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HOUSTON LIGHTING AND POWER COMPANY
SOUTH TEXAS PROJECT
ELECTRIC GENERATING STATION
PLANT PROCEDURES MANUAL

STATION PROCEDURE

SAFETY-RELATED (Q)

Control of Configuration Changes

OPGP03-ZM-0021
Rev. 4
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PLANT MANAGER

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1.0 Purpose and Scope

1.1 Purpose

- 1.1.1 This procedure provides instructions for the control of temporary configuration changes, as defined by this procedure, to permanent plant equipment. A Work Document (Service Request, Preventive Maintenance, Surveillance) is not a requirement for this procedure to be applicable.
- 1.1.2 All activities involving removal/replacement/installation of permanent plant equipment fuses are governed by this procedure.

1.2 Scope

- 1.2.1 This procedure applies to configuration changes on permanent plant equipment except for:

NOTE

Although temporary hose connections to floor drains, sumps, or normal service connections do not fall under the scope of this procedure, they may fall under control of OPGPO3-20-C031 (Temporary Hose Control). Personnel should review criteria as outlined in that procedure to determine specific exceptions and requirements.

- 1.2.1.1 Hoses from system drains to floor drains or sumps.
- 1.2.1.2 Normal service connections to Breathing Air, Station Air, Well Water, Service Water, Potable Water, Demineralized Water.
- 1.2.1.3 Removal and reinstallation of plugs and pipe caps downstream of normally closed isolation valves.
- 1.2.1.4 Normal AC Lighting and Plant Lighting, Systems LG and LY.
- 1.2.1.5 Plant computer equipment.
- 1.2.1.6 Plant communications equipment.

- 2.5 **INDEPENDENT VERIFICATION:** The act of checking a condition, such as a component position, separately from activities related to establishing the condition or component's position. Independent Verification shall apply to valves, breakers, switches, jumpers, lifted wires, blind flanges, plugs, electrical equipment links, control cards, field instruments and transmitters, or any other component that could if improperly installed or mispositioned, degrade a safety function.
- 2.5.1 The Independent Verification shall be performed by one or more individual(s) not involved in and separate from the establishment of the condition or component position.
- 2.6 **LIFTED LEAD:** An electrical conductor utilized as an active system component that is temporarily disconnected.
- 2.7 **MAINTENANCE PLANNING:** For the purpose of this procedure, Maintenance Planning refers to the Maintenance Planning Section, in general, and specifically the Planning Division Manager, but may refer to the Planning Supervisor, Lead Planner or the Duty Planner.
- 2.8 **MECHANICAL JUMPER:** A temporary connection using spool pieces, hoses, tubing or piping that joins two or more fluid systems; or bypasses one or more components within a fluid system.
- 2.9 **PERMANENT PLANT EQUIPMENT:** Structures and components designed and used directly for or in support of power production, nuclear safety, fire protection, environmental control, plant communications, and plant security.
- 2.10 **RESPONSIBLE MAINTENANCE AUTHORITY (RMA):** For the purpose of this procedure, the RMA is the Cognizant Craft Foreman or Supervisor or above, responsible for the assignment of craftsmen to work activities.
- 2.11 **TROUBLESHOOTING:** The process of locating and identifying malfunctions through deductive and inductive reasoning. The process may include activities such as taking readings, pulling fuses, stroking valves, changing electronic modules, partial or complete disassembly of a component or other activities.
- 2.12 **VERIFICATION:** The act of checking a condition or activity by an individual other than the person performing the activity. The individual performing the verification may do so in the company of the person performing the activity.
- 2.12.1 When installing/removing electrical/mechanical jumpers, verification shall consist of positively identifying connection point prior to the installation/removal of the jumper as well as the proper placement and removal of the jumper (SPR-880088).

3.0 Responsibilities

3.1 Work Supervisors in the Maintenance Department are responsible for: |

3.1.1 Ensuring all personnel under their supervision are aware of |
the requirements of this procedure.

3.1.2 Ensuring correct implementation of this procedure.

3.2 Personnel in other than the Maintenance Department performing
temporary configuration changes, in accordance with approved Plant
Procedures, are responsible for complying with the requirements of
this procedure.

3.3 All personnel preparing work packages shall ensure the requirements
of this procedure are incorporated into work instructions. |

4.0 Prerequisites

4.1 If required, obtain the necessary clearance for tasks specified on
the governing document per OPGPO3-ZO-0039 (Configuration
Management).

4.2 Review precautions of all procedures that will be used to complete
the task(s) specified in the governing document.

4.3 Appearance of electrical and mechanical jumpers shall be unique,
such that they contrast with normally installed equipment (i.e.
different color, tagged, labeled, etc.).

4.4 Electrical and mechanical jumpers shall be compatible for the use
intended (e.g., size, terminal type, insulation, pressure rating,
material, piping construction, etc.).

```
*****  
*                                     *  
*          CAUTION                   *  
*                                     *  
*   MSTE leads or test probes can become *  
*   "part of the circuit." (LER 90-010)  *  
*                                     *  
*****
```

4.4.1 Pre-task self-verification should be performed before
connecting test equipment leads in any system which may
cause a Reactor trip or an Engineered Safety Features
Actuation.

- 4.9.2 The job performer may utilize a sketch to illustrate the physical location of termination points, plugs, jacks, terminal blocks, leads, etc. If a sketch is utilized, it shall be drawn on the reverse side of Data Sheet (-1). (SPR 910148/LER 91-12)

5.0 Precautions

- 5.1 Installation and removal of jumpers or lifting and landing of leads on energized electrical circuits should be avoided. Use of fused jumpers is preferred in such situations.
- 5.2 Lifted leads shall be insulated from other circuits and ground.
- 5.3 "Clip-on" type leads may be used for testing. When "Clip-on" type leads are installed, they shall not be left unattended.
- 5.4 Before installing fuses, ensure they are of the proper type, manufacturer, voltage, and rating for the application. In addition, when possible, avoid using fuses as a primary disconnect.
- 5.5 In cases of emergency, the Shift Supervisor may give permission to deviate from this procedure where necessary to prevent injury to personnel, damage to equipment, or increase a margin of safety. The emergency deviation shall be documented and reviewed as soon as possible after installation.
- 5.6 In panels/equipment consoles identified as complying with REG GUIDE 1.75, ensure cable separation criteria is not violated by performance of the work activity
- 5.7 When it is known that an abnormal readout, indication, or other condition could result from performance of a maintenance action, the Control Room Operator should be notified prior to performance of the action.
- 5.8 Fuses should not be removed or installed under load, unless this is the only practical means available.
- 5.9 All electrical equipment shall be considered energized unless positively proven to be de-energized.
- 5.10 During performance of maintenance, removed parts shall be adequately packaged, identified and stored to prevent loss or damage, and to ensure their traceability to the component from which they were removed.
- 5.11 All components that are not keyed or uniquely coded/labeled to ensure proper reinstallation shall be uniquely identified per steps 4.9 and 4.9.1. (SPR 900406)

6.1.3.4 Anytime an action produces an unexpected result, stop the activity, inform Control Room personnel or other cognizant authority, and proceed as directed.

6.1.3.5 Upon completion of maintenance activities, equipment shall be returned to its design condition, unless controlled by a Temporary Modification in accordance with OPGP03-ZO-0003. Control Room personnel or other cognizant authority shall be informed of completion of the actions.

6.1.3.6 Configuration changes, utilizing Form (-1) for documentation, that are to remain installed after the equipment is returned to service, shall be documented in accordance with OPGP03-ZO-0003 (Temporary Modifications and Alterations).

- a. Form (-1) shall be transferred to the temporary modification package. (SPR 900429)
- b. The Work Control document shall be annotated indicating the transfer.
- c. The completion of the Configuration Change shall be Independently Verified.

6.1.3.7 When Form (-1) is used with Work Control documents generated to install Temporary Modifications in accordance with OPGP03-ZO-0003 (Temporary Modification and Alteration), it shall be transferred to the Temporary Modification package prior to closure of the Work Control document.

```
*****
*
*           CAUTION
*
* When lifting leads on "LIVE" circuits,
* special consideration must be given to the
* potential effects on operating equipment
* of "Daisy Chain" power supplies.
* (SPR 910288)
*
*****
```

6.1.4 Activities requiring lifting and landing of leads, shall be controlled with the following additional requirements:

6.1.4.1 Lifted leads shall not be used on safety related systems when other practical means are available to perform the function (ST-HL-AE-2265).

- 6.1.5.4 Installation and removal of jumpers shall be verified. (See 2.12)
- 6.1.5.5 Installation and removal of jumpers shall be documented using one of the following methods (IEN 84-37):
- a. Entering required information on Form (-1) in accordance with the instructions provided.
 - b. Inclusion of specific steps into work instructions or procedures that specify installation and removal of jumper and includes the recording of information for jumpers the same as the instructions for Form (-1).
- 6.1.6 Activities requiring the installation and/or removal of fuses specified by a Work Document shall be in accordance with the following additional requirements:

NOTE

The primary source of design requirements for fuses is the Fuse/Relay List (SE541EL70000 and SE542EL7000). The secondary source is the applicable Bill of Material (BCM) drawing, normally a vendor document.

- 6.1.6.1 When removing and/or installing fuses, ensure the fuse replacement is in accordance with design requirements (e.g. size, rating, type, manufacturer, etc.). (SPR 910251)
- 6.1.6.2 Prior to removing fuses, ensure the fuse block has positive identification markings; if not, identify per 6.1.4.2.
- 6.1.6.3 The fuse removal and/or installation shall be documented and verified per Form (-1).
- 6.1.6.4 Form (-1) shall remain with the Work Document as an attachment.

- 6.1.9 Activities requiring installation and removal of mechanical jumpers, shall be controlled in accordance with the following additional requirements:
- 6.1.9.1 Jumpers such as tubing used to connect test gauges, shall be compatible with the intended use (e.g. size, materials, pressure rating, etc.) (SPR-800248).
 - 6.1.9.2 The installation and removal of jumpers shall only be performed on out-of-service systems unless the system connection points are valved or can be otherwise isolated.
 - 6.1.9.3 Prior to installing jumpers ensure that the connection points have positive identification markings; if not, refer to 6.1.4.2.
 - 6.1.9.4 Installation and removal of jumpers shall be verified.
 - 6.1.9.5 Installation and removal of jumpers shall be documented using one of the following methods:
 - a. Entering required information on Form (-1) in accordance with the instructions provided.
 - b. Inclusion of specific steps into work instructions or procedures that specify installation and removal of jumper and requires recording of information from Form (-1).
 - 6.1.9.6 Use of mechanical jumpers as configuration changes should be limited to systems with pneumatic and hydraulic controls and installation of test gauges. Jumpers installed in process systems should be reviewed to determine if they require documentation as Temporary Modifications in accordance with OPGP03-ZO-0003 (Temporary Modifications and Alterations).

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- 7.13 IEN 84-37
- 7.14 SPR 880088
- 7.15 SPR 880276
- 7.16 SPR 880248
- 7.17 SPR 910251
- 7.18 SPR 910148
- 7.19 Fuse/Relay List (5E541EL7000 and 5E542EL7000)
- 7.20 SPR 92-1518

8.0 Support Documents

- 8.1 Form (-1) Configuration Change Log
- 8.2 Addendum 1 - Instructions for Form (-1) Configuration Change Log

FC 93-0044

FC 93-0044

ADDENDUM 1
INSTRUCTIONS FOR FORM (-1)
CONFIGURATION CHANGE LOG
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6. DESCRIPTION (REMOVAL) - Enter the following:
 - a. For Leads - wire number, color, and/or other identification marking of the lead to be lifted. Only one lead may be listed on each line entry.
 - b. For Fuses - Amps, fuse voltage, type/code, and manufacturer of the fuse to be removed.
 - c. For Electrical Jumpers - N/A
 - d. For Mechanical Jumpers - N/A
 - e. For Miscellaneous Changes - description of component
7. DESCRIPTION (INSTALL) - Enter the following:
 - a. For Leads - wire number, color, or other identification used during removal (#6) of the lead to be landed.
 - b. For Fuses - Amps, fuse voltage, type/code, and manufacturer of the fuse being installed.
 - c. For Electrical Jumpers - N/A
 - d. For Mechanical Jumper - N/A
 - e. For Miscellaneous Changes - description of component
8. FROM (REMOVAL) - Enter the following:
 - a. For Leads - termination point the lead is being lifted from. (e.g. Terminal 2/Terminal Block 2/Panel 4)
 - b. For Fuses - fuse block number, circuit number, or other identification marking.
 - c. For Electrical Jumpers - termination point an end of jumper is being removed from, should be the same point entered in #14.
 - d. For Mechanical Jumpers - connection point that one end of the jumper is being removed from, should be same as point entered in #14.
 - e. For Miscellaneous Changes - specific location component was removed from.

ADDENDUM 1
INSTRUCTIONS FOR FORM (-1)
CONFIGURATON CHANGE LOG
(Page 4 of 6)

12. PERFORMED - Enter the initials of the individual performing the removal and the date.

NOTE

Verification shall consist of the following:

When installing/removing electrical/mechanical jumpers, verification shall consist of positively identifying connection point prior to the installation/removal of the jumper as well as after the proper placement and removal of the jumper.

When removing/installing fuses, verification shall consist of positively identifying the fuse and its required location prior to the removal/installation of the fuse as well as after the removal/installation of the fuse.

When installing/removing test equipment, verification shall consist of positively identifying the test point prior to the installation/removal of the test lead/device as well as after the proper placement of the test lead/device.

When manipulating switches, verification shall consist of positively identifying the switch prior to its manipulation as well as after the proper positioning of the switch.

-
13. VERIFIED - Individual performing verification of the removal enter initial and date.
14. FROM (INSTALLATION) - Enter the following:
- a. For Leads - N/A
 - b. For Fuses - N/A
 - c. For Electrical Jumpers - termination point one end of the jumper is being connected to.

