

DISPOSITION OF CURRENT SUPPLY LEADS
AND APPLICATION OF FUSES

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1. GENERAL

1.1 Scope of Section

1.11 This section covers the requirements and methods applicable to the disposition of current supply leads at fuse panels on miscellaneous fuse bays, on equipment frames and bays, and on power plant bays and battery distributing fuse boards. The requirements applicable to the use of regular and dummy fuses associated with equipped circuits, unequipped circuits, and unequipped circuit features are also included.

NOTE: The methods of installing regular and dummy fuses and associated requirements are covered in Handbook 30, Section 32CU.

1.2 Precautions

1.21 Precautions to be taken against personal injury, equipment damage, and service interruptions are covered in Handbook 0 and they are to be observed at all times, as they apply to the operations being performed. Specific precautions, when applicable, are included in this section with the associated method.

1.3 Verification

1.31 Items for the verification of equipment installed by the operations covered in this section are listed in PAR. 4.

1.4 Description of Terms

1.41 The following list provides a description of terms as applied to requirements listed in this section:

Current Supply Lead - A lead used to supply battery, ringing current, etc., from miscellaneous fuse panels, or bay or frame fuse panels to transmission or switching equipment. Power supply feeders to battery distributing fuse boards, miscellaneous fuse panels, and bay or frame fuse panels are not included in the application of this term.

Unequipped Circuit - A circuit (listed on wiring lists as wired only) on which all or part of the apparatus necessary to permit the circuit to function is not initially provided.

Unequipped Circuit Feature - That part of an equipped circuit on which all or part of the apparatus necessary to establish an operational arrangement is not provided.

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2. CURRENT SUPPLY LEADS (EXCEPT POWER PLANT BAYS)

2.1 Unequipped Circuits

2.11 Prior to December, 1975, the term "Wired Only" (WO) was used on fuse bay drawings to indicate that the current supply leads had not been connected but were formed out to the individual fuse positions, then folded back and secured to the form for future termination. Any current supply lead presently shown as (WO) on these drawings shall not be changed, unless of course the lead is being placed into service.

2.12 Where current supply leads are furnished in a switchboard cable to a Fuse Bay (FB) or a Power, Ring and Tone Distribution (PRTD) frame, and the apparatus location at the equipment frame is unequipped, the current supply leads shall be treated in the following manner:

- A. The current supply leads and the associated ground leads shall be connected to the fuse post or resistance lamp and the associated ground bar terminals.
- B. A dummy fuse shall be inserted into the Wire Terminated (WT) fuse positions.
- C. Where (70) Type Fuses are to be employed, the proper designation pins shall be installed in place.
- D. The FB or PRTD frame fuse panel drawing shall indicate (WT) at the fuse or resistance lamp position.
- E. The current supply leads at the unequipped apparatus location shall be individually protected (taped or sleeved) and either tied back to the form at the future apparatus location or tubed and secured to the main form at the future equipment position.

2.13 Where fuse positions have been local wired and terminated at the equipment terminal strip, connector, etc. by the shop, dummy fuses along with the proper designation pins (where 70 type fuses are employed) shall be installed in place.

2.14 When a connectorized cable carrying current supply leads is furnished for future equipment locations, the dummy fuse(s) along with the proper designation pin(s) (where 70 type fuses are employed) shall be installed in place. The connectorized end of the cable at the unequipped location shall be protected with a plastic cap (usually furnished with the connector) or two layers of PVC tape covering the open end of the connector.

2.15 Non-ESS Plug-In Type Equipment -
Where the individual positions of a plug-in shelf have been completely wired by either the shop or the field and the fuse panel furnishing the current supply to these positions is in the same bay. The fuse leads should be connected and dummy fuses along with the proper designation pins (where 70 type fuses are employed) should be installed in place, refer to PAR. 2.312 and Table "A" for fuse bay applications.

2.16 ESS Fuse Panels shall employ the following procedures:

- A. Fuse panels that specify the equipping of spare circuit fuses in the fuse panel "J" drawing stocklist, shall remain equipped and shall not be removed and replaced with 72A Dummy Fuses.
- B. All fuse panels will specify a 72A Dummy Fuse in unequipped positions as a means of retaining the fuse caps in position.
- C. When fuse panels are received in the field without fuses or dummy fuses in all positions, the field shall check the associated drawings, equip fuses or dummy fuses as required and issue a shop complaint to the manufacturing location.

2.2 Unequipped Circuit Features

2.21 When current supply cable leads from a FB or PRTD frame services a partially equipped circuit with unequipped apparatus for a particular circuit feature, the current supply cable leads shall be treated as described in PAR. 2.12.

2.22 When working circuit features are removed from service and the associated apparatus has been disconnected or removed, the current supply leads at the fuse positions shall be left connected, dummy fuse inserted in place of the fuse, designation pin left in place (where 70 type fuses are employed) and the disconnected current supply lead insulated at the equipment location, unless otherwise directed by specification, drawing or an Operating Company directive.

2.23 When equipped circuit features are not put into service initially or are removed from service and the associated wiring and apparatus remains intact, the current supply leads shall not be disconnected at the fuse panel and the associated fuses shall not be removed unless authorized by the Operating Company. When so authorized, they shall be replaced with dummy fuses and the designation pins shall remain in place where 70 type fuses are employed.

2.3 Equipped Circuits

2.31 When equipped and fully wired circuits are turned over to the Operating Company ready for service, they shall have the proper fuses and designation pins installed in place except for the following conditions:

2.311 Where wire and equipped circuits are not placed into service initially or have been in service and then made "spare", the current supply leads feeding these circuits shall be left connected at the fuse panel and the fuse and designation pin left in place. Any deviation from this practice should be covered in the job specification, job drawing, or specifically authorized by the Operating Company. When so authorized, the fuses shall be removed and replaced with dummy fuses. Where 70 type fuses are employed, the designation pins shall remain in place.

2.312 Where plug-in type equipment has been completely wired and the plug-in units are not installed in place, the current supply leads shall be connected at the fuse positions, designation pins installed in place, and either regular or dummy fuses installed. The fuse panel drawing should indicate that either a fuse or dummy fuse is required, however, if the drawing does not provide this information, refer to Table A for the acceptable practice.

TYPE OF EQUIPMENT	FUSE TYPE TO BE INSTALLED
"L" Carrier	Regular
"N" Carrier	"
"O" Carrier	"
"ON" Carrier	"
43A1 Telegraph	"
E2, E3, E6 Repeaters	"
Single Freq. Sig. (E-type)	"
Single Freq. Sig. (Electron Tube)	Dummy
V3 Repeaters	"
DDT/DDR Circuits (SD-1G000-01)	"
Trouble Det. Bay (DS-1G0004-01)	"
ESS Systems	Note 2
T1 Carrier - D-Type Channels	Note 1

NOTES:

1. Refer to Handbook 219, Section 801 thru 813.
2. Refer to PAR. 2.16.

TABLE A: (PAR. 2.15)

3. CURRENT SUPPLY LEADS ON POWER PLANT BAYS

3.1 Leads Serving Unequipped Relay Positions

3.11 On power plant bays (J80000 to J89999 specification drawings) when the relay equipment is located on the same bay as the associated fuses, the fuse leads serving unequipped relays shall be connected at the fuse posts. Omit the regular fuses and equip the fuse locations with dummy fuses and designation pins where 70 Type Fuses are employed.

NOTE: This is an exception to the common requirement because the hazards of placing unconnected

leads in service at some later date, while working in the vicinity of power plant bus bars, are considered to be greater than the possible hazards due to failure to place dummy fuses at the unequipped fuse positions.

3.2 Wiring for Alarm Fuses

3.21 On power plant bays or battery distributing panels, wiring for alarm fuses that are wired in parallel with unequipped charge or discharge fuses (generally of cartridge type) shall be connected at the alarm fuse posts when the alarm fuse wiring is connected at the main charge or discharge fuse studs or feeder bus bars.

4. VERIFICATION

Verification Items and Brief Statement Of Requirements	Reference	
	Paragraph No.	Figure No.
4.1 Current Supply Leads (Except Power Plant Bays)		
4.11 <u>Unequipped Circuits</u>	2.1	
4.111 Any Present Current Supply Lead Shown As (WO) on Drawing Should Not be Changed Unless Being Put Into Service	2.11	
4.112 Current Supply Leads Cabled to FB or PRTD Frames Treated as Follows:	2.12	
A) Current Supply and Associated Ground Leads Connected at Fuse or Resistance Lamp Position and Ground Bar Location.	2.12A	
B) Dummy Fuse Inserted Into (WT) Fuse Positions	2.12B	
C) Designation Pins Installed Where 70 Type Fuses Are to be Employed	2.12C	
D) FB or PRTD Drawings to Indicate (WT)	2.12D	
E) Current Supply Leads at Unequipped Apparatus Locations Individually Protected	2.12E	
4.113 Current Supply Leads Local Wired (Shop or Field) - Install Dummy Fuses and Designation Pins	2.13	
4.114 Connectorized Cable Furnishing Current Supply For Future Equipment Location - Install Dummy Fuses and Designation Pins, Protect Connectors with PVC Caps or PVC Tape	2.14	
4.115 Non-ESS Plug-In Equipment - When Completely Wired (Shop or Field) and the Fuse Panels are in the Same Bay - Connect Fuse Leads, Install Dummy Fuses and Designation Pins for FB or PRTD Frames, See Table A.	2.15	Table A

Verification Items and Brief Statement of Requirements	Reference	
	Paragraph Number	Figure Number
4.116 ESS Fuse Panel Applications	2.16	
A) Fuses or Dummy Fuses Remain as Specified in "J" Drawing Stocklist for Spare Circuits	2.16A	
B) Unequipped Positions - Use 72A Dummy Fuse as Means of Retaining Caps	2.16B	
C) When Fuse Panels are Received Without Either Fuse or Dummy Fuse - Check Drawing and Equip as Required	2.16C	
4.12 <u>Unequipped Circuit Features</u>	2.2	
4.121 Partially Equipped Circuits Being Fed from FB or PRTD Frames - Same As Verification Items 4.112A thru E	2.21	
4.122 When Circuit Features are Removed From Service and Disconnected or Apparatus is Removed - Leave Leads Connected, Designation Pins Left In Place, Dummy Fuses Installed, and Current Supply Leads at Equipment Location Protected Unless Otherwise Directed By Job Spec, Drawing or Operating Company.	2.22	
4.123 When Equipped Circuit Features are not Put Into Service or Later Removed from Service and Apparatus Remains Intact - Current Supply Leads Connected, Fuses and Designation Pins Left in Place Unless Otherwise Authorized.	2.23	
4.13 <u>Equipped Circuits</u>	2.3	
4.131 Equipped and Wired Circuits Ready for Service - Fuses and Designations Installed in Place: Except for the Following.	2.31	
4.1311 When not Initially Placed in Service or have been made Spare the Same as Verification Item 4.131 unless Job Spec, Job Drawing or Operating Company Authorizes Deviation.	2.311	
4.1312 Plug-In Units Completely Wired but Units Not Installed - Leads Connected, Fuses and Designation Pins in Place as Indicated on Fuse Panel Drawing. - If not Indicated in the Job Drawing, Refer to Table A.	2.312	Table A
4.2 Current Supply Leads on Power Plant Bays.		
4.21 Leads Serving Unequipped Relay Positions		
4.211 On Same Bay as Associated Fuses	3.11	
A) Battery Leads Connected at Fuse Posts		
B) Fuse Positions Equipped with Dummy Fuses and Designation Pins		
4.22 Wiring for Alarm Fuses on Power Plant Bays and Battery Distributing Panels		
4.221 Wiring for Alarm Fuses Wired in Parallel with Main Dis-Charge and Charge Fuses Connected at Alarm Fuse Post When Other End Connected at Main Fuse Studs or Feeder Bus Bars	3.21	

→Indicates new or changed information

[Bracket at side of paragraphs indicates requirements.

**Engineering Planning Manager
Common Installation and Services**

Reason for Reissue:

- 1 - Include UIS 362 dated 12/26/75,
- 2 - Revise and Update Section