

5. Accessories to transfer switches; All automatic load transfer switches shall include the following accessories:
 - a. Engine starting contacts to provide for generator starting from each unit independent of the other.
 - b. Full phase protection. Three phase relays shall be field adjustable, close differential type with 92-95% pickup and 82-85% drop out. Relays are to be connected across live lines.
 - c. Test switch, to simulate a power outage.
 - d. Adjustable time delay on engine starting to over-ride momentary outages and nuisance voltage dips.
 - e. Adjustable time delay on transfer of load to emergency source. Adjustable time delay to open transfer switch contact to allow motor loads to decay.
 - f. Adjustable time delay on retransfer to load to normal with 5 minute cool-down timer wherein the generator set runs unloaded after transfer to line.
 - g. Plant exerciser to start and run the generator set with or without load each 168 hours for a 30 minute interval. Selector switch will be provided for with load or without load testing.
 - h. One auxiliary contact closed on emergency and one auxiliary contact open on emergency.
 - i. Pilot lights to indicate the normal and emergency position of the transfer switch.
 - j. Isolated (ungrounded neutral bar).
 - k. Disconnect plug.
 - l. Time delay neutral, programmed transition, or in phase monitor.

- J. Annunciator Panel: A flush recessed panel shall be provided for remote mounting as shown on the drawings to give audible and visual warning of fault or alarm conditions in the generator set. Wiring shall be as required by the system manufacturer. The panel shall conform with the requirements of the National Electrical Code, Section 700-12, and the National Fire Protection Associates publication, NFPA No. 110-3-5.5.1, Level One. Fuel tank leak detection status shall be indicated on the annunciator.

- K. Transient voltage surge protection shall be provided protecting all low voltage circuits serving the transfer switch and the annunciator.

- L. Provide one (1) remote emergency power off button and signage for such. Locate in Main Electrical Room as shown on plans. Contractor to connect such to generator.

1.06

MANUFACTURING

- A. The engine, including engine block, oil pan, and cylinder heads, generator and all major items of auxiliary equipment shall be manufactured in the U. S. by manufacturers currently engaged in the production of such equipment.