Energy Source Controls
“Switching & Tagging”

Allen Smith,
Safety Manager, ITC Holdings Corp.
Introduction

- The key to safety success in the electric power, generation, transmission and distribution environment is the proper planning of work.
- Employees performing work must have all pertinent information related to a job.
- This information is then disseminated through a job briefing to employees involved.
- Companies have a duty to provide information and properly administer the switching and tagging process.
1910.269 discusses the applicability of the standard to the electric power generation, control, transformation, transmission and distribution lines and equipment.

- The standard discusses training for all workers affected by this section
- Information transfer to ensure workers have the knowledge necessary to perform their work safely
- Medical services
- First Aid training
- First Aid supplies and kits
Job Briefing 1910.269(c)

- Hazards associated with the job
- Work procedures involved
- Special precautions
- Energy source controls
- Personal protective equipment requirements
1910.147 The Control of Hazardous Energy
This standard covers the servicing and maintenance of machines and equipment in which the unexpected energization or start up of the machines or equipment, or release of stored energy, could harm employees.

This standard establishes minimum performance requirements for the control of such hazardous energy.
1910.269(d)

- Hazardous energy control (lockout/tagout) procedures
  *Application.* The provisions of paragraph (d) of this section apply to the use of lockout/tagout procedures for the control of energy sources in installations for the purpose of electric power generation, including related equipment for communication or metering.

- Locking and tagging procedures for the de-energizing of electric energy sources which are used exclusively for purposes of transmission and distribution are addressed by paragraph (m) of this section.
De-energizing lines and equipment for employee protection.

Paragraph (m) of this section applies to the de-energizing of transmission and distribution lines and equipment for the purpose of protecting employees.

ITC is a transmission company and is impacted not by part (d) but part (m).

Why is part (m) different from part (d)?
T & D Application

- The T&D section for de-energizing lines and equipment is written to take into account external factors such as lightning/weather, car/pole accidents, etc.

- The Generation group does not have the same dynamic as the T&D group:
  - Disconnecting means are often located in remote areas.
  - Switching may involve several miles of lines and equipment.
  - Most companies have multiple crews working large areas at once.
Establishing a De-Energized Work Area

- System operators tasked with ensuring an area is de-energized for work to be performed without the use of hot line methods
- Switchmen designated to open and close disconnecting devices and report to system operator
- A de-energized area set up for workers to test for nominal voltage and install temporary protective grounds with bonds to create an EPZ for worker protection
- Person in charge (Protection Leader) designated to be in charge of the work site
De-Energized Work Area

- Employer is required to open all disconnecting means, such as switches, disconnectors, jumpers, and taps, through which **electrical energy** could flow.
- **Disconnecting means must be rendered inoperable if design permits**.
- Ensures against accidental closing of device.
- This rule requires the disconnection of known sources of **electrical energy only**.
- Install tags to indicate employees at work.
Questions to Consider

Terminology

- Clearance for Work – OSHA terminology. What other words do companies use in place of “Clearance”?

- Person in Charge – OSHA. Does your company have another word or title for this duty?

- Red tags, Yellow tags, white tags. Should tags be discarded after use? Should tags have unique identifiers? What should be written on the tag itself?

- Do you use uniquely identified tags for audit purposes?
Questions to Consider – cont,

De-energizing Lines and Equipment

- Would you consider the establishment of a de-energized work area as providing “protection” for the worker?

- If so, why or why would you not consider this to be protection for the worker?

- If you had a clearance established and need to make some changes for emergent work, is it okay to notify everyone, remove tags and extend the clearance with new tags with the grounds still in place?
Questions to Consider—cont,

Clearance

- Is it okay to extend a cleared area to accommodate new work?
- Can you leave grounds in place or transfer them into the jurisdiction of the system operator in order to change the scope of the de-energized area?
- What if another company requests that grounds be installed?
- Can the person in charge be a phone call away from the work area?
Control Circuits

- Do you include control circuits as a part of your switching and tagging sequence?

- Do you place “Do Not Operate” tags on these control circuits?

- What color is used for the tags and why?
Protection Accomplished & Applied

- Protection is not accomplished by simply establishing an electrically de-energized area for worker safety.
- The line and equipment must be tested with an appropriate tester for the presence of nominal voltage after establishment of Clearance.
- Personal Protective Grounds (Temporary Protective Grounds) shall be installed after testing has been completed.
- Worker protection is attainable with the completion of all three steps.
Protection Accomplished & Applied

- Worker protection is accomplished with the successful communication with all workers in the Job Briefing
  - Hazards Associated with the Job
  - Work Procedures
  - Special Precautions
  - Energy Source controls (Clearance for Work held by the person in charge at the job site)
  - Personal Protective Equipment (includes temporary protective grounds, inspected and installed under the direction of the person in charge)
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