Best Practice #120

Best Practice Title: Definitions/Guidance for DOE O 232.2A Occurrence Reporting and Processing of Operations Information, Occurrence Reporting Criteria, Group 2, Subgroup D, Hazardous Energy
Facility: DOE Complex

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Brief Description of Best Practice: Provides definitions and guidance for the subjective terms in the hazardous energy occurrence reporting criteria for DOE O 232.2A.

Why the best practice was used: Subjective occurrence reporting criteria can lead to inconsistent reporting of occurrences across the complex making trending and analysis difficult.

What are the benefits of the best practice: Provides consistent occurrence reporting across the DOE complex and improves trending and analysis.

What problems/issues were associated with the best practice: None.

How the success of the Best Practice was measured: Hazardous energy occurrences for the DOE complex are trended and analyzed monthly by the EFCOG Electrical Safety Task Group (at NREL). This includes occurrences not specifically categorized as a Group 2, Subgroup D, but identified for analysis using key words associated with hazardous energy. Success will be measured by the number of non-Group 2, Subgroup H, occurrences identified using the key word search criteria.

Description of process experience using the Best Practice: Will be evaluated monthly by the EFCOG Electrical Safety Task Group (at NREL).

Subgroup H Hazardous Energy

#	RL	Criterion
(1)	H	Any unexpected or unintended personal contact (e.g., burn, shock, injury, etc.) with a hazardous energy source (e.g., live electrical power circuit, mechanical hazards, steam, pressurized gas, etc.).
(2)	L	Any failure to follow a prescribed hazardous energy control process that results in potential worker exposure to uncontrolled hazardous energy (e.g., live electrical power circuit, powered mechanical hazards, steam, pressurized gas, etc.); OR any discovery of an uncontrolled hazardous energy source (e.g., live electrical power circuit, powered mechanical hazards, steam, pressurized gas, etc.). This criterion does not include discoveries made by zero-energy checks and other precautionary investigations made before work is authorized to begin.

Definitions/Guidance

1. **personal contact** – any intrusion into the restricted approach boundary or the arc flash boundary that results in a shock, burn, or other injury. This includes intrusions with tools or equipment that present a conductive (suitable for carrying electric current) path back to the person, e.g. uninsulated hand tools and back hoes.

2. **unexpected or unintended personal contact** – any personal contact without PPE prescribed by a shock or arc flash hazard analysis.

3. **hazardous energy source(e.g., live electrical power circuit).** – a source that exceeds the thresholds for a shock (Table 1), arc flash (Table 4), or thermal hazard(Table 5) established in the EFCOG/DOE Electrical Severity Measurement Tool, Rev 4, 2017.

4. **uncontrolled hazardous energy (e.g., live electrical power).** – not suitably guarded, insulated, or isolated (locked, tagged, and absence of voltage verified).

6. **zero-energy check** – absence of voltage check, verification of conductor/circuit part de-energization using an adequately rated voltage detector.

7. **prescribed hazardous energy control process** – a 10CFR851 source requirement identified in the local approved worker safety and health plan (WSHP), e.g. NFPA 70E and OSHA). It does not include local implementing procedural requirements not tied to a source requirement.