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3.9 (cont'd)

3. From and after the time that one of the Emergency Diesel Generator Systems is made or found to be inoperable, continued reactor operation is permissible for a period not to exceed 7 days provided that the two incoming power sources are available and that the remaining Diesel Generator System is operable. At the end of the 7 day period, the reactor shall be placed in a cold condition within 24 hours, unless the affected diesel generator system is made operable sooner.
4. When both Emergency Diesel Generator Systems are made or found to be inoperable restore at least one system to operable status within two hours or place the reactor in the cold condition within the following 24 hours.
5. Deleted

4.9 (cont'd)

3. The emergency diesel generator system instrumentation shall be checked during the monthly generator test.
4. Once every 24 months, the conditions under which the Emergency Diesel Generator System is required will be simulated to demonstrate that the pair of diesel generators will start, accelerate, force parallel, and accept the emergency loads in the prescribed sequence.
5. Once within one hour and at least once per twenty-four hours thereafter while the reactor is being operated in accordance with Specifications 3.9.B.1, 3.9.B.2, or 3.9.B.3 the availability of the operable Emergency Diesel Generators shall be demonstrated by manual starting and force paralleling where applicable.

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3.9 (cont'd)

3. From and after the time that both batteries are made or found to be inoperable for any reason, the reactor shall be in a cold condition within 24 hrs.

4.9 (cont'd)

3. Once every 24 months, during shutdown, each station battery shall be subjected to a service (duty cycle) test.¹
4. Once every 60 months, during shutdown, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.
5. 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 \geq 100% of the manufacturer's rating.
6. Each battery charger shall be visually inspected weekly and a performance test conducted once every 24 months.
7. Once/month: open the battery charger output breakers one at a time and observe performance for proper operation.

1. A modified performance test may be performed in lieu of the battery service test.

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3.9 (cont'd)

F. LPCI MOV Independent Power Supplies

4.9 (cont'd)

F. LPCI MOV Independent Power Supplies

1. Every week the specific gravity, voltage and temperature of each pilot cell, and overall battery voltage shall be measured and chargers and inverters shall be visually inspected.
2. Every three months the following measurements shall be made:
 - a. Voltage of each cell to the nearest of 0.01v;
 - b. Specific gravity of each cell;
 - c. Temperature of every fifth cell.
3. Once every 24 months, each battery shall be subjected to a service (duty cycle) test.¹
4. Once every 60 months, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

1. A modified performance test may be performed in lieu of the battery service test.

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3.9 (con'd)

F. LPCI MOV Independent Power Supplies

1. Reactor shall not be made critical unless both independent power supplies, including the batteries, inverters and chargers and their associated buses (MCC-155 and MCC-165) are in service, except as specified below.
2. During power operation, if one independent power supply becomes unavailable, repairs shall be made immediately and continued reactor operation is permissible for a period not to exceed 7 days unless the unavailable train is made operable sooner. From and after the date one of the independent power supplies is made or found to be inoperable for any reason, the following would apply:
 - a. The other independent power supply including its charger, inverter, battery and associated bus is operable.
 - b. Pilot cell voltage, specific gravity and temperature and overall battery voltage are measured immediately and weekly thereafter for the operable independent power supply battery.
 - c. The inoperable independent power supply shall be isolated from its associated LPCI MOV bus, and this bus will be manually switched to its alternate power source.

4.9 (con'd)

F. LPCI MOV Independent Power Supplies

5. 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 \geq 100% of the manufacturer's rating.
6. Each battery charger and inverter shall be visually inspected weekly and a performance test conducted once every 24 months.
7. Once/month: open the battery charger A-C input breakers one at a time and observe performance for proper operation.

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4.9 BASES (cont'd)

D. Not Used

E. Battery System

Measurements and electrical tests are conducted at specified intervals to provide indication of cell condition and to determine the discharge capability of the batteries. Performance and service tests are conducted in accordance with the recommendations of IEEE 450-1995.

The battery service (duty cycle) test demonstrates the capacity of the battery to meet the system design requirements. When a service test is used on a regular basis, it will reflect maintenance practices. The FitzPatrick design duty cycle loads are determined by a LOCA concurrent with a loss of normal and reserve power.

The performance (discharge) test is a test of the constant current capacity of a battery and can be conducted with the battery in an as-found condition after being subjected to an equalizing charge. If performance testing is to be used to reflect baselined battery trending capacity, then special conditions (including equalizing) are required to establish the battery in an as-known condition prior to the test. If performance testing is to be used to reflect maintenance practices as well as trending, the equalizing charge can be omitted.

The modified performance test is a composite test which envelopes both the service test and performance test requirements. The modified performance test discharge current envelopes the peak duty cycle loads of the service test

followed by a constant discharge current (temperature corrected) for the performance test.

The purpose of the modified performance test is to demonstrate the battery has sufficient capacity to meet the system design requirements and to provide trendable performance data to compare the available capacity in the battery to previous capacity test results. The modified performance test may be performed in lieu of the battery service test.

The station batteries are required for plant operation, and performing the station battery service test and performance (or modified performance) test requires the reactor to be shut down.

F. LPCI MOV Independent Power Supply

Measurement and electrical tests are conducted at specified intervals to provide indication of cell condition, to determine the discharge capability of the battery. Performance and service tests are conducted in accordance with the recommendations of IEEE 450-1995.

G. Reactor Protection Power Supplies

Functional tests of the electrical protection assemblies are conducted at specified intervals utilizing a built-in test device and once per operating cycle by performing an instrument calibration which verifies operation within the limits of Section 4.9.G.

ATTACHMENT II to JPN-95-044

**Safety Evaluation
For Proposed Changes to Technical Specification
Auxiliary Electrical System Surveillance Test Intervals to
Accommodate 24-Month Operating Cycles (JPTS-95-001C)**

New York Power Authority

**JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
DPR-59**

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I. DESCRIPTION OF THE PROPOSED CHANGES

This application for amendment proposes to extend the auxiliary electrical surveillance test intervals to accommodate a 24 month operating cycle. The proposed change in test frequency is every 24 months. The specific Technical Specification changes are described below.

1. Page 217, Specification 4.9.B.4, change "Once each operating cycle" to "Once every 24 months" at the beginning of the first sentence. The revised specification reads:

"Once every 24 months, the conditions under which the Emergency Diesel Generator System is required will be simulated to demonstrate that a pair of diesel generators will start, accelerate, force parallel, and accept the emergency loads in the prescribed sequence."

2. Page 222, Specification 4.9.E.3, revise the current specification wording to the following:

"Once every 24 months, during shutdown, each station battery shall be subjected to a service (duty cycle) test."

3. Page 222, Specification 4.9.E.4, revise the current specification wording to the following:

"Once every 60 months, during shutdown, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating."

4. Page 222, incorporate new specification 4.9.E.5 as follows:

"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."

¹ A modified performance test may be performed in lieu of the battery service test.

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- d) Once every 24 months if it has reached 85% of its service life with capacity \geq 100% of the manufacturer's rating."
5. Page 222, change current Specification 4.9.E.5 to Specification 4.9.E.6 and revise "each operating cycle not to exceed 18 months" to "once every 24 months." The revised specification reads:
- "Each battery charger shall be visually inspected weekly and a performance test conducted once every 24 months."
6. Page 222, revise current specification 4.9.E.6 to 4.9.E.7 (no text changes).
7. Page 222a, Specification 4.9.F.3, revise the current specification wording to the following:
- "Once every 24 months each battery shall be subjected to a service (duty cycle) test.¹"
8. Page 222a, Specification 4.9.F.4, revise the current specification wording to the following:
- "Once every 60 months, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating."
9. Page 222b, incorporate new specification 4.9.F.5 as follows:
- "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 \geq 100% of the manufacturer's rating."

¹ A modified performance test may be performed in lieu of the battery service test.

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10. Page 222a, change current Specification 4.9.F.5 to Specification 4.9.F.6 and revise "each operating cycle not to exceed 18 months" to "once every 24 months." (This revision results in the specification being moved to page 222b) The revised specification reads:

"Each battery charger and inverter shall be visually inspected weekly and a performance test conducted once every 24 months."

11. Page 222a, revise current specification 4.9.F.6 to 4.9.F.7 (no text changes). (This revision results in the specification being moved to page 222b).
12. Page 226, Bases 4.9.E, Battery System, revise to reflect use of the revised IEEE-450-1995. The revised bases reads:

"Performance and service tests are conducted in accordance with the recommendations of IEEE-450-1995.

13. Page 226, Bases 4.9.E, Battery System, incorporate the following:

"The battery service (duty cycle) test demonstrates the capacity of the battery to meet the system design requirements. When a service test is used on a regular basis, it will reflect maintenance practices. The FitzPatrick design duty cycle loads are determined by a LOCA concurrent with a loss of normal and reserve power.

The performance (discharge) test is a test of the constant current capacity of a battery and can be conducted with the battery in an as-found condition after being subjected to an equalizing charge. If performance testing is to be used to reflect baselined battery trending capacity, then special conditions (including equalizing) are required to establish the battery in an as-known condition prior to the test. If performance testing is to be used to reflect maintenance practices as well as trending, the equalizing charge can be omitted.

The modified performance test is a composite test which envelopes both the service test and performance test requirements. The modified performance test discharge current envelopes the peak duty cycle loads of the service test followed by a constant discharge current (temperature corrected) for the performance test.

The purpose of the modified performance test is to demonstrate the battery has sufficient capacity to meet the system design requirements and to provide trendable performance data to compare the available capacity in the battery to previous capacity test results. The modified performance test may be performed in lieu of the battery service test.

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The station batteries are required for plant operation, and performing the station battery service test and performance (or modified performance) test requires the reactor to be shut down."

14. Page 226, Bases 4.9.F, LPCI MOV Independent Power Supply, revise to reflect use of the revised IEEE-450-1995. The revised bases reads:

"Performance and service tests are conducted in accordance with the recommendations of IEEE-450-1995.

II. **PURPOSE OF THE PROPOSED CHANGES**

This application for amendment proposes to extend the auxiliary electrical surveillance test intervals to accommodate a 24 month operating cycle. The proposed change in test frequency is every 24 months. These changes are necessary to avoid an extended mid-cycle outage to conduct these surveillances. These changes follow the guidance provided by Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate 24-Month Fuel Cycle," (Reference 1). Extension of the surveillance test intervals and maintenance was evaluated for the auxiliary electrical system and the results documented in Reference 2. An evaluation of the proposed technical specification changes follows.

III. **SAFETY IMPLICATION OF THE PROPOSED CHANGES**

An evaluation of the associated once per operating cycle surveillance tests is required to justify extending the surveillance interval for the identified surveillance requirements of section 4.9 of the James A. FitzPatrick Technical Specifications. The surveillance test procedures evaluation (Reference 2) conducted includes a detailed study of specific surveillance histories and operational occurrences. Surveillance test data was analyzed, where applicable, for components affected by the extended operating cycle. Operational occurrence reports related to the James A. FitzPatrick plant auxiliary electrical systems were also reviewed and no significant problems were detected.

EDGs

The surveillance(s) associated with Specification 4.9.B.4 include the following:

- 1) The Emergency AC Power Load Sequencing Test and 4 kV Emergency Power System Voltage Relays Instrument Functional Test.
- 2) The LOCA Bypass of EDG Shutdown Logic Functional Test.

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The Emergency AC Power Load Sequencing Test and 4kV Emergency Power System Voltage Relays Instrument Functional Test verifies that each pair of Emergency Diesel Generators (EDGs) will start, accelerate, force parallel and accept emergency loads in the prescribed sequence under conditions that simulate those requiring the EDG system.

The testing interval of this surveillance test can be safely extended to accommodate a 24 month operating cycle based on a review of its past surveillance test data. The data reviewed from 1987 to 1995 produced the following results:

- a) A test dated 4/18/87 indicated the B core spray timer required readjustment (i.e., initially failing this portion of test), before successfully completing the surveillance test.
- b) Tests performed in 1988 and in 1990 passed all portions of this surveillance test.
- c) In 1992, a portion of the test failed initially, was then retested, and passed the test.
- d) The test performed in 1993 and 1995 passed all portions of the surveillance test.

The test failures of 1987 and 1992 were associated with the ECCS pump sequencing timers. The requirement to test these timers as a part of the Emergency AC Power Load Sequencing Test and 4kV Emergency Power System Voltage Relays Instrument Functional Test has been removed from the test. These timers are tested on a frequency of once every six months during logic system functional testing. The test method has also been improved by use of electronic test equipment. The testing frequency for the Emergency AC Power Load Sequencing Test and 4kV Emergency Power System Voltage Relays Instrument Functional Test can be safely extended to 24 months because the portion of the testing which caused failures in 1987 and 1992 is tested once every six months and therefore is not affected by an increase in operating cycle length.

Potential EDG operability problems are detected by monthly on line testing (which includes EDG full load testing and system instrumentation check). Based on the above discussion of this surveillance test history, the testing interval for this surveillance test can be safely extended to accommodate a 24 month operating cycle.

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The second plant surveillance test associated with Specification 4.9.B.4 is the LOCA Bypass of EDG Shutdown Logic Functional Test, which verifies that low lube oil pressure and high circulating water temperature does not shut down the EDG when started in an accident condition. With an EDG running, an EDG shutdown logic circuit lead is lifted to simulate LOCA signals. Low lube oil pressure switch and high jacket water temperature switch contacts are jumpered to simulate engine shutdown signals. Continued EDG operation demonstrates LOCA bypass of these shutdown signals. When both LOCA relays have been tested, the lifted lead is installed with the shutdown signal still applied, demonstrating proper shutdown logic function.

The LOCA bypass of EDG shutdown logic functional test can be safely extended to accommodate a 24 month operating cycle because the review of past surveillance tests performed from 1987 to 1995 indicates that the test results were satisfactory with no corrective actions required.

On-line testing adequately demonstrates system operability and past equipment performance has not affected the safety system functions. Therefore, based on the above associated surveillance tests for Specification 4.9.B.4 discussed above, this Technical Specification surveillance test interval can be safely extended to accommodate a 24 month operating cycle.

Station Batteries

The surveillance associated with current Specifications 4.9.E.3 and 4.9.E.5 is the 125V DC Station Battery Service and Charger Performance Test. IEEE 450-1995 (Reference 3) provides recommended maintenance practices and testing procedures that can be used to optimize the life and performance of large lead-acid storage batteries. It also provides guidance for determining when batteries should be replaced. These practices and guidance are incorporated into the appropriate plant procedures at FitzPatrick. In addition to extending the surveillance intervals for service testing and battery charger testing to 24 months, new commitments are proposed for modified performance testing (Specifications 4.9.E.4 and 4.9.F.4) and accelerated testing (Specifications 4.9.E.5 and 4.9.F.5) for station and Low Pressure Coolant Injection (LPCI) Independent Power Supply (IPS) batteries that show degradation or are approaching the end of their rated service life.

The service test is a test of the batteries ability to satisfy the duty cycle design requirements. The performance test is a test of the constant current capacity of a battery which is performed to detect any change in the battery capacity and provide battery performance trending data. This test is intended to determine overall battery degradation due to age and usage. The purpose of a modified performance test is to compare the capacity of the battery against the manufacturers specified capacity and thereby determine when the battery is approaching the end of its life and to verify the battery can perform its intended safety function. The modified performance test is a

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composite test which consists of a peak load equivalent to that of the service test and a constant discharge current of the performance test for the remainder of the test which envelopes the next highest load value of the service test. The modified performance test may be performed in lieu of the service test required by specification 4.9.E.3 at any time because the modified performance test bounds both the service and performance tests. (This conclusion is supported by a plant specific safety evaluation on station battery and LPCI battery modified performance tests). The implementation of this single test increases the availability of the respective batteries because of reduced time required for testing and charging, provided the acceptance criteria is met. Use of the modified performance test is consistent with the recommendations of IEEE-450-1995.

The proposed requirements for battery testing are consistent with those stipulated in IEEE Standard 450-1995. The performance or modified performance testing of specification 4.9.E.4, in conjunction with the other requirements in section 4.9.E, provide a high level of confidence that the condition of the station batteries will be observed 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:

- Every week the specific gravity, voltage and temperature of the most cell and overall battery voltage is measured.
- 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 Technical Specifications.
- 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.

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.

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The 125V DC station battery service and charger performance surveillance test required by current Specifications 4.9.E.3 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.
- 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) Specifications 4.9.E.3 and 4.9.E.5 discussed above, the proposed Technical Specification 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 specification be revised to state that the performance test shall verify the battery capacity is at least 80% of the manufacturers rating. This acceptance criteria is consistent with the recommendations of IEEE-450-1995. A capacity of <80% shows that the battery rate of degradation is increasing, even if there is ample capacity to meet the load requirement.

New Specification 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 $\geq 100\%$ of the manufacturers rating. These performance testing requirements are consistent with those stipulated in IEEE standard 450-1995.

LPCI Station Batteries

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The surveillance associated with (current) Specifications 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 Specifications 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 Specification 4.9.F.3 and the battery charger performance test (current Specification 4.9.F.5, renumbered to 4.9.F.6). In addition, Specification 4.9.F.3 has been revised to specify that a modified performance test may be performed in lieu of the battery service test.

This surveillance test can be safely extended to accommodate a 24 month operating cycle for the following reasons:

- 1) Service and performance testing is done in accordance with the recommendations of IEEE 450-1995.
- 2) On-line LPCI battery testing, performed weekly and quarterly, is adequate to detect any operability problems.
- 3) The review of previous discharge test results through 1995 indicated satisfactory test results with those test failure exceptions limited to test equipment failure and incorrect acceptance criteria. (The actual performance and duty cycle test did not cause the test to be unsatisfactory).
- 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 Specifications 4.9.F.3 and 4.9.F.5 discussed above, this Technical Specification surveillance test interval can be safely extended to accommodate a 24 month operating cycle.

Technical Specification 4.9.F.4 requires a performance test of the LPCI 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 specification be revised to state that the performance test shall

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verify the battery capacity is at least 80% of the manufacturers rating. This acceptance criteria is consistent with the recommendations of IEEE 450-1995. A capacity of <80% shows that the battery rate of degradation is increasing, even if there is ample capacity to meet the load requirement.

New Specification 4.9.E.5 proposes accelerated performance testing requirements for any LPCI 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 $\geq 100\%$ of the manufacturers rating. These performance testing requirements are consistent with those stipulated in IEEE standard 450-1995.

On-line testing adequately demonstrates system operability and past equipment performance has not affected the LPCI safety system functions. Therefore, based on the associated LPCI battery surveillance tests discussed above, the LPCI battery Technical Specification surveillance test intervals can be safely extended to accommodate a 24 month operating cycle.

The proposed specifications 4.9.E.4 and 4.9.F.4 use the term "performance test" and "modified performance test." However, the bases are clarified to note that these represent discharge tests.

The assumptions in the James A. FitzPatrick licensing basis are not invalidated by performing the auxiliary electrical system surveillances at the bounding interval limits (30 months) to accommodate a 24 month operating cycle.

IV. **EVALUATION OF NO SIGNIFICANT HAZARDS CONSIDERATION**

Operation of the James A. FitzPatrick plant in accordance with the proposed Amendment would not involve a significant hazards consideration as defined in 10 CFR 50.92, since it would not:

1. involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes increase the interval between auxiliary electrical system functional tests and also propose additional requirements for battery performance testing. These changes are consistent with the guidance provided in Generic Letter 91-04. These changes do not involve any physical changes to the plant, nor do they

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alter the way the auxiliary electrical system functions. Past equipment performance indicates that the test acceptance criteria has been consistently met, providing additional assurance that the longer surveillance interval will not degrade system performance. The proposed changes revise Bases section 4.9 to clarify battery testing requirements and indicate consistency with the length of the 24 month operating cycle. Therefore, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes increase the interval between auxiliary electrical system functional tests and also propose additional requirements for battery performance testing. These changes are consistent with the guidance provided in Generic Letter 91-04. The proposed changes do not change the ability of the auxiliary electrical systems to provide electrical power during a design basis accident. Past equipment performance indicates that the test acceptance criteria has been consistently met, providing additional assurance that the longer surveillance interval will not degrade system performance. The proposed changes do not modify the design or operation of plant equipment, therefore, no new or different failure modes are introduced. The proposed changes revise Bases section 4.9 to clarify battery testing requirements and indicate consistency with the length of the 24 month operating cycle. Therefore, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. involve a significant reduction in a margin of safety.

The proposed changes increase the interval between auxiliary electrical system functional tests and also propose additional requirements for battery performance testing. These changes are consistent with the guidance provided in Generic Letter 91-04. The proposed changes do not alter the configuration of the auxiliary electrical system nor change the manner in which the system functions. Operation of the facility remains unchanged by the proposed changes. An evaluation of past equipment performance indicates that auxiliary electrical system operability is not time dependent. The proposed changes revise Bases section 4.9 to clarify battery testing requirements and indicate consistency with the length of the 24 month operating cycle. Therefore, a longer surveillance test interval for the station batteries and LPCI batteries will not degrade performance of the auxiliary electrical system and will not involve a significant reduction in a margin of safety.

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V. **IMPLEMENTATION OF THE PROPOSED CHANGE**

Implementation of the proposed changes will not adversely affect the ALARA or Fire Protection Programs at the James A. FitzPatrick plant, nor will the changes affect the environment.

VI. **CONCLUSION**

The changes, as proposed, do not constitute an unreviewed safety question as defined in 10 CFR 50.59. That is, they:

1. will not increase the probability nor the consequences of an accident or malfunction of equipment important to safety as previously evaluated in the Safety Analysis Report;
2. will not create the possibility of an accident or malfunction of a type different from any previously evaluated in the Safety Analysis Report;
3. will not reduce the margin of safety as defined in the basis for any technical specification; and
4. involve no significant hazards consideration, as defined in 10 CFR 50.92.

VII. **REFERENCES**

1. NRC Generic Letter 91-04, "Changes in Technical Specification Surveillance Intervals to Accommodate 24-Month Fuel Cycle," dated April 2, 1991.
2. NYPA report JAF-RPT-ELEC-01547, "24 Month Operating Cycle Auxiliary Electrical System Surveillance Test Extensions," dated September 1994.
3. IEEE 450-1995, "Recommended Practice for Maintenance, Testing, and Replacement of Large Lead Storage Batteries for Generating Stations and Substations."
4. JAF-SE-94-120, Revision 1, Station and LPCI Battery Modified Performance Tests, January, 1995

ATTACHMENT III to JPN-95-044

**Markup of the current Technical Specification pages
Extension of Auxiliary Electrical System Surveillance Test Intervals to
Accommodate 24-Month Operating Cycles (JPTS-95-001C)**

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

Docket No. 50-333

DPR-59

JAFNPP

3.9 (cont'd)

3. From and after the time that one of the Emergency Diesel Generator Systems is made or found to be inoperable, continued reactor operation is permissible for a period not to exceed 7 days provided that the two incoming power sources are available and that the remaining Diesel Generator System is operable. At the end of the 7 day period, the reactor shall be placed in a cold condition within 24 hours, unless the affected diesel generator system is made operable sooner.
4. When both Emergency Diesel Generator Systems are made or found to be inoperable restore at least one system to operable status within two hours or place the reactor in the cold condition within the following 24 hours.
5. Deleted

4.9 (cont'd)

3. The emergency diesel generator system instrumentation shall be checked during the monthly generator test.
4. *Once every 24 months*
~~Once each operating cycle~~, the conditions under which the Emergency Diesel Generator System is required will be simulated to demonstrate that the pair of diesel generators will start, accelerate, force parallel, and accept the emergency loads in the prescribed sequence.
5. Once within one hour and at least once per twenty-four hours thereafter while the reactor is being operated in accordance with Specifications 3.9.B.1, 3.9.B.2, or 3.9.B.3 the availability of the operable Emergency Diesel Generators shall be demonstrated by manual starting and force paralleling where applicable.

JAFNPP

3.9 (cont'd)

3. From and after the time that both batteries are made or found to be inoperable for any reason, the reactor shall be in a cold condition within 24 hrs.

4.9 (cont'd)

Once every 24 months, during shutdown, each Station battery

3. ~~Once each operating cycle not to exceed 18 months the station batteries shall be subjected to a service (duty cycle) test.~~

4. Once each 5-year interval the station batteries shall be subjected to a performance discharge (capacity) test.

Each battery charger shall visually inspected weekly and a performance test conducted each operating cycle not to exceed 18 months; once every 24 months.

7. Once/month: open the battery charger output breakers one at a time and observe performance for proper operation.

4. Once every 60 months, during shutdown, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

5. 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 \geq 100% of the manufacturer's rating.

1. A modified performance test may be performed in lieu of the battery service test.

3.9 (cont'd)

4.9 (cont'd)

F. LPCI MOV Independent Power Supplies

F. LPCI MOV Independent Power Supplies

4. Once every 60 months, each battery shall be subjected to a performance test (or modified performance test). This test shall verify that the battery capacity is at least 80% of the manufacturer's rating.

5. 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 $\geq 100\%$ of the manufacturer's rating.

1. Every week the specific gravity, voltage and temperature of each pilot cell, and overall battery voltage shall be measured and chargers and inverters shall be visually inspected.

2. Every three months the following measurements shall be made:

- a. Voltage of each cell to the nearest of 0.01v;
- b. Specific gravity of each cell;
- c. Temperature of every fifth cell.

Once every 24 months each

3. ~~Once each operating cycle not to exceed 18 months the battery shall be subjected to a service (duty cycle) test. 1.~~

4. Once each 5-year interval the battery shall be subjected to a performance discharge (capacity) test.

~~5-6~~ Each battery charger and inverter shall be visually

inspected weekly and a performance test conducted each ~~operating cycle not to exceed 18 months. once every 24 months~~

~~6-7~~ Once/month: open the battery charger A-C input breakers one at a time and observe performance for proper operation.

1. A modified performance test may be performed in lieu of the battery service test.

4.9 BASES (con't)

| D. Not Used

| E. Battery System

Measurements and electrical tests are conducted at specified intervals to provide indication of cell condition and to determine the discharge capability of the batteries. Performance and service tests are conducted in accordance with the recommendations of IEEE 450-1987, 1995.

← Insert E

| F. LPCLMOV Independent Power Supply

Measurement and electrical tests are conducted at specified intervals to provide indication of cell condition, to determine the discharge capability of the battery. Performance and service tests are conducted in accordance with the recommendations of IEEE 450-1987, 1995.

| G. Reactor Protection Power Supplies

Functional tests of the electrical protection assemblies are conducted at specified intervals utilizing a built-in test device and once per operating cycle by performing an instrument calibration which verifies operation within the limits of Section 4.9.G.

INSERT E

The battery service (duty cycle) test demonstrates the capacity of the battery to meet the system design requirements. When a service test is used on a regular basis, it will reflect maintenance practices. The FitzPatrick design duty cycle loads are determined by a LOCA concurrent with a loss of normal and reserve power.

The performance (discharge) test is a test of the constant current capacity of a battery and can be conducted with the battery in an as-found condition after being subjected to an equalizing charge. If performance testing is to be used to reflect baselined battery trending capacity, then special conditions (including equalizing) are required to establish the battery in an as-known condition prior to the test. If performance testing is to be used to reflect maintenance practices as well as trending, the equalizing charge can be omitted.

The modified performance test is a composite test which envelopes both the service test and performance test requirements. The modified performance test discharge current envelopes the peak duty cycle loads of the service test followed by a constant discharge current (temperature corrected) for the performance test.

The purpose of the modified performance test is to demonstrate the battery has sufficient capacity to meet the system design requirements and to provide trendable performance data to compare the available capacity in the battery to previous capacity test results. The modified performance test may be performed in lieu of the battery service test.

The station batteries are required for plant operation, and performing the station battery service test and performance (or modified performance) test requires the reactor to be shut down.

ATTACHMENT IV to JPN-95-044

References 2 and 4 to the Safety Evaluation
For Proposed Changes to Technical Specification
Auxiliary Electrical System Surveillance Test Intervals to
Accommodate 24-Month Operating Cycles (JPTS-95-001C)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT

Docket No. 50-333

DPR-59