

L I L C O COPY FROM TERMINAL SH10 DATE 83112 TIME 0938373

PM INQUIRY

SECTION SM STARTUP MAINT ACTIVITY PREVENTIVE MAINTENANCE PRIORITY 1
ACTIVITY NO. 1R22*180SWG-102 -0003 PROCEDURE NO. 32.050.02 A/1 A
EQUIPMENT NAME 4160 V SWITCHGEAR LOCATION TB-025
ACTIVITY DESCRIPTION SWITCHGEAR VISUAL INSPECTION FOR CLEANLINESS, ELECTRICAL A
ID MECHANICAL DEGRADATION
RELATED ACTIVITIES

REFERENCES GEH 1802
FREQUENCY 0060 LAST PERFORMED 01/14/81 DUE 08/11/83 EXTENSION 11/02/84
EST. MAN HOURS 0000.4 SKILL CONDITION CODES 6, , , ,
MWR REQD Y RWP REQD Y W.E. AUTH. REQD Y
SPECIAL REQUIREMENTS SWITCHGEAR DE-ENERGIZED. INSPECTION IS TO DETERMINE MAINT.
REQUIREMENTS PER GEH 1802, CONTACT THE TEST ENGINEER/LEAD ELECTRICAL TEST ENGIN
FER.

LAST COMPLETION DATA ENTERED:
LEADMAN TIME 0000 DATE 08/09/82 TOTAL MANHOURS EXPENDED
COMPLETED NORMAL-0 DEFERRED-1 INCOMPLETE-2 ADVANCED-3 OTHER-4 CODE 4
ADVANCED TO/DEFERRED UNTIL / / COMMENTS DEFER ACTIVITY AND CHANGE FREQ
JENCY TO FIVE YEARS AS PER F. RODRIGUES

HIT ENTER TO CONTINUE INQUIRY MODE OR TYPE END AND HIT ENTER TO CANCEL.

Submitted: R. L. L. L.
Reviewed/QQA Engr. J. J. L. L.
Approved/Plant Mgr. J. J. L. L.

MC-1

SP Number 32.050.02
Revision 2
Date Eff. 2/1/83
TPC _____
TPC _____
TPC _____

4160V METAL ENCLOSED SWITCHGEAR - GENERAL MAINTENANCE

1.0 PURPOSE

To provide maintenance personnel with instructions for the inspection and maintenance of the 4160V metal enclosed switchgear.

2.0 RESPONSIBILITY

The Maintenance Engineer shall be responsible for the proper implementation of this procedure.

INFORMATION COPY

PPF1021.300-6.421

JAN 31 1983

3.0 DISCUSSION

3.1 Metal enclosed switchgear is equipment used to control and protect various types of electrical apparatus and power circuits. The switchgear consists of one or more units which are mounted side by side and connected mechanically or electrically together to form a complete unit.

3.2 The following topics are contained in this procedure:

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8.1	Buswork Checkout	2
8.2	Cubicle Checkout	3

Appendix 12.1 - Bolt Torque Values for Metal Clad Switchgear (GE)

4.0 PRECAUTIONS

- 4.1 Insure that the switchgear has been properly taken out of service.
- 4.2 Do not use air to blow dust or dirt from the switchgear.
- 4.3 Do not remove tape from bolted bus bar connections for the purpose of checking the torque of those bolts.

5.0 PREREQUISITES

- 5.1 Station Equipment Clearance Permit, SP 12.011.01.
- 5.2 Maintenance Work Request, -SP 12.013.01.
- 5.3 Calibrated test equipment shall not have exceeded its calibration due date.

6.0 LIMITATIONS AND ACTIONS

N/A

7.0 MATERIALS OR TEST EQUIPMENT

- 7.1 Voltmeter to detect 4160 volts
- 7.2 Torque Wrench, 0-100 foot-pound
- 7.3 Ground cables
- 7.4 Cleaning material
- 7.5 Electrical testing equipment per SP 32.009.01, Insulation Resistance Test of Auxiliary Electrical Equipment.
- 7.6 Ductor Tester
- 7.7 GE D50H15 Lubricant or equivalent

7.8 GE Yellow joint compound D50H109 or equivalent

8.0 PROCEDURE

8.1 Buswork Checkout

- 8.1.1 Open hinged panels and remove bolted panels to gain access to bus connections.
- 8.1.2 Insure that all three phases of the switchgear are deenergized by using voltage testing equipment.
- 8.1.3 Apply ground cable from each phase to ground.
- 8.1.4 Clean all exposed buswork and insulators with a clean dry cloth in accordance with Reference 11.1 page 20.
- 8.1.5 Remove dust, dirt and loose debris with a vacuum or manual cleaning.
- 8.1.6 Check the switchgear and ground bus connections for proper torque per Appendix 12.1.
- 8.1.7 Apply a light coating of GE yellow joint compound D50H109 or equivalent to all torqued connections.
- 8.1.8 Remove the boot insulators from the main bus joints per Reference 11.1 page 21, Figure 25A.
- 8.1.9 Visually inspect for burned, heat affected or corroded areas.
- 8.1.10 Verify the torque values of the main bus bolts per Appendix 12.1.
- 8.1.11 Perform a Ductor test on each phase per SP 32.009.01, Insulation Resistance Test of Auxiliary Electrical Equipment.
- 8.1.12 Re-install the boot insulators.
- 8.1.13 Inspect doors, panels and fittings for proper fit and tightness.
- 8.1.14 Remove the grounds unless cubicles are to be checked.
- 8.1.15 Reinstall the hinged and bolted panels.

8.2 Cubicle Checkout

- 8.2.1 Insure that all three phases of the switchgear are deenergized by using voltage testing equipment.
- 8.2.2 Apply ground cables from each phase to ground unless already applied.

- 8.2.3 Visually inspect each cubicle for broken or missing parts.
- 8.2.4 Inspect each cubicle door handle and latching mechanism for proper alignment and latching.
- 8.2.5 Vacuum clean each cubicle for dust, dirt or debris.
- 8.2.6 Ensure that bolted connections, nuts and screws are tight.
- 8.2.7 Ensure that cable connections are tight and supported.
- 8.2.8 Visually inspect control wiring for signs of wear, burns or heat affected areas.
- 8.2.9 Clean elevating mechanism and lubricate jack screws and gears with G.E. #D50H15 or other suitable lubricant.
- 8.2.10 Remove ground cables.
- 8.2.11 Reinstall all hinged and bolted panels.

9.0 ACCEPTANCE CRITERIA

- 9.1 The switchgear and cubicles visually clean of dirt or debris.

10.0 FINAL CONDITIONS

- 10.1 Main bus bolts torqued according to Appendix 12.1.
- 10.2 All grounds removed.
- 10.3 Return Master Hold Off to NSO.
- 10.4 Maintenance Work Request Submitted to repair broken or missing parts and replace worn or heat affected wiring.
- 10.5 Maintenance History Form SPF 31.002.01-53D complete and submitted to Maintenance Engineer for review.

11.0 REFERENCES

- 11.1 General Electric Co., Switchgear Equipment G008.180.02.

12.0 APPENDICES

- 12.1 Torque Value Chart.

APPENDIX 12.1BOLT TORQUE VALUES FOR
METAL-CLAD SWITCHGEAR (GE)

BOLT SIZE	TORQUE FOOT POUNDS	MATERIAL
3/8" - 16	15	STEEL
1/2" - 13	30	COPPER
5/8" - 11	35	ALUMINUM ALLOY