

## POWER FAILURE ROUTINE

### OPERATING METHODS

#### 1. GENERAL

**1.01** This section describes in a general way the procedure to be followed in case of a failure of the commercial power service. Because of the great differences in plants and in conditions, this section may often be used most advantageously as a reference or guide when preparing information for the individual office.

**1.02** This section is reissued to revise the format of the section and to reflect modern conditions and plant references. Since this reissue covers a general revision, arrows ordinarily used to indicate changes have been omitted. This issue does not affect the Equipment Test List.

#### **1.03** *Establish A Method of Procedure (MOP)*

(a) A local routine is established for each office and employees are trained thoroughly in each step of power plant operation during power failure. Presumably this routine will also set forth the proper sequence of action to incur the least service reaction.

(b) An up-to-date list of all persons and phone numbers required during power failure is available.

(c) Where no permanent engine set is installed, a list of portable reserve engine-driven sets is available and the steps are outlined in detail for obtaining those required during emergencies. Connecting arrangements and sketches should be prepared in detail.

#### **1.04** *Method of Procedures*

(a) Auto-Start Engine-Alternator Procedures

(b) Manually Operated Engine-Alternator Procedures

#### 2. OPERATION DURING POWER FAILURE

#### **2.01** *Operations Common to All Types of Power Plants*

- (a) Determine adequacy of emergency dc lighting
- (b) Verify transfer and tones of ringing supply
- (c) Retire alarms
- (d) Determine cause of service interruption.

(1) Find out from the power company the cause of the interruption and how soon service will be restored. Note this information on a log.

(2) Notify the proper supervisors as soon as practicable giving all known facts.

(e) **Emergency Cells:** If emergency cells are provided to maintain voltage during power failure and these cells are not switched automatically, manually switch the cells as needed to maintain minimum required voltage limits.

(f) **Emergency Power Plant Operation:** If the power company does not provide power restoration after interruption within the time locally agreed on or if, although promised, power has not actually been restored on either regular or reserve circuits, proceed as in 2.02.

#### **2.02** *Offices With Emergency Engines*

(a) **Automatic:** Verify proper transfer.

(b) **Manual:** After suitable delay, verify actual power failure.

**Note:** Observe for overloads on the alternator. In such cases, it may be necessary to begin removing some of the load. Set up local information to shut down such items as extra lights, elevators, air conditioning, etc.

(c) When connecting motor loads to a manual engine-driven alternator or generator, start all motors or sets required in the sequence of the largest to the smallest; then apply the load in the same sequence. (With generators of the

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same rating, start first the one with the motor having the highest current rating.) This is done so that the large starting current inrush will occur at a time when the machine is not already loaded sufficiently for the starting load to pull the voltage down to a point where low voltage trips will operate. For this reason it may be necessary to stop some machines if subsequent load conditions make it necessary to start another of the large machines.

### 3. OPERATION AFTER POWER RESTORATION

**3.01 Power Restoration:** Commercial power returns to normal and remains normal for approximately 15 minutes.

**3.02 Transfer Back:** If the plant is not automatically transferred back to regular power service, make the transfer manually. Shut down in the usual manner any engine-driven set unless it is a dc generator that is to be used to recharge batteries.

### 3.03 Operations Common to All Types of Power Plants

- (a) **Ringing Supply:** If transfer back to the regular power is not done automatically, make this transfer manually in the usual manner.
- (b) **Master Switch:** In some dial offices the master switch must be reset manually after power restoration (panel only).
- (c) **Alarms:** Restore to normal any alarms that have been operated.
- (d) **Batteries:** If the plant permits, give the batteries an equalizing charge in the regular manner if they have been discharged 10 percent or more. Emergency cells provided with some plants must be recharged manually.
- (e) **Reports:** Make any reports required by local instructions.