Special Service Circuits Safeguarding and Marking

Contents

1. General

1.1 Purpose

This practice assists field and central office (CO) personnel with safeguarding special service circuits by:

- Describing the devices and methods used to label and safeguard special service circuits.
- Illustrating each device, along with its network application.

Following this practice reduces the possibility of accidental interference or interruption of special service lines, which can result in a service interruption.

NOTE: Some frames, such as private line and carrier distribution frames, are made up completely of special service lines. In such a case, placing safeguards on every circuit is not required. Only those circuit applications outlined in Section 2.4 require safeguards at all cross-connect points.

1.2 Filing Instructions and Supersedures

Discard all previous issues and associated addenda of this practice and file this issue numerically in your GTE Telephone Operations practices set.

This practice supersedes and cancels:

- All policies, procedures, general instructions, letters, and memoranda which address this subject.
- Any document which provides information contrary to the information contained in this practice.

1.3 Reason for Reissuing

This practice has been reissued to incorporate multiple changes in the content. Read this entire practice to ensure your familiarity with the new information.

1.4 Responsibility

This practice was published by the GTE Telephone Operations Administrative Services Department. For more information about this practice, contact the Headquarters Network Reliability Staff Support Department.

1.5 Disclaimer

This practice was prepared solely for the use of GTE Telephone Operations. It must be used only by its employees, contractors, customers and end users, when installing, operating, maintaining, and repairing GTE Telephone Operations' equipment, facilities and services. Any other use of this practice is forbidden. The information contained in this practice may not be applicable in all circumstances and is subject to change without notice. By using this practice the user agrees that GTE Telephone Operations will have no liability (to the extent permitted by applicable law) for any consequential, incidental, special, or punitive damages that may result.

2. Overview

2.1 Introduction

Many telecommunications services require added precautions during installation, facility rearrangement, and maintenance. These services are designated as special service lines. Because momentary accidental contact with a circuit can cause a service degradation or interruption, GTE employees must take extra precautions to prevent such contact.

Safeguard devices provide electrical insulation protection and visual identification for mainframe terminals, jack fields, and outside plant (OSP) terminals. The appropriate device provides both access and security for wire-wrap, lug, punch-down, and solder connections.

This practice describes the devices and methods GTE uses to label and safeguard special service circuits.

2.2 Definitions

The following chart provides definitions for the acronyms used in this practice.

Acronym	Definition
CCS	Common Channel Signaling
CCSF	Common Control Signaling Frame
CDF	Combined Distribution Frame
CFB	Carrier Fuse Bay
CKT	Circuit
CLR	Circuit Layout Record
CO	Central Off ice
DTE	Data Terminal Equipment
FAA	Federal Aviation Administration
LINCS	Leased Inter-facility National Airspace System
MCI	Microwave Communications Inc
MDF	Main Distribution Frame
MISF	Miscellaneous Intermediate Distribution Frame
NOC	Network Operations Center

(continued)

2.2 Definitions Continued

Acronym	Definition
OSP	Outside Plant
PDF	Protector Distribution Frame
PDUP	Power Distribution Frame
SS7	Signaling System 7
SSCC	Special Service Control Center
TSP	Telecommunications Service Priority

2.3 Reference

For additional information related to this practice, see GTE Telephone Operations Practices in the 244-xxx-xxx series.

2.4 Forms

The following forms are referenced in this practise:

- Critical SS7 CKT, Form 000740PS.
- Caution Contains Critical SS7 Equipment, Form 000739PS.
- Contains Critical SS7 Circuit, CKT#, Form 000741PS.

Order these forms through normal supply channels.
To obtain these forms, submit a request to the print shop that serves your region or these forms can be obtained from local office supply stores and marked accordingly.

3. Safeguarding

3.1 Circuits Requiring Safeguarding

Examples of special service circuit applications that require safeguarding against interruption are:

- SS7- Common Channel Signaling (CCS).
- Telecommunications Service Priority (TSP).
- Military.
- MCI FAA LINCS.
- Private line service furnished to the government, FAA, 911, civil defense, etc.
- Audio and video program supply.
- Remote control signal and alarms, including:
  - Fire.
  - Police.
  - Burglar alarm.
  - Various instrument gauge lines.
- Miscellaneous circuits for which special safeguards are prescribed by order.
- Digital and analog data.
- High-Capacity Circuits.
- Cellular and radio telephones.

3.2 Safeguarding Requirements

The special service circuits listed in Section 3.1 must receive the following minimum safeguarding treatment:

- CO personnel must install the proper safeguard devices from the lightning protector module up to and including the first cross-connect terminal on the distributing frame.
- Outside field forces must install the proper safeguard devices in:
  - OSP terminals.
  - Cross-connect boxes.
  - Station protectors.

The following circuit applications, in addition to meeting the minimum requirements, must be safeguarded with the proper devices at all locations where accidental circuit interruption might occur:

- ss7.
- FAA air traffic control service.
- 911.
- High-Capacity.
- TSP.

This includes all cables, tie cables, and equipment connections on all frames, including private line and carrier distribution frames:

- Cables.
- Tie Cables.
- Equipment Connections.

3.3 Maintenance Precautions

Obtain permission from the SSCC testing personnel before connecting test sets, test receivers, mainframe test cords, or test desk cords to the associated terminals or jacks. Safeguarded circuits must never be opened, grounded, short-circuited, or manipulated without permission from SSCC testing personnel.

Before permitting the work to proceed, SSCC personnel must inform customers of the work to be done. Upon completion of the work, SSCC must restore service to the customer.

3.4 Specific Marking

Section 4 provides guidelines for marking circuits related to SS7. Similar critical special service circuits can follow this same pattern in identifying the circuit as well as the:

- Associated Power.
- Shelf.
- Bay.
- Frame Markings.

This enables personnel in the central office to easily identify the markings as circuits requiring caution when working in and around that area.

The following chart describes the specific labels for items identified in Section 3.1.

Labels	Definition
Customer/Circuit Name	Place the customer name or what the circuit is referred to as in this section.
Circuit Number	GTE's circuit from the CLR.
Circuit Use	The application of the circuit, ie: MCI FAA LINCS.
Notification Contact Numbers	Associated numbers for notifying groups in case of emergency or routine maintenance activity.
Associated Off ice	Location of where the circuit is routed to may be entered here.

Due to the space limitations around certain equipment, not all of this information may be printed on one label. Place as much information as needed to allow maintenance personnel to recognize the nature of the circuit and helpful information in case of an emergency.

4. SS7 Requirements

4.1 SS7 Introduction

CO personnel is responsible for safeguarding and marking all SS7 circuits in accordance with this practice. The circuits and equipment must be readily identifiable as special service circuits on all distributing frames and equipment frames as described in the following sections.

All labeling is performed using removable orange labels. Labels may be obtained from local office supply store.

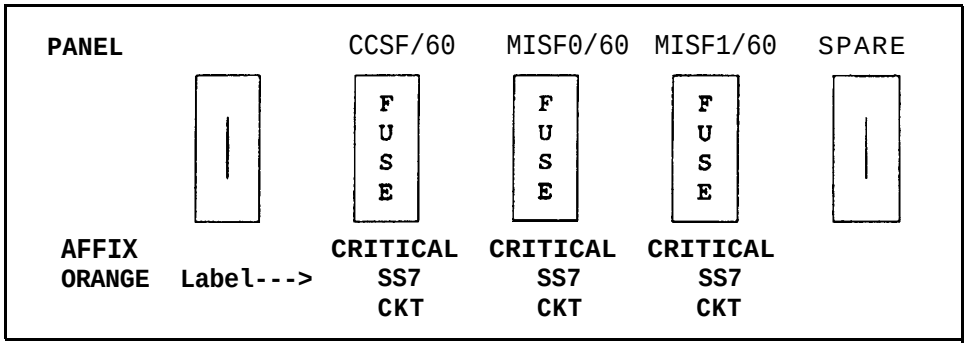
NOTE: Refer to the 244~xxx-xxx series of GTE Telephone Operations Practices for additional labeling information.

4.2 Power Equipment Labeling

For PDFs and CFBs, etc., label the individual fuse positions supplying power to SS7 equipment and channel banks containing SS7 signaling links in accordance with the following guidelines and illustration.

1. Use a label that reads *CRITICAL SS7 CKT,* as shown below.

2. Affix the label above or below the distribution fuse, depending on which is more visible from a standing position.
3. Avoid placing a label on the removable fuse holder. The label must not mask current labeling, such as fuse size or feed.
4. Verify fuse size and feed labeling with *CO* power drawings.



4.3 Bay Labeling

On an SS7 bay, CCSF bay, affix a label that reads *CAUTION CONTANS CR/T/CAL SS7 EQUIPMENT.* See the illustration below.

4.4 Local Records

At an MISF bay or other bay containing SS7 modems, attach a CLR or equivalent record to the bay in a clear plastic sheet protector. Local maintenance or special service personnel must post on the layout record the location/position of the:

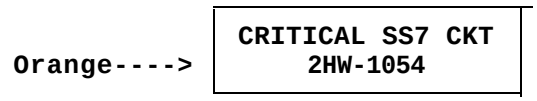
- MISF bay location.
- Modem position.
- Local tie pair assignments.
- Frame terminal blocks.

Duplicate records of these local assignments must be maintained in the local special service file.

4.5 Carrier Bay Labeling

The following chart explains labeling for the types of carrier bays.

Bay or Bank	Labeling Procedure
Repeater bay	If SS7 signaling links ride metallic facilities (spans), Label the CO repeater positions *CRITICAL SS7 CKT:*
Channel bank	Label individual channel units and carrier sideboards *CR/T/CAL SS7 CK7:* Include on the label the SS7 data link circuit number and the phrase. See the illustration below.



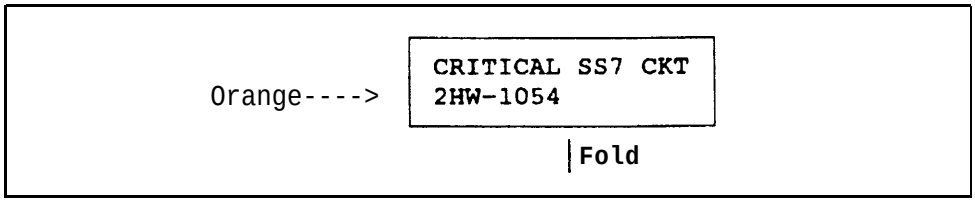
4.6 Distribution Frame Safeguards

Red protectors are required at each SS7 termination point frame, including:

. MDF.
. CDF.
. PDF.

This protector must cover the terminal and the wired connection, e.g., wire wrap

Individual jumpers must be labeled at each termination point. Fold the orange label in half to display the special services circuit number as shown below.



5. Standard Safeguard Devices

5.1 Devices

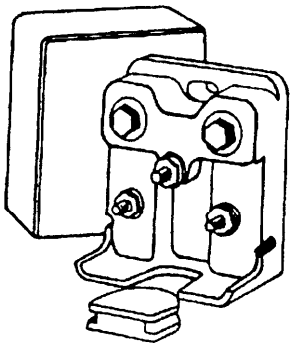
The following chart lists the standard safeguard devices used on special service circuits. The chart features:

- Descriptions of each device.
- Illustrations of:
  - The device.
  - The device's application.
- Part numbers and material codes used to obtain these items.

NOTE: Follow standard requisition procedures to order the devices.

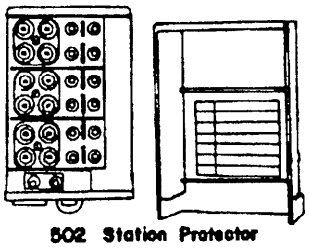
Item	Sketch	Part Number	Material Code
Cap binding post red (lug term)		TCR	524694

Application



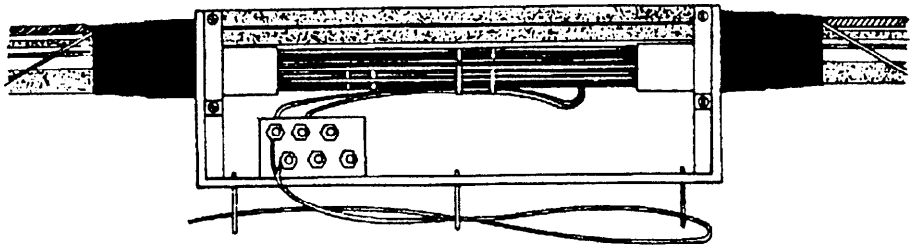
Type 500

Typical Protectors that Utilize the Basic 492 Module



502 Station Protector

Aerial Terminal



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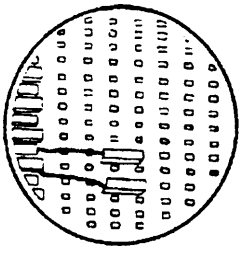
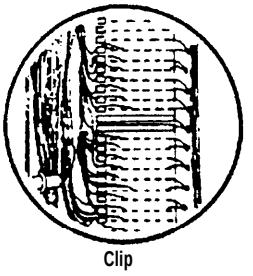
5.1
Devices, continued

Item	Sketch	Part Number	Material Code
Insulator clip terminals:			
2 pin		**P11800**	**553402**
3 pin		P11799	553403
6 pin		P11798	553406

Application

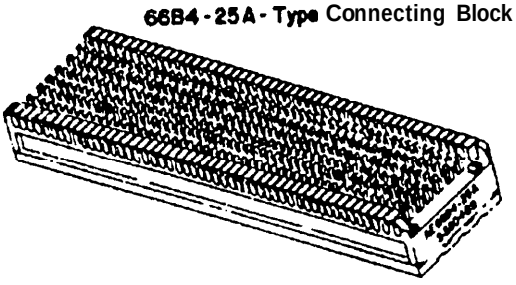


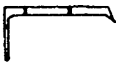
Clip



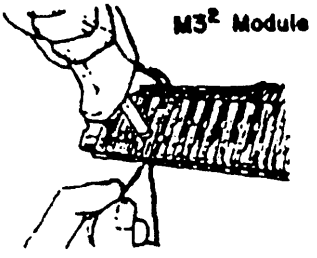
Clip

66B4-25A-Type Connecting Block



CAP circuit prior (MS2 cross-connect box)		4014	520870

Application



Punching with 4055 Insertion Tool

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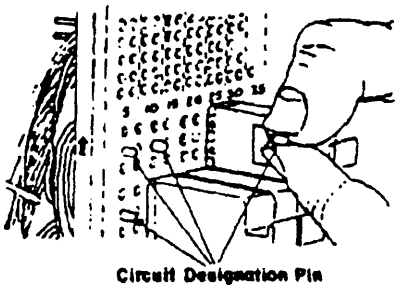
5.1 Devices, continued

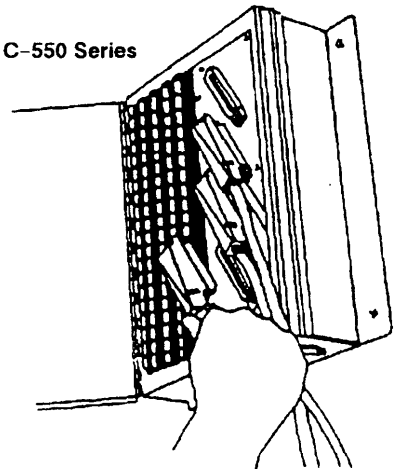
Item	Sketch	Part Number	Material Code
Pin designation circuit red		303-1020	746053

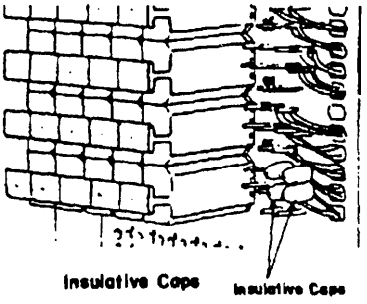
Application



Marker cap red		**C675**	**766623**

Application





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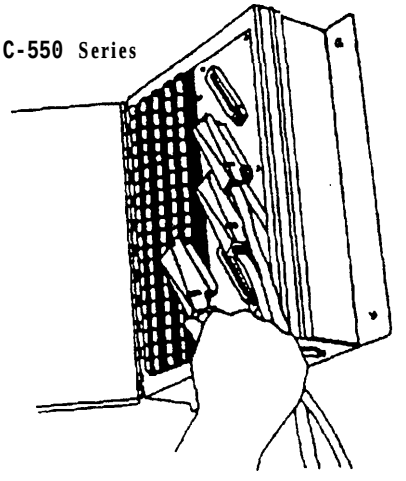
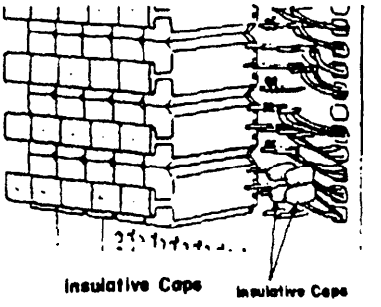
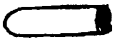
5.1 Devices, continued

Item	Sketch	Part Number	Material Code
Module protector 6A **NOTE: If 6A module is black, use marker cap red.**		303-0670	746024

Application





Item	Sketch	Part Number	Material Code
Cap terminal circuit special red		545-I 137	746054

Application