

SPECIAL SPECIFICATION

SECTION 16475S

PRIMARY SYSTEM SAFETY REQUIREMENTS

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SPECIAL SPECIFICATION

SECTION 16475-S

PRIMARY SYSTEM SAFETY REQUIREMENTS

PART 1 - GENERAL

1.01 SCOPE

- A. The work covered by this specification consists of the safety aspects of performing operations during the installation or modification of the primary distribution systems. Primary distribution systems are defined as all power systems designed to be operated at more than 600 volts. It describes the minimum requirements necessary for the protection of personnel and equipment. Any additional safety requirements deemed necessary to assure personal safety shall be implemented. In no case will any of the precautions listed herein be deleted without prior approval by the Sandia Delegated Representative (SDR).
- B. The requirements listed in this specification have been compiled to help prevent accidents. It is the responsibility of the Contractor to ensure that his personnel follow all system safety requirements. Specific requirements are listed in this specification for certain procedures. However, due to the nature of many jobs associated with the primary distribution system not every procedure is described. It is imperative that the contractor and his personnel exercise caution and good judgment in maintaining a safe work environment. **NO JOB IS SO IMPORTANT THAT IT MAY BE PERFORMED WITHOUT DUE REGARD FOR PERSONNEL, EQUIPMENT, AND SAFETY.**
- C. Related Drawing: Refer to Sandia National Laboratories (SNL) Facilities Standard Drawing No. 101768/E1, "Tap Box Grounding Cluster".
- D. Related Standard Specification: Standard Specification Section 01065, "Environment, Safety, and Health for Construction and Service Contracts". Electrical Safety Requirements in this specification (Section 01065) are required in addition to Primary System Safety Requirements (Section 16475).

1.02 REFERENCES

- A. American National Standards Institute (ANSI)
 - Z87.1 Practice for Occupational and Educational Eye and Face Protection.
 - Z89.1 Personnel Protection - Protective Headwear for Industrial Workers - Requirements.

- B. American Society of Testing and Materials (ASTM)
 - D120 Standard Specifications for Rubber Insulating Gloves.
 - D178 Standard Specifications for Rubber Insulating Matting.
 - D1048 Standard Specifications for Rubber Insulating Blankets.
 - D1049 Standard Specifications for Rubber Insulating Covers.
 - D1050 Standard Specifications for Rubber Insulating Line Hose.
 - D1051 Standard Specifications for Rubber Insulating Sleeves.

1.03 REQUIREMENTS

- A. Qualified Personnel: All primary system work shall be performed by a qualified high voltage contractor and in a manner consistent with this specification. The contractor and his personnel performing such work shall be knowledgeable with the installation and maintenance requirements of primary systems. They shall have high voltage experience and shall have routinely worked on these types of systems.
 1. All Contractor personnel shall become familiar with this specification, the referenced documents, and all state and municipal safety regulations as applicable.
 2. The Contractor shall designate an employee as Safety Officer on the work site who shall be responsible for implementation and supervision of all health, safety, environmental, and fire protection regulations. The requirements of Section II, Standard Terms and Conditions for Fixed Price Construction Contracts shall be included in with safety requirements listed in this specification.
 3. The Contractor doing the high voltage work shall have a valid state of New Mexico Construction Industries Division (NMCID) EL-1 classification license.

- B. Outage Coordination Meetings: The Contractor and/or associated sub-contractors shall attend outage coordination meetings for each and every scheduled outage associated with his work. A step by step outage procedure, including safety precautions, will be discussed at the outage coordination meeting. The Contractor will be notified to attend the outage coordination meeting by the SDR.

- C. Outage Notification: The SDR has a calendar of scheduled primary system outage dates. The Contractor shall review these dates with the SDR and notify the SDR in writing not less than 21 days prior to the next available outage date. (This is not a guarantee that the outage will occur on that date.)
- D. Work Related Equipment:
1. The Contractor shall furnish all the safety equipment to properly perform the work in a reliable and safe manner. The Contractor shall furnish all equipment, including, but not limited to, the following: material, personal safety equipment, plywood, barricades, warning lights, grounding clusters, "GROUND CLUSTERS INSTALLED" signs, blowers, oxygen and combustible gas monitor, generators, fire extinguishers, tools, and testers in accordance with this specification and as required to complete the work. SNL will provide only tap box grounding links as stated in Part 2, Section 2.05A of this specification.
 2. To avoid nonproductive outages, cancellation of outages, and/or delays during outages the Contractor shall submit evidence to the SDR that he has available all the equipment and safety items, at the work location, required for the primary system work. This evidence will be required prior to the written outage notification.
 3. It is the Contractor's responsibility to maintain his equipment in a safe working condition and to insure that the equipment has been properly and routinely tested to meet and/or exceed the operations for which they were designed. As a minimum the equipment shall be inspected and tested under the conditions and at the intervals stated in the standard specification that governs the equipment's particular use.
 4. All equipment shall be used as per manufacturers' instructions.

1.04 QUALITY ASSURANCE

The latest issues of the following documents form a part of this specification as they apply to safety.

- A. American National Standards Institute (ANSI)
- B. American Society for Testing and Materials (ASTM)
- C. National Electrical Code (NEC) (NFPA 70)
- D. National Electrical Safety Code (NESC)
- E. National Fire Protection Association Codes and Standards (NFPA 70B and NFPA 70E)
- F. Occupational Safety and Health Act (OSHA)

PART 2 - PRODUCTS

2.01 HIGH VOLTAGE TOOLS AND TESTERS

High voltage tools and testers and their accessories shall be rated for the circuits and equipment to which they will be connected, and shall be suitable for the environment in which they will be used. Capacitive-type testers, which give a discrete analog or digital voltage reading, and are rated for the circuit voltage being tested, shall be used to test Elastimold T-splices, and other nonshielded points, where no means exist to directly connect testers to the circuit being tested. The tool must be able to test phase-to-phase and phase-to-ground conditions. Ross Engineering Corp. High Voltage AC Voltmeter, Model VM 50D (Digital) or VM 50E (Analog) fulfill these requirements. The Contractor shall check for proper operation of the test equipment immediately before and immediately after the test. If a known test source is not readily available, the Contractor shall have the appropriate "test-tester" to check for proper operation of the tester.

2.02 PROTECTIVE HEADWEAR

Head protection shall be worn while in and working below the bucket of a bucket truck or aerial lift, when working in a substation yard, and when working inside a confined space. Hard hats shall comply with ANSI Z89.1, "Personnel Protection - Protective Headwear For Industrial Workers - Requirements". Hard hats shall be Class "E" minimum for work on primary systems. Class E hard hats are intended to reduce the force of impact of falling objects and to reduce the danger of contact with exposed high-voltage conductors. Representative sample shells are proof-tested at 20,000 volts phase to ground.

NOTE: This voltage is not intended to be an indication of the voltage at which the headgear protects the wearer. Hard hats shall be labeled on the inside of the shell to indicate compliance with this standard. This labeling shall contain the name of the manufacturer, the ANSI designation, and the class of the hard hat. The head protection shall be examined by the craftsman for chips, cracks and/or any flaws in the material or workmanship prior to each use.

Personal Protective equipment shall comply with NFPA 70E, Table 3-3.8, "Standards on Protective Equipment."

2.03 EYE AND FACE PROTECTION

Protective equipment for the eyes or face shall be used where there is danger of injury to the eyes or face from electrical arcs or flashes, or from flying objects or falling objects from an electrical explosion. Eye and face protective equipment shall comply with ANSI Z87.1, "Practice for Occupational and Educational Eye and Face Protection." All protectors shall bear a legible and permanent "Z87" logo to indicate compliance with this standard. If the eye or face protection devices exhibit broken parts, heat distortion, or excessive scratches on the lens, it shall not be used.

Personal Protective equipment shall comply with NFPA 70E, Table 3-3.8, "Standards on Protective Equipment."

2.04 RUBBER PROTECTIVE EQUIPMENT

This section lists the requirements for rubber protective equipment that is used for protection of workers from accidental contact with energized electrical conductors, equipment, or circuits. This includes, but is not limited to, RUBBER INSULATING BLANKETS, RUBBER INSULATING COVERS (including insulator hoods, dead-end protectors, cable end covers, and miscellaneous covers), RUBBER INSULATING LINE HOSE, RUBBER INSULATING MATTING (for use as a floor covering), RUBBER INSULATING SLEEVES, and RUBBER INSULATING GLOVES. Rubber protective equipment shall be Class 1 minimum for work on circuits up to 5,000 volts phase to phase (Class 1 rubber protective equipment is rated for a maximum use voltage of 7500 volts phase to phase, however, as an added safety factor this equipment shall not be used on circuits above 5000 volts phase to phase). Class 2 rated rubber protective equipment is required for work on circuits from 5,001 volts phase to phase to 15,000 volts phase to phase (Class 2 rubber protective equipment is rated for a maximum use voltage of 17,000 volts phase to phase; however, as an added safety factor this equipment shall not be used on circuits above 15,000 volts phase to phase). Rubber protective equipment shall comply with the following applicable specifications:

- A. Blankets ASTM D1048-99, Standard Specification for Rubber Insulating Blankets
- B. Hoods ASTM D1049-98, Standard Specification for Rubber Insulating Covers
- C. Line Hoses ASTM D1050-99 (1999), Standard Specification for Rubber Insulating Line Hose
- D. Mats ASTM D178-01, Standard Specification for Rubber Insulating Matting
- E. Sleeves ASTM D1051-95 (2000), Standard Specification for Rubber Insulating Sleeves
- F. Gloves ASTM D120-95 (2000), Standard Specification for Rubber Insulating Gloves.

NOTE: LEATHER PROTECTORS SHALL BE WORN OVER RUBBER INSULATING GLOVES AT ALL TIMES.

Rubber protective equipment shall be marked clearly and permanently with the name of the manufacturer or supplier, the appropriate ASTM specification, type, class, and shall comply with ASTM standards for testing and testing intervals.

Personal Protective equipment shall comply with NFPA 70E, Table 3-3.8, "Standards on Protective Equipment."

2.05 GROUNDING CLUSTERS

Grounding clusters shall have ground clamps that are designed specifically for grounding the intended equipment. All ground clamps shall have been electrically tested by the

grounding equipment manufacturer for its intended use. The Contractor shall provide the manufacturer's certified test data upon request.

- A. Grounding clusters for tap boxes shall be as illustrated in Standard Drawing 101768/E1. Links will be provided by the SDR when requested by the Contractor for the construction of these grounding clusters.
- B. Grounding clusters for three phase live front equipment shall be assembled per the manufacturer's recommendations of 6 foot (1.829m), No. 2/0 AWG copper ground cables, terminal block and ground clamps. The cluster shall be rated at 21,000 Amps for 15 cycles minimum. Hastings Fiber Glass Products, Inc., grounding equipment catalog No. 6718 meets these requirements.
- C. Grounding clusters for three-phase overhead conductors shall be assembled of a 3 wire ground cluster with C-Head ground clamps utilizing pressure type-bolted terminals and 6 foot (1.829m) by 1-1/2 inch (38.1 mm) fiberglass poles. The cluster shall be rated 21,000 Amps for 15 cycles minimum. Hastings Fiber Glass Products, Inc. grounding equipment catalog No. 11196 meets these requirements. Interconnect ground cluster and C-Head ground clamps with No. 2 AWG (minimum) copper welding conductor, length as required to properly ground the system being worked on.
- D. Grounding clusters required for other equipment not listed herein (i.e., live-front and dead-front: transformers, switchgear, panelboards, and switchboards) shall have ground clamps which are specifically designed for the intended equipment. These clusters shall be rated at 21,000 Amps for 15 cycles minimum.

2.06 HOT STICKS AND SHOT GUNS

- A. Hot sticks and shot gun (insulating devices) shall be used to maintain the necessary distance between the electrician and the energized circuit or equipment (consider every circuit energized until it has been tested, locked, tagged and grounded). The hot stick and the shot gun shall have a minimum rating for the voltage being worked on.
- B. The hot sticks and shot guns shall be inspected They shall be visually inspected for:
 - 1. cracked or distorted end fittings
 - 2. hairline cracks or scars in the insulation
 - 3. blisters in poorly applied coatings that could trap moisture

If any of these conditions or other deficiencies are observed, the equipment shall not be used.

2.07 PROTECTIVE CLOTHING

Protective clothing shall be used and selected in accordance with the requirements identified and in accordance with NFPA 70E, latest edition, Part II, chapter 3.

PART 3 - EXECUTION

3.01 GENERAL

- A. No electrical work shall be performed on energized circuits unless specified on the contract drawings and/or as specified herein. Consider every circuit as energized until it has been locked out, tagged, tested, and grounded.
- B. In addition to the requirements listed in this section the contractor shall strictly follow the requirements of NFPA 70E-latest issue, "Electrical Safety Requirements for Employee Workplaces."
- C. Two qualified high voltage (HV) journeyman electricians with valid NMCID EL1-J certification (note not for inclusion - NMCID Rules and Regulations, section 8.4.1) who work for a contractor are required for all energized HV operations.
- D. The Contractor shall not (except for a safety emergency) de-energize any portion of the high voltage system that will cause an outage to any SNL facility. All switching will be performed by SNL maintenance personnel.

3.02 LOCKING AND TAGGING PROCEDURE

This section describes the procedure for locking out power systems for the protection of personnel and equipment. In addition, the requirements of NFPA 70E, Part II, Chapter 4, "Lockout/Tagout" shall be strictly followed.

NOTE: WHEN WORKING WITH SANDIA PERSONNEL IT IS THE RESPONSIBILITY OF THE CONTRACTOR PERSONNEL TO BECOME FAMILIAR WITH THE SNL STANDARD OPERATING PROCEDURE (SOP) FOR HIGH VOLTAGE WORK - #SP471158 SECTION 7.1.7 "LOCKING AND TAGGING".

- A. SNL Maintenance Organization will disconnect all power at its closest disconnect means.
- B. A positive means of locking out all power at their points of disconnect shall be provided. Locks shall be used by all personnel who could be endangered by the energization of equipment they are working on or near. Padlocks shall be installed at each disconnect point prior to the time of work on the de-energized equipment. Each person shall attach his personal lock so he is assured that the system is locked out. The locks shall be installed such that the system cannot be re-energized until all locks have been removed. If controls are located or designed to accommodate only one lock, a multiple-locking clasp shall be used.
- C. Lockout tags listing the name and phone number of the individual authorized to place and remove the lock, date service was locked out, and why service is locked out shall be affixed at each lockout location. The lockout tags will be used only to supplement the lockout and identify the purpose. They shall not be used as a substitute for a lock.

- D. Removal of a lock and tag shall be done only by the person who installed the lock and tag unless otherwise allowed per Section 7.1.7.C of SP471158.
- E. Locks, lockout clasps, and lockout tags are to be supplied, installed, and removed by the Contractor's personnel working on the system.

3.03 TESTING AND PHASING OF CONDUCTORS

A minimum of two high voltage electrical Contractor personnel shall be at the specific work location for testing of conductors for energization and for phasing of circuits. The person(s) actually doing the work in this section shall wear the proper voltage rated rubber insulating gloves, eye protection, and protective headwear. Nomex coveralls or 100% cotton clothing is highly recommended for testing and phasing operations.

- A. Check to verify that test equipment is working properly prior to, and after each use.
- B. Test equipment must be rated for voltage being worked on. Test equipment must be tested for proper operation before being used.
- C. Always test phase to phase and phase to ground when testing a circuit or equipment for de-energization. Test all combination of circuit paths each time you test a circuit. Fuzzing is not a permissible method of testing a circuit for energization.
- D. For voltages over 46 kV, use an approved voltage detector and a minimum of two insulating devices (insulated bucket truck and hot sticks) are required.

3.04 GROUNDING OF CONDUCTORS

After the "lockout" procedures described in this specification are performed, the procedures in this section shall be followed for all conductors that are to be worked, including new cables not connected. In addition, the requirements of NFPA 70B-1994 (Electrical Equipment Maintenance), Chapter 20, "De-energizing and Grounding of Equipment to Provide Protection for Electrical Maintenance Personnel" shall be strictly followed.

- A. Grounding is required when working on any HV circuit.
- B. The grounding of circuits and/or equipment is essential and no hands on work on the circuit and/or equipment shall begin until the circuit and/or equipment has been de-energized, locked, tagged, tested, and grounded.
- C. During the installation of grounding clusters two qualified journeyman electricians are required when installing grounding clusters, wearing safety glasses, hard hat, and properly rated HV insulated gloves.
- D. After the circuit has been de-energized and tested, attach one lead of the approved grounding cluster to the ground bar/conductor and tighten securely. Attach the other clamps to each phase using a shot gun if possible. Tighten securely.

- E. After grounding clusters are installed, the Contractor shall furnish and place a "GROUNDING CLUSTERS INSTALLED" warning sign in a conspicuous location at the grounding site.
- F. When work is complete, remove the grounding cluster and the "GROUNDING CLUSTERS INSTALLED" sign. Using a shot gun, if possible, disconnect the phase connections first, then remove the clamp from the grounding bar/conductor.
- G. If it is determined by the HV crew doing the work and SNL that it is impractical or will present a safety hazard to ground a circuit or piece of equipment, the grounds can be left off but the circuit must then be worked as if it were energized.

3.05 CUTTING INTO CABLE

The following steps shall be performed when cutting into cable that cannot be tested, at the specific work location, as being de-energized (for example, a cable that goes continuously through a manhole with no tap box).

- A. A minimum of two journeyman (NMCID EL-1J certificate) HV electrical contractor personnel shall be at the specific work location for this procedure. The person(s) actually doing the work in this section shall wear rated rubber insulating gloves, eye and face protection, and protective headwear.
- B. The cable to be cut shall be identified as positively as possible. Lockout, tag and ground the cable at the point of disconnect according to the requirements of this specification.

NOTE: Utilize a suitable penetrating device such as a **SPIKING CLAMP**, or a **REMOTE ACTUATED CABLE CUTTER** to allow the electrician to remain outside the manhole or confined space while cutting or penetrating the cable.

- C. Securely ground the penetrating device with No. 2/0 AWG copper ground cable and a ground clamp to a grounding point.
- D. Use hot sticks or appropriate insulating handles to install the penetrating device around the cable and while penetrating the cable. Maintain a safe distance when performing this operation.

3.06 CONFINED SPACE AND SUBSTRUCTURE WORK

- A. For the purpose of this specification, confined space is defined as an area large enough and configured in such a way that an individual can bodily enter and perform assigned work; has limited or restricted means for entry or exit; and is not designed for continuous occupancy. Confined spaces include, but are not limited to: storage tanks, vessels, manholes, bins, boilers, sewers, utility vaults, tunnels, pipes, pits, vaults, and in some instances, excavations.
- B. Requirements for confined space entry that shall apply are detailed under Division 1, Section 01065, "Environment, Safety and Health Requirements for Construction and Service Contracts."

- C. Fall Arrest and Retrieval Equipment: A full-body harness shall not be required when working in an energized electrical manhole. The Confined Space Entry Permit shall list all requirements and exceptions for fall arrest and retrieval equipment. Refer to Division 1, Section 01065, "Environment, Safety and Health Requirements for Construction and Service Contracts," when fall arrest and retrieval equipment is required.
- D. Fire Protection for Confined Space Work: Prior to entering any confined space containing oil-insulated equipment (i.e., transformers, switches), a 20 pound dry chemical fire extinguisher shall be made available outside the entrance. Fires in confined spaces are to be fought from the doorway or area access opening and only with the door or hatch in the open position. Personnel should immediately leave the room or area of a fire after using an extinguisher.
- E. Protection of Equipment and Material in Electrical Manholes/Vaults: Contractor personnel shall not climb into or out of substructures by stepping on cable or hangers.

3.07 WORK ON ENERGIZED FEEDERS AND/OR EQUIPMENT

If there are no instructions on the drawings detailing work that may be done with energized feeders and/or equipment, the following table shall be followed.

TABLE
Work on Energized Feeders and/or Equipment in Substructures

<u>Work Description</u>	<u>*Circuit Status During Work</u>
1. Overhaul of a cable tap box	R
2. Inspection of tap box interior	R
3. Inspection of tap box exterior	E
4. Checking cable current	E
5. Inspection of cables and substructure interior	E
6. Terminating cables into tap boxes or switches	R
7. Rearranging position of cables on racks	P
8. Splicing of cables or terminating stress cones	P
9. Pulling in new cables	D
10. Pulling out old cables	D
11. General clean-up of bottom of substructure	E
12. Pumping out water from substructure	E
13. Working on substructure cover or ring	E
14. Taping cables for fire protection	P
15. Hi-pot testing of cables	P
16. Hi-pot testing in tap boxes	R
17. Labeling cables (if cable rearrangement is required)	P
18. Labeling cables (if cable rearrangement is not required)	E
19. Voltage testing of cables for phasing	N1

***CIRCUIT STATUS LEGEND**

- E All cables may be energized during all work.
- P Only cables being worked on shall be de-energized.
- R All cables attached to equipment being worked on shall be de-energized.
- D Plywood (1/4-inch minimum) and/or rubber blankets may be installed to protect existing cables and tap boxes when installing new cable without de-energizing the existing feeders. Factors to be considered, include but are not limited to, manhole size, and location of rigging equipment.
- N1 Only feeders that are being phased will be re-energized.

END OF SECTION

ATTACHMENT SP471158

Locking and Tagging from Standard Operating Procedures for High Voltage (601-115K VAC) Electrical Work at Sandia National Laboratories, Section 7.1.7.

When HV electricians are working on or near circuits or equipment under circumstances in which the unexpected movement of parts or the charging of electrical conductors could cause injury to personnel or damage to equipment, the following precautions for isolating and disconnecting all energy sources and locking and tagging shall be taken:

A. Lockout/Tagout Sequence

1. Conduct a survey to locate and identify all isolating devices to be certain which switch(s), or other energy isolating devices apply to the equipment or circuit to be locked/tagged. If questions arise during the survey on the isolation of a device, contact the management in 7811 or 7816 for assistance.
2. All circuits and hardwired equipment shall be provided with a positive means of locking out all power or treated as being energized. For older installations, see Section 7.1.7A3.
3. Any device that will not accept a lock can be tagged out by utilizing a tag and isolating the conductors from the source. Isolation of the conductors shall be done by one of the following methods: disconnecting, taping, and tagging the conductors; removing the fuses; or racking out and tagging the circuit breaker. No lock will be required but this device shall be reported to supervision and steps taken to have a lockable disconnecting means installed if possible. For devices that are not designed to accept a lock and it is not feasible to physically remove the conductors to isolate the circuit, and is located in an inaccessible location or made inaccessible (i.e., cutouts on a pole) shall be tagged only.
4. Notify users affected by the lockout of a circuit that the system will be out of service until the work is completed.
5. Shut down energized machines and equipment using normal shutdown procedures prior to locking out and tagging out a circuit.
6. Disconnect all electrical power at its nearest disconnect point.
7. Test to make sure that the circuit is de-energized.
8. Securely lock the disconnecting means so that only the person(s) who is exposed may allow the power to be reapplied by removing his respective lock. Multiple lockout devices shall be used when it is necessary for more than one employee to work on the system (machine or equipment). Each affected employee shall then install his own lock. Each employee shall have his own lock that is keyed differently from all other employees locks. Only one key is

allowed for each lock. Each lock shall have an approved band with the employees last name printed on this band.

Note: Locking out a control circuit, which in turn, shuts off power is not acceptable or approved. Locking shall occur at all locations where power enters a machine or piece of equipment (including the power to the controls) such as the main electrical disconnect. The controls of the equipment being locked out/tagged out shall be operated to confirm that the equipment is de-energized.

9. Each employee shall securely attach a tag to their own lock. The information on the tag shall include the employee's last name, organization number, date of installation, and the reason for the lockout or tagout. The tag shall be used to supplement the lock, not to take the place of a lock. Refer to the exception in 7.1.7A3.
10. Relieve, restrain, or otherwise render safe all potentially hazardous stored energy on the equipment that is being worked on.
11. If needed, implement additional safety measures such as removal of isolating circuit elements, opening of extra disconnecting devices, etc. to minimize inadvertent energization.
12. Retest to ensure that the equipment is still de-energized. When applicable, ensure that all personnel are clear and operate the control circuit to verify that the equipment will not operate. After checking the controls, be sure to return the control to the neutral or the off position.

B. Sequence for Restoring the Equipment to Energized State

1. Remove all tools, parts, and debris from the area that will be re-energized.
2. Notify any affected employees that the power is about to be restored.
3. If work cannot be completed in one work shift, do not remove the lock until your relief is present and is ready to install their own lock.
4. Remove lock and tag. Only the person who installed the lock and tag may remove them. Refer to the exception listed in Section 7.1.7C.
5. Operate the disconnect device to restore power.

C. Emergency Removal of a Lock and Tag

1. If a lock and tag has been forgotten by an employee who has gone home or is otherwise unavailable, the employee's supervisor shall be notified.
2. The supervisor shall make all reasonable efforts to contact the employee at their home to find out the status of work and why the device has not been removed.

3. The supervisor shall make a thorough inspection of the work location. During the inspection the supervisor shall make sure that the employee is not at the facility and that all other employees are clear of the equipment to be energized. The supervisor must perform steps 1 and 2 in Section B prior to removing a lockout/tagout that was installed by another employee.
4. If it is determined that the removal of the lockout tagout device and the energizing of the equipment will not endanger either employee or equipment, then the supervisor may order the removal of the lock and tag and energize the circuit.

NOTE: The supervisor removing the LOTO device assumes full responsibility for his actions.

5. The supervisor shall notify the employee prior to his starting work the next work day that the lock and tag have been removed and the system is energized.
6. Document the lock/tag removal, reason for the removal, and the discussion with the employee who left the devices on.

D. Isolation or Switching of System Where No Hands On Work is Involved

Management in 7811 may lock and tag out a system, but they must follow the steps listed in Sections 7.1.7 A, B and C.