

## POWER PLANT LOAD CURRENT AMMETER CALIBRATION PROCEDURE

### 1. GENERAL

**1.01** This section describes a procedure for calibration of load current ammeters, when no method is included in the operating or maintenance practice for a given power plant.

**1.02** (Reserved for future use.)

**1.03** Power plant load current ammeters should be calibrated periodically in accordance with the Equipment Test List.

**1.04** The power plant should be in operation and serving a normal load when performing the ammeter calibration. The meter gives an indication of plant load and should be calibrated at normal operating range rather than zero current.

### 2. TEST APPARATUS

**2.01** Use a Data Precision Model 248 Digital Multimeter (or equivalent, with millivolt capability).

### 3. AMMETER CALIBRATION

**3.01** Determine the power plant shunt amperage rating. Typical values would be 200 to 10,000 amperes.

**3.02** Determine the millivolt (mv) value for full scale deflection of the ammeter pointer by looking at lower portion of the meter face. A typical notation would be; F.S. = 50 mv (full scale deflection requires 50 mv).

**3.03** Locate the (+) and (-) terminals on the ammeter. Set the Digital Multimeter (Data Precision model 248 or equivalent) to the 10-volt DC setting, which will provide a display to four decimal places. Attach the multimeter test leads to the

ammeter terminals and note the reading and convert to millivolts. Remove multimeter connections.

**3.04** To calculate the actual load current of the power plant apply this formula:

$$\frac{\text{Power Plant Shunt Amperage Rating}}{\text{Millivolt Value For Full Scale Deflection Of Ammeter}} \times \text{Millivolt Reading Of Digital Multimeter} = \text{Load Current In Amperes}$$

**3.05** In effect the formula states: Determine the ratio of amperes to millivolts for the ammeter and then multiply this factor by the multimeter reading (also in millivolts). The resultant is the equivalent ampere load value.

**3.06** The following example illustrates the application of this formula:

(a) A power plant has a current rating of 0-1000 amperes. On the lower edge of the ammeter face is the rating for full scale deflection of the needle; F.S. = 50 mv.

(b) A digital multimeter connected across the ammeter's terminals indicates .025 (25 mv).

(c) Insert this information into the formula:

$$\frac{1000 \text{ amps}}{50 \text{ mv}} \times 25 \text{ mv} = \text{Load Current}$$

$$20 \text{ amps/mv} \times 25 \text{ mv} = \text{Load Current} = 500 \text{ amperes}$$

**3.07** Set up and solve the formula with values from the power plant being checked.

**3.08** Compare the actual ammeter indication with the resultant of the calculations.

**3.09** If the ammeter reading differs (is incorrect), use the zero adjust screw to calibrate (correct the reading).

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