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# THE HECA RULEBOOK

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## Definitions

<i>Crew</i>	One or more workers assigned to complete a task.
<i>Task</i>	A scope of work that must be completed in a specific location and within a specified time. Tasks are distinguished by changes in materials, equipment, tools, location, or the competency required to perform the work.
<i>Proximity</i>	Condition where workers, hazards, or tasks are within line of sight of each other (visual proximity). When work tasks are in proximity, they may be observed at the same time from the same vantagepoint. In the case of hazards, a proximal hazard is relevant if there is a reasonable possibility that workers could interact with the hazard.
<i>Equipment</i>	Large mechanical tools or vehicles that are used by the crew to perform a task that exceed the size and complexity of typical unpowered hand tools. Equipment examples include bucket trucks, excavators, forklifts, trenching machines, and compactors.
<i>High Energy Hazard</i>	A hazard that exceeds 500 foot-pounds <sup>1</sup> of physical energy. These hazards are most likely to cause a SIF if an employee contacts the energy. The 13 high-energy icons represent common high-energy hazards, but do not represent all high-energy hazards. Some high-energy hazards require energy computations (e.g., falling tools, pipeline pressure). High-energy hazards are relevant and should be recorded if there is reasonable potential that employees could interact with the hazard in the normal course of their work.
<i>Direct Control</i>	A physical safeguard that is: (1) specifically targeted to the high-energy source, (2) effectively mitigates exposure to the high-energy source when installed, verified, and used properly, (3) is effective even if there is unintentional human error during work that is unrelated to the installation of the control.
<i>Success</i>	A high energy hazard observed with corresponding direct control.
<i>Exposure</i>	A high energy hazard that is observed without a corresponding direct control.
<i>Field Visit</i>	The process of visiting a work site, observing conditions, and engaging with the workers.
<i>Energy-based Observation (EBO)</i>	An observation focused on identifying high-energy hazards and assessing direct controls during a field visit. One EBO can result in multiple HECA scores when tasks or crews change during the observation period.
<i>High-Energy Control Assessments (HECA) score</i>	The percentage of high-energy hazards with a corresponding direct control.

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<sup>1</sup> Previous research identified the high-energy limit as 1500 joules. To be conservative and relevant to US workforce, EEI chose a 500 foot-pound threshold.

# HECA Rules

1. HECA is based on observations of active work and not the assessment or classification of an incident or the review of paperwork alone.<sup>2</sup>
2. Each HECA measurement must correspond to one crew performing one task during one working day<sup>3</sup>. Multiple crews and/or tasks require multiple HECA measurements.
3. If a crew performs more than one task during the observation period, a separate HECA measurement must be made for each task.
4. When two or more crews are working in proximity to one another and performing the same task, they must be grouped as one HECA measurement.
5. If two or more hazards have the same high-energy source and the same direct control, they must be combined as one entry.
6. If there is a deficiency or missing coverage of a direct control<sup>4</sup>, the entry must be recorded as Exposure.
7. Assessments must only be made based on work as it is observed. Hypothetical, anticipated, or speculated conditions should not be considered in the scoring.
8. One object may involve more than one high-energy hazard.<sup>5</sup>
9. Observers must make reasonable efforts to verify that direct controls are installed and used properly.
10. The definitions of high energy and direct control must be strictly applied. The definitions are maintained by EEI's Community of Practice (COP).

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<sup>2</sup> Incidents involve the release of energy. Incidents should be assessed and classified using the SCL model.

<sup>3</sup> If tasks duration exceeds one working day, a separate HECA assessment should be made for each working day observed.

<sup>4</sup> A direct control requires full coverage. Examples of deficiencies include incomplete coverage of flame-resistant (FR) clothing, part of the worker's body (face, chest, etc.) exposed to an electrical hazard, or partial coverage of power lines with cover-up.

<sup>5</sup> For example, a suspended load often involves gravity (falling load) and motion (swinging load).

# When Observing Equipment

- If two or more pieces of equipment working on the same task are reasonably similar, they should be counted as one entry.
- When equipment is considered part of a direct control, make a reasonable effort to verify that the equipment is maintained properly.
- Consider hazards related to the interaction between the equipment and the environment (e.g., equipment tracking/moving in proximity to workers on foot)
- Consider whether equipment is operating within its engineered limits (e.g., within lift capacity and boom limits, or on stable ground).
- Hazards related to the integrity of equipment such as electrical, engine, and hydraulic systems are out of scope.

## Out of Scope

Although important, the following elements are not included in HECA.

- Hazards related to the integrity of equipment such as electrical, engine, and hydraulic systems.
- Hypothetical or anticipated work situations.
- Exposure of the public to hazards.
- Workplace violence.
- Mental health and well-being.