

## 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

**Point of Contact:**

Michael D Hicks, 208-526-3724, [hicksmd@id.doe.gov](mailto:hicksmd@id.doe.gov)

Greg Christensen, 208-526-5380, [gregory.christensen@inl.gov](mailto:gregory.christensen@inl.gov)

Richard Denning, 208 533-4279, [denningrw@id.doe.gov](mailto:denningrw@id.doe.gov)

Mark Mcnellis, 505-845-4895, [msmcnel@sandia.gov](mailto:msmcnel@sandia.gov)

**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 D, 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)	D	Any <b>unexpected or unintended personal contact</b> (e.g., burn, shock, injury, etc.) with a <b>hazardous energy source</b> (e.g., <b>live electrical power circuit</b> , mechanical hazards, steam, pressurized gas, etc.).
(2)	L	Any failure to follow a <b>prescribed hazardous energy control process</b> that results in potential worker exposure to <b>uncontrolled hazardous energy</b> (e.g., <b>live electrical power circuit</b> , powered mechanical hazards, steam, pressurized gas, etc.); OR any discovery of an uncontrolled hazardous energy source (e.g., <b>live electrical power circuit</b> , powered mechanical hazards, steam, pressurized gas, etc.). This criterion does not include discoveries made by <b>zero-energy checks</b> 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.