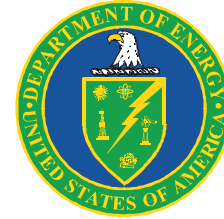


EFCOG ELECTRICAL SAFETY IMPROVEMENT PROJECT AREA #6

Controlling Energized Work Hazards

EFCOG ESIP MEETING
OCTOBER 10-12, 2006
IDAHO FALLS, ID.

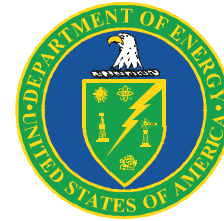


ESI Project #6 Team Members

DOE Lead: Chip Lagdon, HQ-ESE

EFCOG Leads: Paul Case, FH
Dave Mobley, C2M

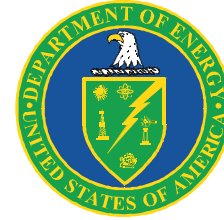
EFCOG Team: Richard DeBusk, LBNL
Jim Jacobson, INL
Clyde Saunders, C2M
James Watlers, CWI
Billy Joe Baptist, CWI
Larry McMawaman, CWI
Mike Park, BEA
Blaine Atkinson, BEA
Andrew Trosty, BEA
Mike Bird, BEA
Bobby Gray, FH



ESIP#6 Scope

Minimize or eliminate energized electrical work to prevent injury and ensure worker safety

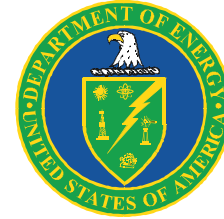
- i Submit recommendations for establishing consistent criteria for justifying energized electrical work
- i Develop a consistent Energized Electrical Work Permit
- i Submit "Best Practices" to EFCOG for posting on "Best Practices" webpage



ESIP # 6: Develop a consistent Energized Electrical Work Permit and User Guide

A "draft" EEWP and user guide was issued which complies with Article 130.1 and Annex J of NFPA 70E

- i Comments received indicate additional effort may be necessary to define "Approval Authority"
- i Identify and review unique hazards and controls: i.e. Radiological PPE/Respiratory Use



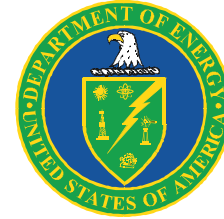
ESIP # 6: Establish consistent criteria for justifying energized electrical work

- i Electrical equipment shall be de-energized to the maximum extent feasible before allowing personnel to cross the restricted, prohibited approach, or flash protection boundary to perform work on the equipment.

Note:

- i Safe Approach Distance (Qualified Person). The greater of: the Flash Protection Boundary or Restricted Approach Boundary.
- i Safe Approach Distance (Unqualified Person). The greater of: the Flash Protection Boundary or the Limited Approach Boundary
- i Before crossing the safe approach distance an Energized Electrical Work Permit, approved by appropriate senior management is required.

CONTINUED



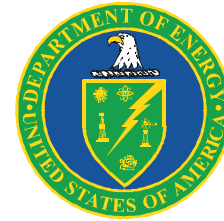
ESIP # 6: Establish consistent criteria for justifying energized electrical work

- | The only work that can be performed on or near energized equipment, without an Energized Electrical Work Permit is the following:

NOTE: The following exceptions require identification of known and potential hazards (shock and arc flash), identification of all required PPE and insulated tools, and identification of protective measures and equipment to be used when performing the work.

- | Working on energized parts that operate at LESS THAN 50 VOLTS potential
- | Testing and calibration of electrical equipment that can only be performed with the circuit energized under an existing approved procedure
- | Performing voltage and zero energy checks for lockout/tagout operations
- | Performing troubleshooting that requires the equipment to be energized.

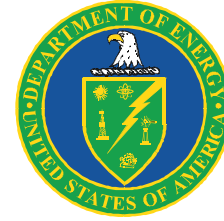
NOTE: Testing and troubleshooting are limited to those actions necessary to perform electrical measurements.



ESIP # 6: Submit "Best Practices" to EFCOG for posting on "Best Practices" webpage

Provide presentation related to potential hazards that are associated with grounded conductors

Several ORPS reports related to incidents involving neutral conductors indicate need for increasing hazard awareness and methods of protection from electrical shock



Project # 6 – A Look Ahead

Deliverables for Project Completion:

Provide guidance criteria for justifying and controlling energized Work

Provide EEWP and User Guide

Populate EFCOG “Best Practices” webpage with information for safe work practices associated with grounded conductors