

ATTACHMENT 2
AEP:NRC:0372

8105290364

CHANGE NO.

AEP:NRC:0372

ELECTRICAL POWER SYSTEMS

D.C. DISTRIBUTION - OPERATING

LIMITING CONDITION FOR OPERATION

3.8.2.3 The following D.C. bus trains shall be energized and OPERABLE with tie breakers between bus trains open:

TRAIN AB consisting of 250-volt D.C. bus AB, 250-volt D.C. battery bank AB, and a full capacity charger.

TRAIN CD consisting of 250-volt D.C. bus CD, 250-volt D.C. battery bank CD, and a full capacity charger.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

- a. With 250-volt D.C. bus inoperable, restore the inoperable bus to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.
- b. With one 250-volt D.C. battery and/or its charger inoperable, restore the inoperable battery and/or charger to OPERABLE status within 2 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.8.2.3.1 Each D.C. bus train shall be determined OPERABLE and energized with tie breakers open at least once per 7 days by verifying correct breaker alignment and indicated power availability.

4.8.2.3.2 Each 250-volt battery bank and charger shall be demonstrated OPERABLE:

- a. At least once per 7 days by verifying that:
 1. The electrolyte level of each pilot cell is between the minimum and maximum level indication marks,

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SURVEILLANCE REQUIREMENTS (Continued)

2. The pilot cell specific gravity, corrected to 77°F and full electrolyte level, is ≥ 1.200 ,
 3. The pilot cell voltage is ≥ 2.10 volts, and
 4. The overall battery voltage is ≥ 250 volts.
- b. At least once per 92 days by verifying that:
1. The voltage of each connected cell is ≥ 2.10 volts under float charge and has not decreased more than 0.05 volts from the value observed during the original acceptance test,
 2. The specific gravity, corrected to 70°F and full electrolyte level, of each connected cell is ≥ 1.200 and has not decreased more than 0.03 from the value observed during the previous test, and
 3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.
- c. At least once per 18 months by verifying that:
1. The cells, cell plates and battery racks show no visual indication of physical damage or abnormal deterioration.
 2. The cell-to-cell and terminal connections are clean, tight, and coated with anti-corrosion material.
 3. The battery charger will supply at least 140 amperes at ≥ 250 volts for at least 4 hours.
- d. At least once per 18 months, during shutdown, by verifying that the battery capacity is adequate to supply and maintain in OPERABLE status the emergency loads for the specified times of Table 4.8-1A with the battery charger disconnected. The battery terminal voltage shall be maintained ≥ 210 volts throughout the entire test.
- e. At least once per 60 months, during shutdown, by verifying that the battery capacity is at least 80% of the manufacturer's rating when subjected to a performance discharge test. This performance discharge test shall be performed subsequent to the satisfactory completion of the required battery service test.

TABLE 4.8-1A
BATTERY EMERGENCY LOADS

<u>AB Battery Loads</u>	<u>Minimum Time</u>
1. Channel III static inverter*	3 hrs
2. Channel IV static inverter*	3 hrs
3. Computer static inverter*	3 hrs
4. BOP static inverter*	3 hrs
5. Feed pump turbine 2E oil pump	1 hr
6. Control room emergency lighting	8 hrs
7. Main turbine oil pump "E"	3 hrs
8. Isolation valve control	8 hrs
9. All control circuits	8 hrs
<u>CD Battery Loads</u>	
1. Channel I static inverter*	3 hrs
2. Channel II static inverter*	3 hrs
3. Feed pump turbine 2W oil pump	1 hr
4. Generator seal oil pump	5 hrs
5. Main turbine oil pump "W"	3 hrs
6. Isolation valves	8 hrs
7. Annunciators	8 hrs
8. All control circuits	8 hrs

*AC power sources to the inverters shall be turned off at the start of the test and may be turned on at the end of the specified time interval. Inverters may be left in this operating mode for the duration of the discharge test.

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TABLE 1.2
FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 549 days.
S/U	Prior to each reactor startup.
N.A.	Not applicable.

TABLE 1.2

FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours.
D	At least once per 24 hours.
W	At least once per 7 days.
M	At least once per 31 days
Q	At least once per 92 days.
SA	At least once per 184 days.
R	At least once per 549 days.
S/U.	Prior to each reactor startup.
N.A.	Not applicable.

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POWER DISTRIBUTION LIMITS

ACTION: (Continued)

- c) Surveillance testing of the APDMS may be performed pursuant to Specification 4.3.3.7.1 provided the indicated AFD is maintained within the limits of Figure 3.2-1. A total of 6 hours of operation may be accumulated with the AFD outside of the target band during this testing without penalty deviation.
- b. THERMAL POWER shall not be increased above 90% or $0.9 \times \text{APL}$ (whichever is less) of RATED THERMAL POWER unless the indicated AFD is within the $\pm 5\%$ target band and ACTION.2.a) 1), above has been satisfied.
- c. THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless the indicated AFD has not been outside of the $\pm 5\%$ target band for more than 1 hour penalty deviation cumulative during the previous 24 hours.
- d. During power reductions using control rods, the reporting requirements of Specification 6.9.1.9 shall not apply provided the action items above are satisfied.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The indicated AXIAL FLUX DIFFERENCE shall be determined to be within its limits during POWER OPERATION above 15% of RATED THERMAL POWER by:

- a. Monitoring the indicated AFD for each OPERABLE excore channel:
 - 1. At least once per 7 days when the AFD Monitor Alarm is OPERABLE, and
 - 2. At least once per hour for the first 24 hours after restoring the AFD Monitor Alarm to OPERABLE status.
- b. Monitoring and logging the indicated AXIAL FLUX DIFFERENCE for each OPERABLE excore channel at least once per hour for the first 24 hours and at least once per 30 minutes thereafter, when the AXIAL FLUX DIFFERENCE Monitor Alarm is INOPERABLE. The logged values of the indicated AXIAL FLUX DIFFERENCE shall be assumed to exist during the interval preceding each logging.

POWER DISTRIBUTION LIMITS

ACTION: (Continued)

- c) Surveillance testing of the APDMS may be performed pursuant to Specification 4.3.3.7.1 provided the indicated AFD is maintained within the limits of Figure 3.2-1. A total of 6 hours of operation may be accumulated with the AFD outside of the target band during this testing without penalty deviation.
- b. THERMAL POWER shall not be increased above 81% of RATED THERMAL POWER unless the indicated AFD is within the $\pm 5\%$ target band and ACTION 2.a) 1), above has been satisfied.
- c. THERMAL POWER shall not be increased above 50% of RATED THERMAL POWER unless the indicated AFD has not been outside of the $\pm 5\%$ target band for more than 1 hour penalty deviation cumulative during the previous 24 hours.
- d. During power reductions using control rods, the reporting requirements of Specification 6.9.1.9 shall not apply provided the action items above are satisfied.

SURVEILLANCE REQUIREMENTS

4.2.1.1 The indicated AXIAL FLUX DIFFERENCE shall be determined to be within its limits during POWER OPERATION above 15% of RATED THERMAL POWER by:

- a. Monitoring the indicated AFD for each OPERABLE excore channel:
 - 1. At least once per 7 days when the AFD Monitor Alarm is OPERABLE, and
 - 2. At least once per hour for the first 24 hours after restoring the AFD Monitor Alarm to OPERABLE status.
- b. Monitoring and logging the indicated AXIAL FLUX DIFFERENCE for each OPERABLE excore channel at least once per hour for the first 24 hours and at least once per 30 minutes thereafter, when the AXIAL FLUX DIFFERENCE Monitor Alarm is INOPERABLE. The logged values of the indicated AXIAL FLUX DIFFERENCE shall be assumed to exist during the interval preceding each logging.

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REACTIVITY CONTROL SYSTEMS

CHARGING PUMP - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.3 At least one charging pump in the boron injection flow path required by Specification 3.1.2.1 shall be OPERABLE and capable of being powered from an OPERABLE emergency bus.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no charging pump OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until one charging pump is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.3 At least the above required charging pump shall be demonstrated OPERABLE by verifying, that on recirculation flow, the pump develops a discharge pressure of ≥ 2390 psig when tested pursuant to Specification 4.0.5.

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CONTAINMENT SYSTEMS

CONTAINMENT AIR RECIRCULATION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.6.5.6 Two independent containment air recirculation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment air recirculation system inoperable, restore the inoperable system to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.6 Each containment air recirculation system shall be demonstrated OPERABLE at least once per 3 months on a STAGGERED TEST BASIS by:

- a. Verifying that the return air fan starts on an auto-start signal after a 10 ± 1 minute delay and operates for at least 15 minutes,
- b. Verifying that with the return air fan dampers closed, the fan motor current is 56 ± 10 amps when the fan speed is 880 ± 20 RPM,
- c. Verifying that with the fan off, the return air fan damper opens when a force of ≤ 11 lbs is applied to the counter-weight, and
- d. Verifying that the motor operated valve in the suction line to the containment's lower compartment opens after a 10 ± 1 minute delay.

CONTAINMENT SYSTEMS

CONTAINMENT AIR RECIRCULATION SYSTEMS

LIMITING CONDITION FOR OPERATION

3.6.5.6 Two independent containment air recirculation systems shall be OPERABLE.

APPLICABILITY: MODES 1, 2, 3 and 4.

ACTION:

With one containment air recirculation system inoperable, restore the inoperable system to OPERABLE status within 48 hours or be in at least HOT STANDBY within the next 6 hours and in COLD SHUTDOWN within the following 30 hours.

SURVEILLANCE REQUIREMENTS

4.6.5.6 Each containment air recirculation system shall be demonstrated OPERABLE at least once per 92 days on a STAGGERED TEST BASIS by:

- a. Verifying that the return air fan starts on an auto-start signal after a $10 \pm 0/-1$ minute delay and operates for at least 15 minutes.
- b. Verifying that with the return air fan dampers closed, the fan motor current is 56 ± 10 amps when the fan speed is 880 ± 20 RPM.
- c. Verifying that with the fan off, the return air fan damper opens when a force of ≤ 11 lbs is applied to the counterweight.
- d. Verifying that the motor operated valve in the suction line to the containment's lower compartment opens after a $10 \pm 0/-1$ minute delay.

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REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7. As a minimum, one of the following borated water sources shall be OPERABLE:

a. A boric acid storage system and associated heat tracing with:

1. A minimum contained volume of 835 gallons,
2. Between 20,000 and 22,500 ppm of boron, and
3. A minimum solution temperature of 145°F.

b. The refueling water storage tank with:

1. A minimum contained volume of 9690 gallons,
2. A minimum boron concentration of 1950 ppm, and
3. A minimum solution temperature of 35°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one borated water source is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.7. The above required borated water source shall be demonstrated OPERABLE:

a. At least once per 7 days by:

1. Verifying the boron concentration of the water,
2. Verifying the water level of the tank, and
3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.

b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is < 35°F.

REACTIVITY CONTROL SYSTEMS

BORATED WATER SOURCES - SHUTDOWN

LIMITING CONDITION FOR OPERATION

3.1.2.7 As a minimum, one of the following borated water sources shall be OPERABLE:

- a. A boric acid storage system and associated heat tracing with:
 - 1. A minimum contained borated water volume 835 gallons,
 - 2. Between 20,000 and 22,500 ppm of boron, and
 - 3. A minimum solution temperature of 145°F.
- b. The refueling water storage tank with:
 - 1. A minimum contained borated water volume of 9690 gallons,
 - 2. A minimum boron concentration of 2000 ppm, and
 - 3. A minimum solution temperature of 35°F.

APPLICABILITY: MODES 5 and 6.

ACTION:

With no borated water source OPERABLE, suspend all operations involving CORE ALTERATIONS or positive reactivity changes until at least one borated water source is restored to OPERABLE status.

SURVEILLANCE REQUIREMENTS

4.1.2.7 The above required borated water source shall be demonstrated OPERABLE:

- a. At least once per 7 days by:
 - 1. Verifying the boron concentration of the water,
 - 2. Verifying the contained borated water volume, and
 - 3. Verifying the boric acid storage tank solution temperature when it is the source of borated water.
- b. At least once per 24 hours by verifying the RWST temperature when it is the source of borated water and the outside air temperature is < 35°F.