610C POWER PLANT
OPERATING METHODS

1. GENERAL

1.01 This section describes the operation of the 610C power plant.

1.02 The 610C power plant is a small, relay-rack mounted power plant which provides negative 24-volt battery from a −48 volt battery input and is intended to eliminate the need of a separate 24-volt battery where only a small amount of 24-volt power is required. Initial applications include its use in No. 5 crossbar and with V4 telephone repeaters.

1.03 Routine checks are intended to detect defects and insofar as possible to guard against circuit failures liable to interfere with service. Checks and adjustments other than those required by trouble conditions should be made during a period when they will cause the least reaction to service.

1.04 The instructions are based on SD-81505-01. For a detailed description of the operation, see the corresponding circuit description.

1.05 Reference should be made to the standard index of BSPs for maintenance of the apparatus used in this equipment. All relays and other apparatus should be adjusted, when required, in accordance with these sections and the circuit requirement tables on the circuit drawings.

2. OPERATION

Description

2.01 The 610C power plant consists of either a single dc to dc converter or duplicate dc to dc converters equipped with an automatic load transfer circuit to switch the load to the spare converter if the regular converter fails.

2.02 In the automatic load transfer circuit, a MAN TRANS button is provided to manually transfer the load from the regular converter to the spare converter. Also, a RST button is provided to transfer the load from the spare converter back to the regular converter.

2.03 An NV alarm is provided to indicate failure of a converter. Where a single converter is used, failure of the converter will cause a major alarm. Where duplicate converters are used, failure of either converter will cause a minor alarm and failure of both converters will cause a major alarm.

Preparing to Start Initially

2.04 Before putting the plant in service check that:

(a) All external connections are made in accordance with the SD- drawings covering the circuits associated with the plant.

(b) The proper size fuses are in place.

(c) The RST button if provided has been momentarily depressed and released.

Initial Adjustments

2.05 The power plant has no disconnect switches and is connected to both the central office battery and the load when the associated fuses are in place. If it is necessary to take the plant out of service, remove the battery fuses. To restart, remount the fuses.

2.06 Since the operation of this plant is entirely automatic and no voltage regulation is provided, no initial adjustments are required.

3. ROUTINE CHECKS

NV Alarm

3.01 Periodically check the NV alarm as covered in 3.02 for a single converter or as covered in 3.03 for duplicate converters.

3.02 ***Single Converter:*** Remove the OUTPUT fuse from the converter. The NV lamp should light and a major alarm should operate.

Remount the fuse. The alarm should be retired and the NV lamp should be extinguished.

Note: Performing this check will interrupt the voltage supply to the load and therefore should be done when it will cause the least reaction to service.

3.03 ***Duplicate Converters***

(a) Remove the OUTPUT fuse from converter 1. The NV lamp of converter 1 should light, the TRANS lamp should light, and a minor alarm should operate. The load is transferred to converter 2.

(b) Replace the OUTPUT fuse of converter 1. The NV lamp of converter 1 should be extinguished and the alarm retired.

(c) Momentarily press and release the RST button. The TRANS lamp should be extinguished. The load is transferred back to converter 1.

(d) Remove the OUTPUT fuse from converter 2. The NV lamp of converter 2 should light and a minor alarm should operate.

(e) Block the NV relay of converter 2 nonoperated, remount the OUTPUT fuse of converter 2, and momentarily press and release the MAN TRANS button. A major alarm should operate.

(f) Momentarily press and release the RST button. The major alarm should be retired.

(g) Remove the block from the NV relay of converter 2. The NV lamp of converter 2 should be extinguished and the minor alarm should be retired.

4. TROUBLES

4.01 In general, the only items likely to become defective with use are the electrolytic capacitors and semiconductor devices.

4.02 If trouble develops, check the possible causes in the order given below. If the trouble is not apparent, check for loose or open connections or short circuits due to foreign matter lying across wiring terminals. If the trouble cannot be determined from the possible causes listed below, it is advisable to check all resistors for the resistance values shown on SD-81505-01.

TROUBLE	POSSIBLE CAUSE
(a) No output voltage	Battery not connected
	Blown fuses
	Defective capacitors
	Failure of semiconductor devices
(b) Low output voltage	Damaged capacitors
	Failure of semiconductor devices
(c) High output voltage	Failure of semiconductor devices