



OCTOBER 2023

TOOLBOX TALKS

Flagging and Operational Barriers

While executing energization switching order at Battery Energy Storage Facility it was discovered that medium voltage cables terminated inside a sectionalizing cabinet were mislabeled and the incorrect equipment was energized.

The battery energy storage facility and equipment was cleared of all personnel not involved with the energization process and all Power Conversion System (PCS) had flagging and operational barriers installed which eliminated the potential for injury and any inadvertent contact with the energized electrical source of energy. Through the investigation it was recognized that the permanent labels on the circuit were incorrect resulting in the wrong equipment becoming energized. It was recognized that the equipment was labeled and identified incorrectly during the process of transitioning from temporary labels to permanent labels as there was an interruption during this overall work process.

Using self-checking, an individual distinctly marks the correct component with a flagging device that helps the individual visually return to the correct component during the activity or after a distraction or interruption. Individuals can also use flagging to identify similar components that are not to be touched or manipulated.

Flagging involves highlighting a component in such a way to improve the chances of performing actions on the correct component. Operational Barriers are used to mark or cover components that are not to be worked or manipulated during an evolution. Flagging & Operational Barriers is particularly helpful when there are several similar components in close proximity to those affected by the work activity. Several events have been attributed to an individual starting an activity on one component, taking a break or becoming

otherwise distracted from the component, and performing manipulations on the wrong component.

When to use this tool:

- When handling a component near similar-looking components
- While working on a component that will be manipulated multiple times
- Performing two or more manipulations of several similar components in close proximity to those affected by the work activity
- During work near “trip-sensitive” or otherwise risk-important equipment
- When the need for flagging is identified during the pre-job briefing

Identify the component to be flagged using self-checking. Identify the component that will have a flag or an operational barrier by using other HU tools such as self-check or peer-check. Supervision is encouraged to approve the flagging devices. Devices such as colored adhesive dots, ribbons, colored tags, rope, magnetic signs, or orange electrical tape may be used for this purpose. Flagging devices should not interfere with facility equipment, including the observation of meters and other system indicators.

Flag the designated component to be worked on using an approved device. Flagging remains in place while work is in progress. Place Operational Barriers on components NOT to be manipulated or worked on. Attach the flag or operational barrier to the designated component using devices that will remain securely in place, such as colored adhesive dots, ribbon, colored tags, rope, magnetic placards, colored electrical tape, etc. Flag critical steps in a work procedure so that the critical step cannot be overlooked.

One powerful human performance improvement tool is understanding how to implement flagging and barriers as operational controls to mitigate the error likely situation of starting an activity on the wrong but similar looking equipment component or taking a break or being distracted from one component and subsequently going back to work on an adjacent, similar look alike—but wrong—component.

How is your team flagging and/or utilizing barriers to eliminate error likely situations?

