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ISSUE 1
APPENDIX 1D
DWG ISSUE 2D
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3

ELECTRONIC SWITCHING SYSTEMS

NO. 3

AC POWER DISTRIBUTION
CIRCUIT

CHANGES

D. Description of Changes

D.1 Made minor drawing corrections.

D.2 Added figures showing typical ac surge protection circuit.

D.3 Added a new figure to show overall view of ac raceway in a typical office.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5343-JHJ-MTS

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ELECTRONIC SWITCHING SYSTEMS

NO. 3

AC POWER DISTRIBUTING CIRCUIT

SECTION I - GENERAL DESCRIPTION

1. PURPOSE OF CIRCUIT

1.01 This circuit provides the distribution for both the protected and essential ac power between the service entrance panel and the No. 3 ESS switchroom equipment. Load isolating fuses are included in the service entrance panel circuit and consequently are not a part of this circuit.

1.02 Protected ac is defined as that ac power provided by the emergency ac power supply circuit.

1.03 Essential ac is defined as that ac power supplied by emergency engine-alternator.

2. GENERAL DESCRIPTION OF OPERATION

2.01 This circuit has been designed to supply ac power to all loads anticipated for No. 3 ESS.

SECTION II - DETAILED DESCRIPTION

1. PROTECTED-AC DISTRIBUTION

1.01 Recommended load distributions are shown in Information Notes 301 and 303.

2. ESSENTIAL-AC DISTRIBUTION

2.01 Essential-ac feeder cables connect to central-office primary ac power via the ac distribution circuit. Wire sizes should be chosen to give a maximum loop drop of 1 volt at 5 amperes of load current.

SECTION III - REFERENCE DATA

1. WORKING LIMITS

1.01 The 120 V nominal ac-voltage limits are 110-volts minimum to 125-volts maximum.

1.02 AC input voltage range for the 208/240 V ac single-phase rectifiers is:

(a) 208 V input - 186 MIN. to 221 MAX.

(b) 240 V input - 216 MIN. to 253 MAX.

1.03 The temperature limits are 32°F to 115°F.

2. FUNCTIONAL DESIGNATIONS

2.01 None.

3. FUNCTIONS

3.01 This drawing provides a distribution circuit for all No. 3 ESS protected and essential ac power used in the switchroom equipment.

4. CONNECTING CIRCUITS

4.01 When this circuit is listed on a key sheet, the connecting information thereon is to be followed.

(a) Lighting and Appliance Outlets - ED-1A157-72.

(b) Grounding Methods and Requirements - ED-3H150-01.

(c) Hardware, Assembly, and Wiring for AC Power and Lighting - ED-3H151-30.

(d) LPCDF Equipment Typical - ED-3H159-01.

(e) Charge and Discharge Circuit - SD-82304-01.

4.02 The following is a list of circuits requiring protected ac power.

(a) TTY - Maintenance Frame Circuit - SD-1C912-01.

(b) 7A Announcement Set on M00 - Miscellaneous Frame Circuit - SD-3H903-01.

5. MANUFACTURING TESTING REQUIREMENTS

Intermediate Requirements

5.01 None.

End Requirements

5.02 This circuit should be tested to verify that it is wired in accordance with the schematic and wiring drawings, that the requirements of the circuit requirements table are met, and that the circuit is capable of performing all functions stated in this circuit description.

6. TAKING EQUIPMENT OUT OF SERVICE

6.01 Removing the ac power distributing circuit from service requires interruption of all essential ac power to ESS switchroom equipment except for loads on the protected ac power which derives input from the -48 V dc power plant.

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