tolerance on several occasions. These failures were on the air handling unit (AHU) and recirculation fan switches which provide annunciation only and do not perform a safety-related function, and on the exhaust fan switches which provide an automatic start of the exhaust fans. New calibration tolerances have been calculated for these instruments based on past performance to bound future drift. Predicted values of future drift for these instruments were incorporated into loop accuracy calculations to ensure that sufficient margin exists between the field trip setpoint and the TS trip setpoint limit when 30-month drift uncertainties are considered. Based on the results of the above analysis, the proposed extension is acceptable to the staff.

e. RETS SR 3.7.a., 3.7.b.2 and 3.7.b.3 Off-Gas System Explosive Gas Instrumentation Channel Functional Test and Instrument Calibrations (Changes 1.A.22, 1.A.23, 1.A.24, 1.A.25)

2.2.10 Changes to the RPS Normal Supply EPA Undervoltage Trip Setting in SR 4.9.G.2 (Change 1.B.6)

The licensee performed a calculation to determine the total channel uncertainties associated with the normal RPS EPA trip setpoints over a 24-month operating cycle. Based on the results of this calculation, the RPS MG set source undervoltage (UV) setpoint specified in SR 4.9.G.2 requires revision from its present value of ≥108V to ≥112.3V. The licensee analyzed the impact of the voltage drop from the EPAs to scram the pilot valve solenoids and other relays and concluded that the minimum voltage should be raised for the RPS scram pilot valve solenoids to ensure proper operation. The proposed SR 4.9.G.2 RPS MG set source UV setpoint, ≥112.3V, is more conservative. Based on our review of the setpoint analysis and the fact that is more conservative, the staff concludes that this setpoint change is acceptable.

2.2.11 Editorial, Clarification and Bases Changes

a. Technical Specification Tables 4.1-2, 3.2-10, 4.2-5, 4.2-6, and 4.2-8 are revised to make the format consistent with the changes in the proposed amendment and the BWR Standard Technical Specifications. These proposed changes are editorial in nature to clarify the TS requirements and are, therefore, acceptable.

b. The proposed changes to Table 3.2-10 clarify the operability and surveillance requirements by adding instrumentation components previously omitted from the table, and by reformatting the table to make it consistent with other instrumentation tables in the TS. These changes clarify operability and surveillance requirements for the remote shutdown equipment, incorporate editorial changes and do not change any TS requirements. They are, therefore, acceptable.

c. The proposed changes to the Technical Specification Bases revise terms such as "each refueling outage," "during refueling outage," "once per operating cycle," and "once per 24 months" to provide consistency between the surveillance test intervals and the Bases discussion. These proposed changes clarify the new STIs and are acceptable.

Based on review of the proposed changes to the James A. FitzPatrick Nuclear Power Plant TS, the NRC staff finds that the proposed changes to extend instrumentation surveillance test intervals to support 24-month operating cycles are consistent with the provisions of Generic Letter 91-04. In addition, the staff finds that the proposed instrument setpoint changes provide sufficient margin between the field settings and the TS limits for instrument drift predicted for the extended calibration interval. Finally, the staff finds that the proposed editorial changes and Bases changes more clearly define the surveillance requirements with specific applicability and corrective actions. The staff, therefore, concludes that the proposed TS changes for instrumentation surveillances on a 24-month operating cycle as discussed above are acceptable.