

## Maintenance Task

PM No.    Title  
**E86**      **SWITCH, AUTOMATIC TRANSFER**

Frequency  
**QUARTERLY**  
**ANNUAL**

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NOTE: RCM PROCEDURE CM-0002 (QUALITATIVE INFRARED TESTING) IS TO BE COMPLETED IN CONJUNCTION WITH THIS MAINTENANCE CHECKLIST. REFER TO OBO RELIABILITY CENTERED MAINTENANCE MANUAL TABLE K-9.

### MAINTENANCE TASK DESCRIPTION:

1. Inspect and clean automatic transfer switch.
2. Test and check electrical wiring.
3. Test start generator to test ATS.

### SPECIAL INSTRUCTIONS:

1. Avoid electrical shock! Turn off electricity before working on the equipment.
2. De-energize, tag, and lock out all power supplies to ensure the power stays off.  
DANGER - CHECK THAT CIRCUITS ARE DEAD BEFORE STARTING WORK. CHECK FOR PRESENCE OF CONTROL VOLTAGES OR VOLTAGE SOURCES OTHER THAN THE PRIMARY POWER SUPPLIES.
3. Schedule outage with operating personnel and affected offices.
4. Follow site safety procedures and your supervisor's instructions.
5. Record and report to your supervisor any equipment damage or deficiencies found during this maintenance task.
6. Record all test results in the component maintenance log.
7. Review manufacturer's operation and maintenance instructions.
8. All tests shall conform to manufacturer's specifications and the appropriate ASTM test procedure and the values used as standards shall conform to the manufacturer's and ANSI standards specifications.

### PROCEDURES: (QUARTERLY)

1. Check switch for any signs of overheating or loose connections.
2. Ensure unit operates smoothly during transfer.

### PROCEDURES: (ANNUAL)

1. Ensure unit is loaded to at least 40% of rated current and perform procedure CM-0002, Qualitative Infrared Thermography. Transfer load to the backup generator and re-accomplish CM-0002 on the generator side of the automatic transfer switch.
2. Open and tag normal and alternate supply breakers.
3. Open doors on automatic transfer switch and check phase-to-phase and phase-to-ground for presence of voltage.
4. Clean inside of switch cubicle, conductors and buss work.
5. Check conductors for signs of overheating, mechanical, or moisture damage to conductors.
6. Torque connections to manufacturer's specifications.
7. Inspect all exposed ground connections. Ensure connections are clean and tight. Treat with corrosion inhibitor.
8. Clean bus insulators.
9. Clean conductors, terminal boards, enclosures, and panels with vacuum cleaner.
10. Ensure heaters (if installed) are working correctly.
11. Lubricate all movements and linkages.
12. Disconnect wires attached to each phase of the normal supply that supplies power to the under-voltage relays. Test the under-voltage relays using a source of test voltage. Record drop-out and pick-up voltages. After testing relays, re-connect wires.
13. Locate and disconnect operating mechanism control wires and, using a remote source of voltage, operate the mechanism.
14. With the mechanism electrically held, use a micro-ohmmeter to check the contact resistance. Make sure the micro-ohmmeter is connected from the normal supply cable connection to the critical load cable connection. Perform the same test on the emergency source.

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15. Re-connect the operating mechanism control wires.
16. Clean indicating lenses and change lamps as needed.
17. Make minor repairs. Contact supervisor if repairs are not possible.  
Note on work order.
18. Perform touchup painting as required.
19. Restore the transfer switch to normal position.
20. Check with affected occupant agencies for generator operations.
21. Remove tags and energize normal supply breaker.
22. Re-accomplish CM-0002 on any problem areas.
23. Remove tags and place generator controls in the automatic position.
24. Open normal power breaker; the generator should start and the transfer switch should transfer.
25. Re-accomplish CM-0002 on any problem areas.
26. Close the normal power breaker; the transfer switch should transfer the load and the generator should shut down after cool down period.
27. Check with the affected occupant agencies to see that normal services have been restored to all areas.

### TOOLS, MATERIALS, AND EQUIPMENT (ANNUAL):

1. Electrician's Tool Set.
2. Micro-ohmmeter.
3. Variable AC voltage source (test cable).
4. AC and DC voltmeter.
5. Lamps.
6. Cleaning equipment and materials.
7. Lubricants
8. Refer to CM-0002 for additional requirements.

### ENGINEER'S NOTES:

1. Record undervoltage relay pickup and dropout voltages.
2. Record contact resistance for each phase on the normal and emergency sides of the transfer switch.