Brookhaven National Laboratory

U.S. DEPARTMENT OF ENERGY

TAKE FIVE for Safety-

Roles related to Electrical Work in C-AD

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Qualified Electrical Worker

- *Qualified Electrical Worker (BNL)*

- *Qualified person*. One who has received training in and has demonstrated skills and knowledge in the construction and operation of electric equipment and installations and the hazards involved (OSHA).

- OSHA Code: Only qualified persons may work on electric circuit parts or equipment that have not been deenergized under the procedures of paragraph (b) of this section. Such persons shall be capable of working safely on energized circuits and shall be familiar with the proper use of special precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools.

Electrical Competent Person

A person who meets all the requirements of a Qualified Electrical Worker, as defined in the Electrical Safety Subject Area and who, in addition, is responsible for all work activities or safety procedures related to equipment (including custom or special equipment) and has detailed knowledge regarding the exposure to electrical hazards, the appropriate control methods to reduce the risk associated with those hazards, and the implementation of those methods. (BNL)

NFPA 70E Article 350: (Competent Person)

Authorized/Primary Authorized Employee

- *Primary Authorized Employee* An Authorized Employee who is designated by their department/division to coordinate complex-group lockout/tagout procedures. The Primary Authorized Employee coordinates workforces and ensures continuity of lockout/tagout protection for all involved (both Authorized and Affected Employees). They are the first to apply their lock and the last to remove their lock from a group lockout/tagout (BNL).
- *Authorized employee*. A person who locks out or tags out machines or equipment in order to perform servicing or maintenance on that machine or equipment. An affected employee becomes an authorized employee when that employee's duties include performing servicing or maintenance covered under this section (OSHA).

Work Control Coordinator

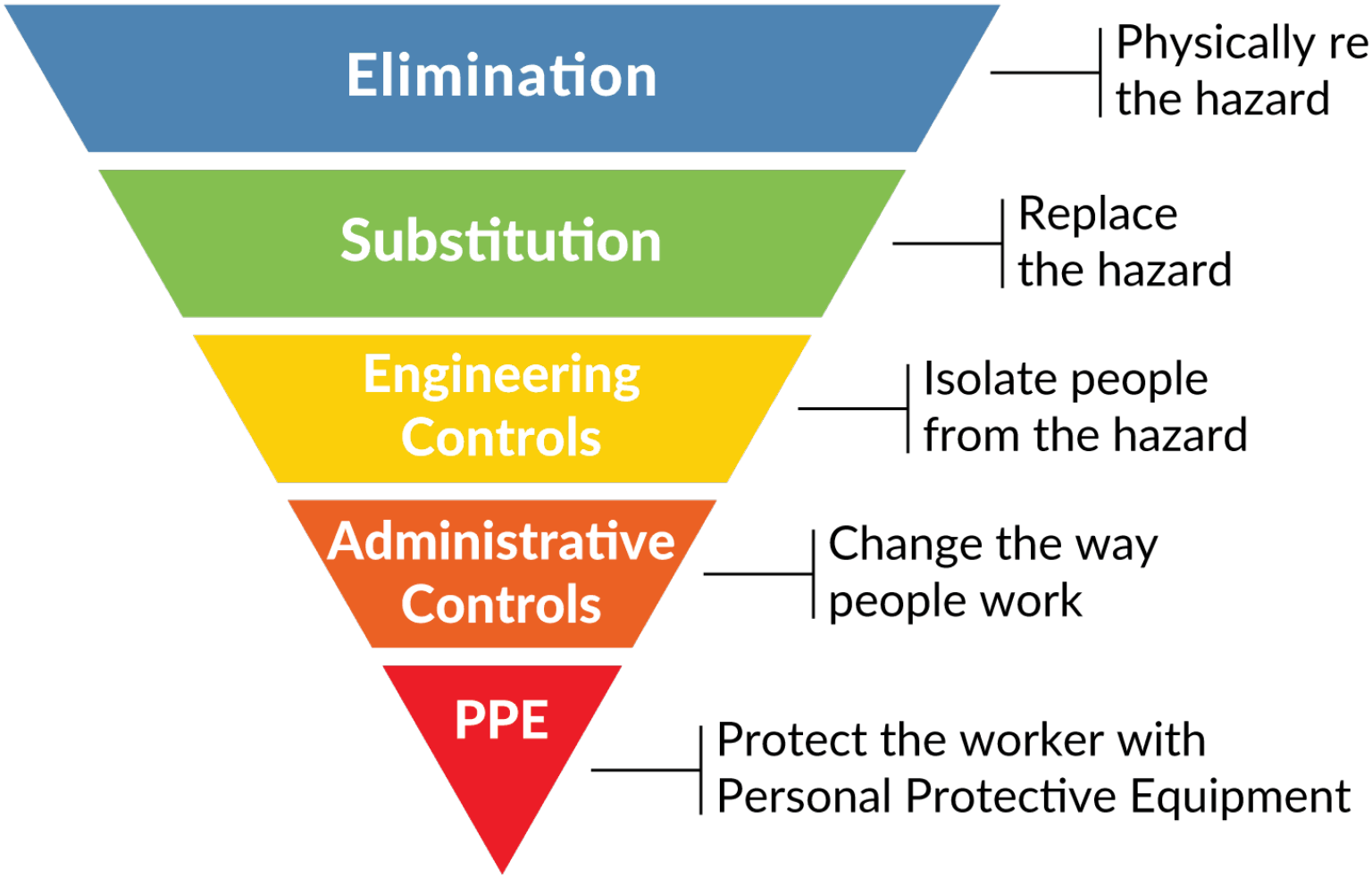
- Line Management appoints *Work Control Coordinators* for each area or appropriate group within their Line Organization to fulfill the requirements for planning in the operations and construction sections of the Work Planning and Control subject area. (BNL)

- *Core Electrical Work Control Coordinator*: WCCs appointed by C-AD Management for the planning of electrical work in the department.

Electrical Work in C-AD Must Be…

- Screened and Planned to meet Work Planning and Control requirements by a "*Core Electrical Work Control Coordinator*"
- Planned and briefed by an *Electrical Competent Person* in a documented plan (Electrical Planning and Briefing Form)
  - Ensures understanding and communication of tasks, hazards, risks and controls
- For service/maintenance work, or if work is on or near exposed conductors, Locked and Tagged Out by an *authorized person* or persons. If group LOTO, by a *Primary Authorized Person*. (LOTO Steps and Instructions.)
  - Ensures electrically safe work conditions
- Performed by *Qualified Electrical Workers*

Hierarchy of Controls



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General, High-Level Goals when Planning Electrical Work

- ELIMINATE Electrical hazards of the work through Planning and Execution of Electrical Safety and LOTO requirements in SBMS (establish and perform work in an Electrically Safe Work Condition, per the Electrical and LOTO Plans.
- Use Engineering and Administrative Controls, and PPE.
  - These layers are:
    - Needed to reduce residual risk; and
    - Required by NFPA 70E and SBMS.
- The right combination of controls will provide full protection for workers performing all work tasks.

Some key questions to address through planning

- Can all tasks be performed in an Electrically Safe (Verified Zero-Energy) work condition?

- If Not…
  - What steps are needed to ensure safety and compliance during diagnostic work?
  - What steps are needed for temporarily removing LOTO?
  - What combination of controls is being used to protect the workers?