

## POWER PLANT 610D (J86807) OPERATING METHODS

### 1. GENERAL

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

1.02 The 610D power plant provides a positive 48-volt, 1- or 1-1/2 ampere dc power supply from a negative 48-volt dc central office battery. The plant is used initially to provide tripping battery supply.

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 service reaction.

1.04 The instructions are based on SD-81571-01. 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 requirements tables on the circuit drawings.

### 2. OPERATION

#### Description

2.01 The 610D power plant is a small, relay-rack mounted plant having an optional output current capacity of 1 or 1-1/2 amperes. It consists of a negative 48-volt to positive 48-volt dc-to-dc transistor converter circuit. The converter circuit includes a no-voltage alarm circuit to indicate failure of the plant.

2.02 The converter circuit is designed to permit parallel operation of two 610D plants. The paralleled plants have an output current capacity of 1 or 1-1/2 amperes and operate simul-

taneously to share the connected load. If one of the plants fails to function, the other plant will automatically increase its current output to carry the entire load.

2.03 Where only a single plant is provided, failure of the plant will cause a major alarm. Where paralleled plants are provided, failure of either plant will cause a minor alarm and failure of both plants 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.

#### 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 plant or as covered in 3.03 for paralleled plants.

**Caution: Do not attempt to check the alarm by applying voltage to the fuse as dangerous and destructive damage may occur.**

**3.02 Single Plant:** Remove the F1 fuse. This should cause the NV lamp to light and the major alarm to sound. Remount the fuse.

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

**3.03 Paralleled Plants**

(a) Remove the F1 fuse in either one of the plants. This should cause the associated NV lamp to light and the minor alarm to sound. Remount the fuse. Similarly check the alarm for the other plant.

(b) Block unoperated the NV relay in either one of the plants. This should cause the associated NV lamp to light and the minor alarm to sound without interrupting the voltage supply to the load. Then remove the F1 fuse in the other plant. This should cause the associated NV lamp to light and the major alarm to sound. Remount the fuse and remove the block.

**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-81571-01.

TROUBLE	POSSIBLE CAUSE
(a) No output voltage	Battery not connected Broken leads Blown fuses Defective fuse mounting Defective capacitors Failure of semiconductor devices
(b) Low output voltage	Damaged capacitors Failure of semiconductor devices