⚠ DANGER

This quick operation guide is not a replacement for adequate training and safety procedures for this product. Read S&C Instruction Sheet 666-510 thoroughly and carefully before using this quick operation guide. **Failure to have adequate training and understanding of these instructions will likely result in serious personal injury or death if the instructions, including recommended precautions, are not followed.**

⚠ WARNING

S&C Manual PME Pad-Mounted Gear must be installed, operated, and maintained by qualified persons knowledgeable in underground electric power distribution equipment and the associated hazards. For more information on the requirements of a qualified person, see the "Introduction" section of S&C Instruction Sheet 666-510. **These instructions are not intended to be a substitute for adequate training and experience in safety procedures for this type of equipment. Failure to follow these operating and safety procedures can result in serious injury.**

NOTICE

Fuse handling in this Instruction sheet is to be performed with a shotgun-style hotstick.

⚠ DANGER

When access to high-voltage compartments is required for inspection, service, or repairs, always observe the precautions below. **Failure to observe these precautions may result in serious personal injury or death.**

1. Access to pad-mount gear must be restricted only to qualified persons. See the Warning above.
2. Always follow safe operating procedures and rules.
3. Before touching any device, always disconnect switches and fuses from all power sources (including backfeed), test for voltage, and properly ground.
4. Always assume both sets of power terminals on any switch or fuse are energized unless proved otherwise by test, by visual evidence of open circuit conditions on both sets of terminals, or by observing that both sets of terminals are grounded.
5. Test for voltage on both sets of power terminals of any switch or fuse using proper high-voltage test equipment.
6. After the gear has been completely disconnected from all sources of power and tested for voltage, install suitable grounding cables in all compartments.
7. Make sure the enclosure is properly grounded to the station or facility ground. Do not return equipment to service unless such grounds are properly made.

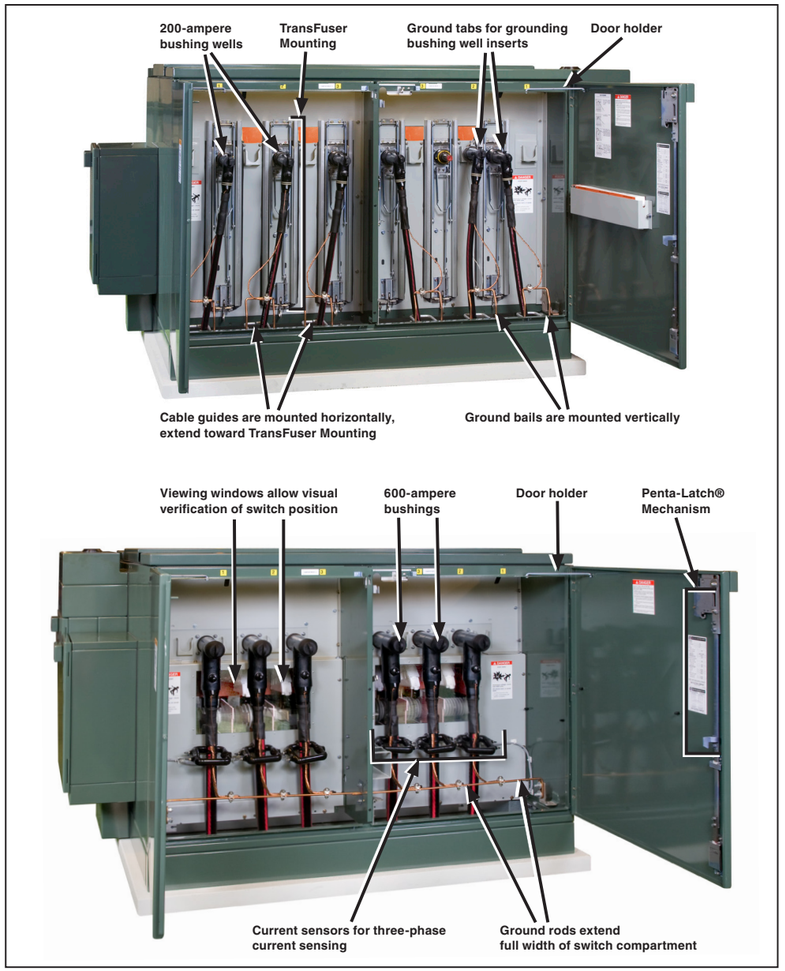

Figure 1. A remote supervisory Model PME-9 showing open-door views of the fuse-termination compartments (above) and switch-termination compartments (below)

Access to Interior

For instructions on opening, closing and securing the enclosure doors, see S&C Instruction Sheet 666-510.

Operating the Mini-Rupter® Switch

The following instructions are for manual switches. For Mini-Rupter Switches operated by Type PM Switch Operators, refer to S&C Instruction Sheet 669-515.

STEP 1. Remove the padlock and open the switch-operating-shaft access cover. See Figures 2 and 3.

STEP 2. Remove the folding operating handle from its storage pocket behind the access cover. Unfold the handle until it is latched and slide it onto the hex switch-operating shaft.

STEP 3. Rotate the handle in the appropriate direction to open or close the switch, and check the SWITCH POSITION indicator to verify the switch is in the desired position.

STEP 4. Open the enclosure doors.

STEP 5. Check the physical position of the switch by using the viewing window provided in the switch-termination compartment. See Figure 1.

⚠ WARNING

Always confirm the **Open/Closed** position of the Mini-Rupter Switch by visually observing the position of the switch blades. **Failure to do so can result in personal injury.**

STEP 6. Remove and fold the operating handle, and return the handle to its **Storage** position. Then, close and padlock the access cover.

⚠ CAUTION

Do not leave the switch's operating shaft access cover unlocked if a qualified person leaves the gear unattended. **Failure to do so can result in equipment damage and personal injury.**

STEP 7. Close and lock the enclosure doors.

Opening the TransFuser™ Mounting

⚠ DANGER

The following procedures assume the user has supplied and installed loadbreak inserts and loadbreak elbows. Open the Mini-Rupter Switches before proceeding if deadbreak inserts and deadbreak elbows are installed or if company operating procedures and rules do not permit switching with elbows. **Failure to open the switches when deadbreak inserts and elbows are used will result in a flashover and serious injury.**

STEP 1. Open the fuse termination compartment door and secure it with the door holder. See Figure 1. On double-door models, the adjacent door should be closed and latched to minimize exposure.

Figure 2. The switch access cover padlock.

Figure 3. The access cover open and folding switch-operating handle installed.

STEP 2. Install a portable feedthru or standoff insulator on the parking stand directly above the cable guide of the elbow to be moved. This ensures the cable will not interfere with the TransFuser Mounting after the elbow is moved. Following the elbow manufacturer's instructions, remove the 200-ampere loadbreak elbow (thus interrupting any load through the fuse to be removed), and move the elbow to the portable feedthru or standoff insulator.

⚠ WARNING

If elbows are stored on feedthru or standoff insulators for an extended period, cover the 200-ampere interface with an insulating protective cap with a drain wire and connect the drain wire to the ground bail. **Failure to connect the drain wire to the ground bail can result in a flashover, injury, and equipment damage.**

⚠ WARNING

When changing fuses, the 200-ampere interface need not be covered because it will be exposed only temporarily. If company operating procedures and rules require it, the interface may be covered with an insulating protective cap without a drain wire. A cap with a drain wire must not be used. **Operation of the TransFuser Mounting mechanism will draw the grounded drain wire inside the component compartment close to energized parts, which can result in a flashover and serious injury.**

NOTICE

The insulated protective cap and drain wire must be removed before operating the TransFuser Mounting mechanism. **Failure to remove the cap and drain wire will interfere with mechanism operation.**

STEP 3. When the elbow has been moved and mounted on a feedthru or standoff insulator, the TransFuser Mounting mechanism may be operated. Using the shotgun stick, raise the mechanical interlock to unlock the TransFuser Mounting. See Figure 4. This interlock cannot be lifted to the **Unlocked** position until the elbow has been removed and guards against gaining access to the fuse while it is carrying current.

STEP 4. Secure the shotgun stick to the pull-ring at the lower end of the TransFuser Mounting. Do not ratchet the shotgun stick all the way up when securing the pull-ring. Doing so may hinder with the movement of the TransFuser Mounting. See Figure 5. With an outward pull, rotate the TransFuser Mounting end for end to expose the fuse in one motion. See Figure 6.

STEP 5. Make sure the mounting is latched before removing the shotgun stick. Then, disengage the shotgun stick from the pull-ring. Using the shotgun stick, push against the top of the mounting to verify it has securely latched. With the TransFuser Mounting latched in the **Open** position, the fuse is de-energized, isolated from high voltage, and is accessible for removal from the mounting using the shotgun stick.

Fusing

TransFuser Mountings can accommodate Type SME-20 Power Fuses, Type SME-4Z Power Fuses, or Fault Fiter® Electronic Power Fuses. Fault Fiter fuse mountings also accommodate a variety of current-limiting fuses.

Figure 4. Raising the mechanical interlock to unlock the TransFuser Mounting.

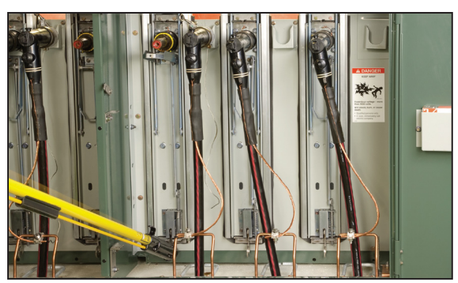

Figure 5. Unlatching (or latching) a TransFuser Mounting in the Closed position.

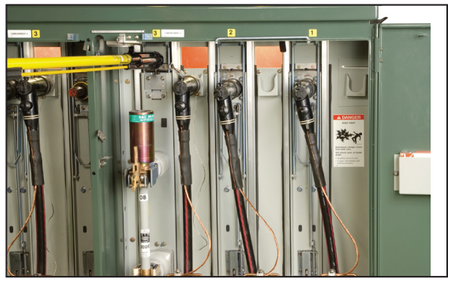

Figure 6. Latching (or unlatching) a TransFuser Mounting in the Open position.

⚠ WARNING

When selecting current-limiting fuses, the voltage rating of the fuses must conform to the recommendations in S&C Information Bulletin 660-50.

Failure to conform to these recommendations can result in a flashover, injury, and equipment damage.

Assembling Power Fuses

SMU-20® Fuse Units, SM-4® Refill Units and Fault Fiter fuse interrupting module and control module packaging contains a copy of the instruction sheet for assembling fuses. For instructions on installing current-limiting fuses in current-limiting fuse holders, refer to S&C Instruction Sheet 660-501.

Installing the Fuse in the Mounting

Fault Fiter fuses rated 25 kV should be installed in their mountings by hand using suitable protective equipment. Install all other fuses as follows:

STEP 1. Secure a shotgun stick tightly to the fuse pull-ring with the fuse positioned so the body of the fuse is below the stick. Grasp the shotgun stick with both hands approximately 2 feet (61 cm) apart, placing one hand on the shotgun-stick latch mechanism.

STEP 2. Lift the fuse and lower it into the cradle of the fuse mounting. See Figure 7.

STEP 3. With the fuse securely seated in the cradle, with one motion push the fuse forward to latch it in the **Closed** position. See Figure 6. Disengage the shotgun stick from the fuse.

STEP 4. Verify the fuse is properly latched in the fuse mounting. While holding the shotgun stick, push against the fuse-holder assembly and pull on the fuse assembly as shown in Figure 6 by placing the stick's ring in the opening below the pull-ring.

Closing the TransFuser Mounting

After the fuse has been installed or replaced, close the mounting and energize the fuse as follows:

STEP 1. Secure a shotgun stick to the pull-ring at the top of the TransFuser Mounting. Do not ratchet the stick all the way up when securing the pull-ring. Doing so may hinder the movement of the TransFuser Mounting. See Figure 5. With an outward pull, rotate the mounting end for end to return the fuse to the medium-voltage compartment in one motion. Make sure the mounting latches in this position before removing the shotgun stick. Then, disengage the stick from the pull-ring. Using the stick, push against the bottom of the mounting to verify it has securely latched.

STEP 2. Lower the mechanical interlock to lock the TransFuser Mounting. If a protective cap was placed on the bushing interface, remove it with the shotgun stick.

STEP 3. Move the elbow from the portable feedthru or standoff insulator to the bushing in accordance with the elbow manufacturer's instructions. Remove the portable feedthru or standoff insulator from the parking stand.

STEP 4. Close and latch the enclosure doors. Pull outward on the Penta-Latch Mechanism cover to verify the door has latched securely. Padlock the door.

Replacing a Blown Fuse

STEP 1. Gain access to the blown S&C Power Fuse or current-limiting fuse following the instructions found in the "Opening the TransFuser Mounting" section on page 1.

STEP 2. Fault Fiter fuses rated 25 kV should be removed from their mountings by hand using suitable protective equipment. Remove all other fuses by grasping a shotgun stick with both hands approximately 2 feet (61 cm) apart, placing one hand on the shotgun-stick latch mechanism.

STEP 3. Secure the shotgun stick tightly to the fuse pull-ring.

NOTICE

Do not permit the end-fitting of an SME-4Z Power Fuse to strike the ground during the following removal process. The blown-fuse target may be damaged or become impacted with dirt and may not operate properly.

STEP 4. Stand in a normal, upright position facing the shotgun stick. Unlatch the fuse with a short, outward pull on the fuse pull-ring. Then, remove the fuse from its mounting with an upward and outward lifting motion. When the fuse has been removed from the mounting, the fuse may be left with the live parts in the termination compartment and the doors may be closed.

NOTICE

Always store fuses in a clean, dry location. Do not store fuses in termination compartments unless the unit is equipped with the optional **Fuse Storage** feature.

STEP 5. Install a replacement unit as follows:

For S&C Power Fuses: SMU-20 Fuse Units, SM-4 Refill Units, and Fault Fiter fuse interrupting module and control module packaging contain a copy of the instruction sheet for installing fuses.

For current-limiting fuses: For instructions on replacing current-limiting fuses in current-limiting fuse holders, refer to S&C Instruction Sheet 660-501. These holders will accommodate the current-limiting fuses listed in S&C Information Bulletin 660-50.

STEP 6. Install the fuse in its mounting following the instructions found in the "Installing the Fuse in the Mounting" section.

Note: Take the blown fuse back to the service center for proper disposal.

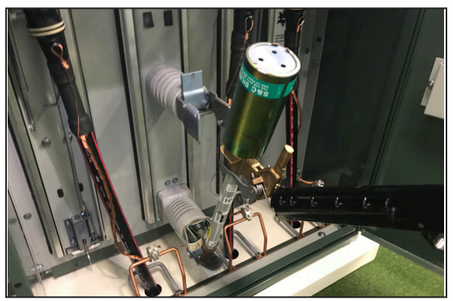

Figure 7. A fuse lowered into the cradle in preparation for latching into a TransFuser Mounting.