

ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

6. Verifying the diesel generator is aligned to provide standby power to the associated emergency busses.
- b. At least once per 92 days by verifying that a sample of diesel fuel from the fuel storage tank obtained in accordance with ASTM-D270-65, is within the acceptable limits specified in Table 1 of ASTM D975-74 when checked for viscosity, water and sediment.
- c. At least once per 18 months by:
 1. Subjecting the diesel to an inspection in accordance with procedures prepared in conjunction with its manufacturer's recommendations for this class of standby service,
 2. Verifying the capability to reject a load of greater than or equal to the largest single load associated with that diesel generator, while maintaining voltage between 3120 and 4910 volts and speed less than or equal to 75% of the difference between nominal speed and the overspeed trip setpoint and verifying recovery to 4160 ± 420 volts and 60 ± 1.2 Hz within 2 seconds.
 3. Verifying the generator capability to reject a load equal to its continuous rating without tripping. The generator voltage shall not exceed 120% during and following the load rejection.
 4. Simulating a loss of offsite power by itself, and:
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
 - b) Verifying the diesel starts on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected shutdown loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the shutdown loads. After energization of all loads, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during this test.
5. Verifying that on an Safety Injection test signal (without loss of offsite power) the diesel generator starts on the auto-start signal and operates on standby for greater than or equal to 5 minutes. The generator voltage and frequency shall be ≥ 3952 volts and > 57 Hz within 10 seconds after the auto-start signal; the steady state generator voltage and frequency shall be maintained between 4160 ± 420 volts and 60 ± 1.2 Hz during this test.

for Diesel
Generator
2B, 2B,
100 A
24 Sec.
for die
genera
2C

* Energization of Emergency Buses for Diesel 2C is achieved within 24 seconds the unit

FARLEY-UNIT 2

3/4 8-4

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ELECTRICAL POWER SYSTEMS

SURVEILLANCE REQUIREMENTS (Continued)

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6. Simulating a loss of offsite power in conjunction with a Safety Injection test signal, and
 - a) Verifying de-energization of the emergency busses and load shedding from the emergency busses.
 - b) Verifying the diesel starts from ambient condition on the auto-start signal, energizes the emergency busses with permanently connected loads within 10 seconds, energizes the auto-connected emergency (accident) loads through the load sequencer and operates for greater than or equal to 5 minutes while its generator is loaded with the emergency loads. After energization, the steady state voltage and frequency of the emergency busses shall be maintained at 4160 ± 420 volts and 60 ± 1.2 Hz during this test.

For Diesel Generators 1-28, 25 and 30, and 24 seconds for Diesel generator
 - c) Verifying that all automatic diesel generator trips, except engine overspeed and generator differential and low lube oil pressure, are automatically bypassed upon loss of voltage on the emergency bus and/or a safety injection test signal.
7. Verifying the diesel generator operates for at least 24 hours. During the first 2 hours of this test, the diesel generator shall be loaded to greater than or equal to 4474 kw for the 4075 kw diesels and 3250 for the 2850 diesels and during the remaining 22 hours of this test, the diesel generator shall be loaded to greater than or equal to 4075 kw for the 4075 kw diesels and 2850 kw for the 2850 kw diesels. Immediately after completing this 24 hour test, perform Specification 4.8.1.1.2.c.4. The generator voltage and frequency shall be ≥ 3952 volts and ≥ 57 Hz within 10 seconds after the start signal; the generator voltage and frequency shall be maintained between 3120 and ~~4190~~ 4410 volts and 57 and 61.2 Hz during this test.*

4410 - typo
8. Verifying that the auto-connected loads to each diesel generator do not exceed the 2000 hour rating of 4353 kw for the 4075 kw generator and 3100 kw for the 2850 kw generator.
9. Verifying the diesel generator's capability to:
 - a) Synchronize with the offsite power source while the generator is loaded with its emergency loads upon a simulated restoration of offsite power,
 - b) Transfer its loads to the offsite power source, and
 - c) Be restored to its standby status.

*This surveillance is not required for MODE 3 or 4. This is a one time change to plant operations prior to initial criticality.

** Energization of emergency busses for Diesel 2c is achieved within 24 seconds

These draft Technical Specification pages provide limits for energizing all Unit 2 related diesels. The 24 second limit for diesel 2C is based on the following:

1. 1 second delay for intermediate relay actuation and breaker (DG-13) trip.
2. Up to 1 second delay for closing of the output breaker DJ06.
3. 20 second time delay for bus 2J + 2 second tolerance for time relay actuation.

Total: 24 Seconds

FARLEY NUCLEAR PLANT
NUCLEAR SAFETY EVALUATION CHECK LIST

Att. 2

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PCN No. N/A Rev. _____
CN No. N/A Rev. _____
FSAR Change Notice
No. N/A
(if applicable)

- (1) UNIT 2
(2) CHECK LIST APPLICABLE TO: Changes to the Technical Specifications
(3) SAFETY EVALUATION - PART A Section 3/4.8 Electrical Power Systems

The procedure, design change or modification to which this evaluation is applicable represents:

- (3.1) Yes _____ No ☒ A change to the plant as described in the FSAR?
(3.2) Yes _____ No ☒ A change to procedures as described in the FSAR?
(3.3) Yes _____ No ☒ A test or experiment not described in the FSAR?
(3.4) Yes ☒ No _____ A change to the plant technical specifications
(Appendix A to the Operating License)?

If the answer to any of the above questions is "Yes," complete Item (4) and an FSAR Change Notice. If the answer to all of the above is "No," omit Item (4) and FSAR CN.

- (4) SAFETY EVALUATION - PART B (Justification for Part B answers must be included on Page 2)

- (4.1) Yes _____ No ☒ Will the probability of an accident previously evaluated in the FSAR be increased?
(4.2) Yes _____ No ☒ Will the consequences of an accident previously evaluated in the FSAR be increased?
(4.3) Yes _____ No ☒ May the possibility of an accident which is different than any already evaluated in the FSAR be created?
(4.4) Yes _____ No ☒ Will the probability of a malfunction of equipment important to safety previously evaluated in the FSAR be increased?
(4.5) Yes _____ No ☒ Will the consequences of a malfunction of equipment important to safety previously evaluated in the FSAR be increased?
(4.6) Yes _____ No ☒ May the possibility of a malfunction of equipment important to safety different than any already evaluated in the FSAR be created?
(4.7) Yes _____ No ☒ Will the margin of safety as defined in the bases to any Technical Specification be reduced?

If the answer to any of the above questions is "Yes," an unreviewed safety question is involved.

(5) REMARKS: (Attach additional pages if necessary.)

- (6) PREPARED BY: A. Josephson DATE: 5-5-1981
(7) GROUP SUP: Jane E. Ene DATE: 5-5-81
(8) LIC REVIEW: M. W. Brubaker DATE: 5-5-81
(9) PROJ REVIEW: A. A. Vignoli/Kcf DATE: 5-5-81
(10) PORC REVIEW: _____ DATE: _____
(11) NORB REVIEW: _____ DATE: _____

Changes to the Technical Specifications
Section 3/4.8 Electrical Power Systems.

Unit #2

PCN No. N/A Rev. _____
CN No. N/A Rev. _____

FARLEY NUCLEAR PLANT
NUCLEAR SAFETY EVALUATION CHECK LIST
AH.2 Page 05 of 06

The following provides justification for answers given in Part B of the safety evaluation:

gization, the steady state voltage and frequency of the emergency buses shall be maintained at 4150 ± 400 volts and $60 \pm 1/2$ Hz during this test.

Diesel generator 2C is dedicated to the river water system and is shared between the 2 units of the plant.

The additional time required for DG-2C to energize the Unit #2 loads provides the necessary time for this shared diesel to energize first the Unit #1 loads.

The 24 seconds include the following: 20 seconds delay between the tripping of the tie breaker DG13 and the closing of the Unit #2 DG-2C breaker, 2 seconds to account for the accuracy of the timer, 1 second for the operation of the undervoltage relays sensing the LOSP, and 1 second for the operation of the interposing auxiliary relays, the tripping time of the tie breaker DG13 and closing time of the Unit #2 DG-2C breaker.

The loads permanently connected to the emergency bus 2J are the DG-2C auxiliaries and the lube water booster pumps for the Unit #2 river water pumps.

The 24 seconds delay in energizing the permanently

PREPARED BY: _____ DATE: _____

Changes to the Technical Specifications
Section 3/4.8 Electrical Power Systems
Unit #2

PCN No. N/A Rev. _____
CN No. N/A Rev. _____

FARLEY NUCLEAR PLANT
NUCLEAR SAFETY EVALUATION CHECK LIST
AH. 2 Page 886 of 886

The following provides justification for answers given in Part B of the safety evaluation:

connected loads on bus 2J will not degrade
DG-20 and Unit #2 river water system capability
or the plant safety.

PREPARED BY: _____

Androsfrohm

DATE: _____

5-5-1981