Attachment I to JPN-93-037

# PROPOSED TECHNICAL SPECIFICATION CHANGES
# EDG FUEL OIL/AIR COMPRESSOR
# SURVEILLANCE TEST CLARIFICATIONS

(JPTS-91-026)

New York Power Authority

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

## 4.9 BASES

The general objective of this specification is to check equipment operability, detect equipment failures and deterioration.

A. Normal and Reserve A-C Power Systems

1. Reserve A-C Power Source

The equipment is normally operated in the stand-by energized condition. Surveillance monitors are provided for determining its normal operability status both while in stand-by or during plant startup and shutdown procedures. Insulation tests are conducted at specified intervals to determine the condition of insulation.

2. Auxiliary Equipment

Mechanical and electrical tests are conducted at specified intervals to assure proper functioning of equipment.

B. Emergency A-C Power System

The emergency Diesel Generator Systems are tested monthly to determine functional performance. Test procedures and intervals are specified to check for failure or deterioration in equipment and system operation since last use. Full load applied to the diesel unit is applied to prevent fouling of the engine: operation at equilibrium temperatures ensures there are no overheat problems.

Once per month tests are conducted for support systems independently or as part of monthly diesel generator surveillance: (a) to check the air starting systems for automatic starting of the compressors and their ability to recharge the receivers, (b) to check the fuel oil transfer system to ensure that the transfer pumps will refill the day tanks.

During the operating cycle test, a functional test of the emergency a-c power system is made by simulating a loss-of-coolant accident and a coincident loss of normal and reserve a-c power to the plant for checking proper operation of the system including sequencing of engineered safeguards and for Emergency Core Cooling System equipment.

C. Diesel Fuel

Diesel fuel quality is checked at specified intervals to ensure high reliability of engine operation.

The operability of the fuel oil transfer system is demonstrated by partially draining the day tanks, initiating low and low-low level signals to start the lead and backup pumps, respectively, and terminating fuel oil transfer on a high level signal.

3.9 Continued

2. The Diesel Fuel Oil Transfer System shall be operable whenever the diesel generator it supplies is required to be operable, except as specified below:

   a. From and after the time that one fuel oil transfer pump per Diesel Generator System is made or found to be inoperable for any reason, continued reactor operation is permissible for a period not to exceed 60 days; provided that the remaining fuel oil transfer pumps are demonstrated to be operable immediately and weekly thereafter.

   b. From and after the time that only two fuel oil transfer pumps per Diesel Generator System are operable, continued reactor opertion is permissible for a period not to exceed 30 days total per pair of diesels, provided that the remaining fuel oil transfer pumps are demonstrated to be operable and daily thereafter.

4.9 Continued

2. Once per month demonstrate the fuel oil transfer system operates to transfer fuel from the storage systems to the fuel oil day tanks.

# SAFETY EVALUATION FOR PROPOSED TECHNICAL SPECIFICATION CHANGES EDG FUEL OIL/AIR COMPRESSOR SURVEILLANCE TEST CLARIFICATIONS ( JPTS-91-026)

## I. DESCRIPTION OF THE PROPOSED CHANGES

The proposed changes to the James A. FitzPatrick Technical Specifications are addressed below.

Minor changes in format, such as type font, margins or hyphenation, are not described in this submittal. These changes are typographical in nature and do not affect the content of the Technical Specifications.

Page 219, Specification 4.9.C.2

Replace the current surveillance requirement:

> "During the monthly diesel generator testing, the diesel fuel oil transfer systems shall be checked for proper operation."

with:

> "Once per month demonstrate the fuel oil transfer system operates to transfer fuel from the storage systems to the fuel oil day tanks."

Page 219, Specification 3.9.C.2

Replace "be" with "are" in the last sentence.

Page 225, Bases 4.9.B

In the second paragraph replace the phrase:

> "During the monthly test, (a) the air starting systems are checked for automatic starting of the compressors and their ability to recharge the receivers, (b) the fuel oil transfer system is checked"

with the phrase:

> "Once per month tests are conducted for support systems independently or as part of monthly diesel generator surveillance: (a) to check the air starting systems for automatic starting of the compressors and their ability to recharge the receivers, (b) to check the fuel oil transfer system"

Page 225, Bases 4.9.C

Replace the sentence:

"Diesel fuel quality is checked at specified intervals to determine water content, micro-organism slime formation, etc., to ensure high reliability of engine operation"

with:

"Diesel fuel quality is checked at specified intervals to ensure high reliability of engine operation"

At the end of the Bases add the following sentence:

"The operability of the fuel oil transfer system is demonstrated by partially draining the day tanks, initiating low and low-low level signals to start the lead and backup pumps, respectively, and terminating fuel oil transfer on a high level signal."

## II. PURPOSE OF THE PROPOSED CHANGES

The proposed changes revise the Surveillance Requirements and associated Bases for the emergency diesel generator fuel oil transfer system and the emergency diesel generator air starting compressors to clarify that testing of these systems/components can be conducted either concurrently or independently of the monthly emergency diesel generator tests. The proposed changes also add the acceptance criteria for emergency diesel generator fuel quality testing to the Bases and make an editorial correction.

### A. Fuel Oil Transfer

As written, Specification 4.9.C.2 is interpreted as requiring performance of the emergency diesel generator fuel oil transfer system test in conjunction with the monthly emergency diesel generator test. This interpretation is consistent with Bases 4.9.B which indicates that the fuel oil transfer system test is performed during the monthly emergency diesel generator test.

The proposed changes will revise Specification 4.9.C.2 and Bases 4.9 to allow surveillance procedures to test the emergency diesel generator fuel oil transfer system either concurrently or independently of monthly Emergency Diesel Generator (EDG) testing. Testing the fuel oil transfer system often requires two shifts to complete the test or precludes a shift from accomplishing other duties. By allowing concurrent or independent testing added operational flexibility is provided to allocate plant resources to perform other functions.

### B. Air Starting Compressors

As written, Specification 4.9.B.2 allows performance of air starting compressor testing at the same time or independent of the monthly emergency diesel generator test. This is inconsistent with Bases Section 4.9.B which indicates that the air

starting compressor test is performed during the monthly emergency diesel generator test. The proposed change revises Bases 4.9.B to be consistent with Specification 4.9.B.2.

**C. Fuel Oil Testing**

As written, Bases 4.9.C does not correctly identify the acceptance criteria for emergency diesel generator fuel oil in Surveillance Requirement 4.9.C.1. The proposed changes will revise the Bases Section by deleting acceptance criteria which are different than or repetitious of those in Surveillance Requirement 4.9.C.1.

**D. Editorial**

Specification 3.9.C.2.a says "provided that the remaining fuel oil transfer pumps be demonstrated to be operable immediately and weekly thereafter." The proposed change deletes the "be" and replaces it with "are" to correct the grammar of the sentence and to make the wording consistent with the following Specification 3.9.C.2.b.

## III. SAFETY IMPLICATIONS OF THE PROPOSED CHANGES

**A. Fuel Oil Transfer**

The proposed changes to allow concurrent or independent testing of the fuel oil transfer system will not affect emergency diesel generator operability nor is there a change to the demonstrated reliability of the emergency diesel generator fuel oil transfer system. The only changes to the current test procedure (Reference 1) will be to allow decoupling of the fuel oil transfer system test from the monthly EDG test.

The monthly EDG test will consume enough fuel (i.e., approximately 33% of the day tank's capacity) to automatically activate the fuel oil transfer system by the generation of a low level signal (at 65 - 75% of the day tank nominal capacity). Operation of the lead fuel oil transfer pump will prevent the backup transfer pump from activating.

Fuel oil transfer system testing (Reference 2) requires each fuel storage day tank to be manually drained until the two fuel oil transfer pumps (i.e., lead and backup) can be tested by generating a low level and a low-low level signal, respectively. The lead pump is deactivated to test the backup pump. At the test conclusion, the day tank is refilled by the transfer pumps from the main fuel oil storage tank. Termination of fuel transfer occurs when the day tank reaches 95 - 100% full capacity and a high level signal is generated. Performance of this test will not deplete the day tanks (at least one hour of fuel always remains) or prevent their refilling if the EDGs are required during the test.

Since fuel oil transfer system testing and monthly EDG testing can be performed as separate operations there are no adverse safety implications due to the proposed

changes. Test effectiveness remains the same for independent system testing. There is no reduction in test frequency or acceptance criteria. Performing these tests independently provides added flexibility in work assignments. This revised test schedule is consistent with the guidance provided by the improved Standard Technical Specifications (STS) (Reference 3) which allows fuel oil transfer system testing independent of the monthly emergency diesel generator test.

B. Air Starting Compressors

The proposed change to revise the Bases to be consistent with Specification 4.9.B.2 will not affect emergency diesel generator operability nor is there a change to the demonstrated reliability of the air starting compressors.

The operability of the air starting compressors is assessed during the monthly EDG test when starting the EDGs lowers the air bank to the compressor setpoint (175 - 185 psig). This requires the automatic activation of the air starting compressors to bring the air bank to its normal pressure (195 - 205 psig).

Air compressor testing (Reference 4) involves manual draining of the air banks to verify proper operation of the compressors. The activities involved in the air compressor operability test requires personnel in excess of the staff required for the EDG test. Performing these tests concurrently or independently provides added flexibility in work assignments. The current Surveillance Requirement, 4.9.B.2 also supports this interpretation. As written Specification 4.9.B.2 can be interpreted to allow testing of the emergency diesel generator air starting compressors concurrently or independent from monthly EDG testing. The proposed changes will clarify the Bases section to reflect both testing and surveillance requirement allowances to test air starting compressors concurrently or independently from monthly EDG testing.

There are no adverse safety implications due to the proposed change. There is no reduction in test frequency or acceptance criteria. The change only clarifies the bases section for consistency with the existing surveillance requirement. This test schedule is consistent with the guidance provided by the improved STS which allows air compressor testing concurrently or independent of the monthly emergency diesel generator test.

C. Fuel Oil Testing

The proposed changes to Bases Section 4.9.C will not effect current testing requirements for emergency diesel generator fuel oil. Amendment 164 (References 5 and 6) upgraded the acceptance criteria for emergency diesel generator fuel oil quality testing for Surveillance Requirement 4.9.C.1. It discusses agreement with the criteria of ASTM D 975-1981 (Reference 7) and Regulatory Guide 1.137 (Reference 8). The proposed changes delete the reference to micro-organism slime formation and water content. The micro-organism check is performed as part of a quarterly check separate from the monthly emergency diesel generator fuel oil quality test (Reference 9) and is not a 4.9.C.1 Surveillance Requirement. The water content limits are contained in Surveillance Requirement 4.9.C.1. Deleting the acceptance

criteria which are different than or repetitious of those in Surveillance Requirement 4.9.C.1. will not alter the acceptability of the existing testing requirements or otherwise affect plant safety.

D. Editorial

There is no safety significance to the correction of the grammar in this Specification.

## IV. EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATION

Operation of the 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 allow emergency diesel generator fuel oil transfer system testing either concurrently or independently of monthly emergency diesel generator testing, clarify the independence of emergency diesel generator and air starting compressor testing, clarify the bases for testing fuel oil and make an editorial correction. These changes involve no hardware modifications, alteration of system operations, or degradation of system performance. Except for allowing independent testing, there are no changes to the procedures used for testing. Concurrent or independent testing of the fuel oil transfer system and the air starting compressors from the emergency diesel generators provides greater flexibility in utilizing plant resources to meet surveillance requirements. Independent system testing will not alter test effectiveness in determining system reliability nor will it alter testing methodology. The changes will not alter the level of confidence in system operability or capability. The changes to the Bases Section delete acceptance criteria which are different than or repetitious of the Surveillance Requirement. There are no changes to emergency diesel generator fuel oil requirements. The changes do not alter the conclusions of existing accident analyses as documented in the FSAR and NRC SER.

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

   The proposed changes involve no hardware modifications, alteration of system operations, or degradation of system performance. The changes do not alter testing methodology or the surveillance frequency. The nature of the changes is such that no new or different kind of accident can be created.

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

   The proposed changes will have no affect on the margin of safety. Testing methodologies will not change. The extent and frequency of system testing will

not change. Concurrent or independent testing will not effect the operability of either the emergency diesel generators, the fuel oil transfer system or the air starting compressors. Independent testing will not reduce the ability of the systems in fulfilling their respective functions in mitigating a design basis accident. Deletion of repetitious or inconsistent descriptions of the acceptance criteria for emergency diesel generator fuel oil has no effect on the margin of safety and clarifies the bases. This change does not reduce test acceptance criteria or affect acceptance test methodology.

## V. IMPLEMENTATION OF THE PROPOSED CHANGES

Implementation of the proposed changes will not adversely affect the ALARA or Fire Protection Program at the FitzPatrick plant, nor will the changes impact the environment. These changes will not result in any new releases to the environment since there are no hardware, structural, or operational changes. For these same reasons, the changes pose no radiological or fire hazards. The changes do not alter the goals or intent of the testing process but provides flexibility in scheduling the required tests.

## 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 change 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 increase the possibility of an accident or malfunction of a type different from any previously evaluated in the Safety Analysis Report; and

3. will not reduce the margin of safety as defined in the basis for any technical specification.

The changes therefore involve no significant hazards consideration, as defined in 10 CFR 50.92.

## VII. REFERENCES

1. James A. FitzPatrick Nuclear Power Plant, Operations Surveillance Test Procedure ST-9B, "EDG Full Load Test and ESW Pump Operability Test," Revision 38, dated August 6, 1992.

2. James A. FitzPatrick Nuclear Power Plant, Operations Surveillance Test Procedure ST-9L, "EDG Fuel Oil Transfer Pump Operability Test," Revision 1, dated May 31, 1992.

3. NUREG-1433 "Standard Technical Specifications General Electric Boiling Water Reactors (BWR/4)," Revision 0, dated September 1992.

4. James A. FitzPatrick Nuclear Power Plant, Operations Surveillance Test Procedure ST-9M, "EDG Starting Air Compressor Operability Test," Revision 1, dated May 31, 1992.

5. NYPA letter, J. C. Brons to D. E. LaBarge dated December 15, 1989 (JPN-89-082). Submittal for Amendment 164 to the Technical Specifications.

6. NRC letter, D. E. LaBarge to J. C. Brons dated August 10, 1990 (JAF-90-251). transmits Amendment 164 to the Technical Specifications.

7. American Society for Testing and Materials (ASTM) ASTM D 975-1981 "Standard Specification for Diesel Fuel Oils."

8. NRC Regulatory Guide 1.137 "Fuel Oil Systems for Standby Diesel Generators," Revision 1, dated October 1979.

9. James A. FitzPatrick Nuclear Power Plant Process Surveillance Procedure PSP-7, "Diesel Fuel Oil Sampling and Analysis," Revision 8, dated September 5, 1991.

10. James A. FitzPatrick Nuclear Power Plant Updated Final Safety Analysis Report Section 8.6.3, through Revision 5, dated January 1992.

11. James A. FitzPatrick Nuclear Power Plant Safety Evaluation Report (SER), dated November 20, 1972, and Supplements.

Attachment III to JPN-93-037

# PROPOSED TECHNICAL SPECIFICATION CHANGES
# EDG FUEL OIL/AIR COMPRESSOR
# SURVEILLANCE TEST CLARIFICATIONS
# MARKUP OF TECHNICAL SPECIFICATION PAGES

(JPTS-91-026)

New York Power Authority

JAMES A. FITZPATRICK NUCLEAR POWER PLANT
Docket No. 50-333
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3.9 Continued

2. The Diesel Fuel Oil Transfer System shall be operable whenever the diesel generator it supplies is required to be operable, except as specified below:

   a. From and after the time that one fuel oil transfer pump per Diesel Generator System is made or found to be inoperable for any reason, continued reactor operation is permissible for a period not to exceed 60 days; provided that the remaining fuel oil transfer pumps be demonstrated to be operable immediately and weekly thereafter.

   b. From and after the time that only two fuel oil transfer pumps per Diesel Generator System are operable, continued reactor opertion is permissible for a period not to exceed 30 days total per pair of diesels, provided that the remaining fuel oil transfer pumps are demonstrated to be operable and daily thereafter.

4.9 Continued

2. During the monthly diesel generator testing, the diesel fuel oil transfer systems shall be checked for proper operation.

Insert A

4.9 BASES

The general objective of this specification is to check equipment operability, detect equipment failures and deterioration.

A. Normal and Reserve A-C Power Systems

1. Reserve A-C Power Source

The equipment is normally operated in the stand-by energized condition. Surveillance monitors are provided for determining its normal operability status both while in stand-by or during plant start-up and shutdown procedures. Insulation tests are conducted at specified intervals to determine the condition of insulation.

2. Auxiliary Equipment

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B. Emergency A-C Power System

The emergency Diesel Generator Systems are tested monthly to determine functional performance. Test procedures and intervals are specified to check for failure or deterioration in equipment and system operation since last use. Full load applied to the diesel unit is applied to prevent fouling of the engine; operation at equilibrium temperatures ensures there are no overheat problems.

During the monthly test, (a) the air starting systems are checked for automatic starting of the compressors and their ability to recharge the receivers, (b) the fuel oil transfer system is checked to ensure that the transfer pumps will refill the day tanks.

INSERT B

During the operating cycle test, a functional test of the emergency a-c power system is made by simulating a loss-of-coolant accident and a coincident loss of normal and reserve a-c power to the plant for checking proper operation of the system including sequencing of engineered safeguards and for Emergency Core Cooling System equipment.

C. Diesel Fuel

Diesel fuel quality is checked at specified intervals to determine water content, micro-organism slime formation, etc., to ensure high reliability of engine operation.

INSERT C

INSERT A

Once per month demonstrate the fuel oil transfer system operates to transfer fuel from the storage systems to the fuel oil day tanks.

INSERT B

Once per month tests are conducted for support systems independently or as part of monthly diesel generator surveillance: (a) to check the air starting systems for automatic starting of the compressors and their ability to recharge the receivers, (b) to check the fuel oil transfer system

INSERT C

The operability of the fuel oil transfer system is demonstrated by partially draining the day tanks, initiating low and low-low level signals to start the lead and backup pumps, respectively, and terminating fuel oil transfer on a high level signal.