

Louisiana State University

Office of Facility Services

Operating Instruction 4015

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SUBJECT: HIGH VOLTAGE SAFETY PROCEDURES

I. Procedures

- A. The campus high voltage distribution system is 4,160 volts. Distribution lines on LSU property off the main campus may be 13,800 volts. These voltages pose an immediate and life threatening danger. Proper procedures must be followed to prevent accidents.
- B. Prior to any work being performed on the high voltage distribution system, a pre-job planning meeting shall be held by the staff member in charge of the job.
- C. Safety will always be the first consideration and should never be compromised. Do not undertake a task that violates accepted safety practices.
- D. Each employee is responsible for maintaining their own personal safety equipment, including dielectric testing of gloves.
- E. Each employee is responsible for monitoring other members of the work crew. An employee should stop another employee from performing an unsafe act and explain the danger. An employee who observes another employee violating this policy is responsible for reporting the infraction to the Facility and Utility Operations department head. An employee should also report to the department head if they are asked to perform a task in violation of safety procedures.

II. Clearance and Switching

- A. When working on high voltage equipment or feeders, appropriate "Hold Out" tags will be used. Tags should be dated and initialed. Circuits or equipment with "Hold Out" tags shall not be energized until repair procedures are complete and circuit or equipment is checked to verify that all personnel, equipment and grounding are clear. Use of multiple "Hold Out" tags is acceptable if multiple crews are working on separate areas of the same circuit.
- B. All switching is to be performed by trained personnel wearing the appropriate protective equipment.
- C. All switching instructions given over the radio shall be repeated back for confirmation to prevent errors.
- D. No person, other than the person(s) performing the switching, shall be within twenty (20) feet of the equipment being energized until switching is complete.
- E. All switching activities (open or close) are to be visually confirmed.
- F. Grounding equipment is to be used whenever possible. Grounding is to be done prior to beginning repair work.
- G. All equipment/circuits are to be treated as energized until they have been properly tested and proven de-energized
- H. When possible, "Hold Out" tags are to be removed by the person who installs them
- I. When operating a switch, rubber gloves and a special fire resistant suit with face shield are to be worn. If switch can be operated with a "Hot Stick," the "Hot Stick" should be used. Employee is to move out of exhaust path and turn face away from switch, as much as possible
- J. When installing protective grounds, test circuit to ensure that it is de-energized. Install grounded end first and remove last.
- K. Due to the configuration of the circuits on the LSU campus, switches and transformers can be fed from multiple locations. Check the one-line diagram prior to switching to become familiar with the buss ties, double feeds, etc.

- L. When cutting a cable thought to be de-energized, use a grounded hydraulic cutting tool. Do not cut energized cable.
- M. Do not open a high voltage cabinet or switch enclosure unless rubber gloves and flame resistant clothing and eye protection are worn. Personal safety equipment may be removed only after circuit is proven de-energized and grounded where possible.
- N. When operating switchgear at substation, close and latch doors prior to switch operation.
- O. After completion of switching, record action in log book and re-pin the one-line at the Powerhouse to reflect the current status of the system.
- P. Prior to operating oil switches, check the oil level indicator. Do not operate if oil level is low. Do not operate if gas pressure is low.
- Q. Prior to operating gas switches, check the gas pressure indicator. Do not operate if gas pressure is low.
- R. When within two (2) feet of exposed conductors over 600 volts, rubber gloves, flame resistant clothing and eye protection are to be worn until proven de-energized and grounded where possible.
- S. Visually examine condition of insulation on energized conductors prior to handling. Handle only with rubber gloves while conductor is energized.
- T. All high voltage activities are to be staffed with a minimum of two (2) people. Each person is to "look out" for the other members of the crew. Each crew should have a radio in case an accident occurs.
- U. Do not operate non-load break switches energized if there is load on switch.

III. Personal Protective Equipment

- A. **Rubber Gloves**-Each high voltage employee shall be issued a pair of rubber gloves. It is the responsibility of each employee to keep gloves in good condition.

Prior to each use, glove is to be air tested. Air test by inserting the first finger of each hand in the glove at the cuff and then wrap the glove around the fingers. The trapped air in the glove will cause it to inflate, and in turn, expose a weak spot or hole in the glove.

Do not use damaged gloves. Rubber gloves are to be dielectric tested annually. Gloves are to be stored in protective bags.

- B. **Flame Retardant Shirts**-High voltage employees are to be issued flame retardant shirts. These shirts are to be worn at **all** times on the job. This includes call out situations.
- C. **Hard Hats**-Hard hats are to be worn whenever employee is in an aerial bucket. Hard hat is to be worn when employee is within 20 feet of operating aerial bucket.
- D. Failure to follow operating instruction will result in disciplinary action, up to and including, termination.