December

January

March

February

April

May

June

July

August

September

ASSE GULF COAST CHAPTER

ENERGY CORRIDOR SECTION

LESSONS-LEARNED

ELECTRICAL SAFETY

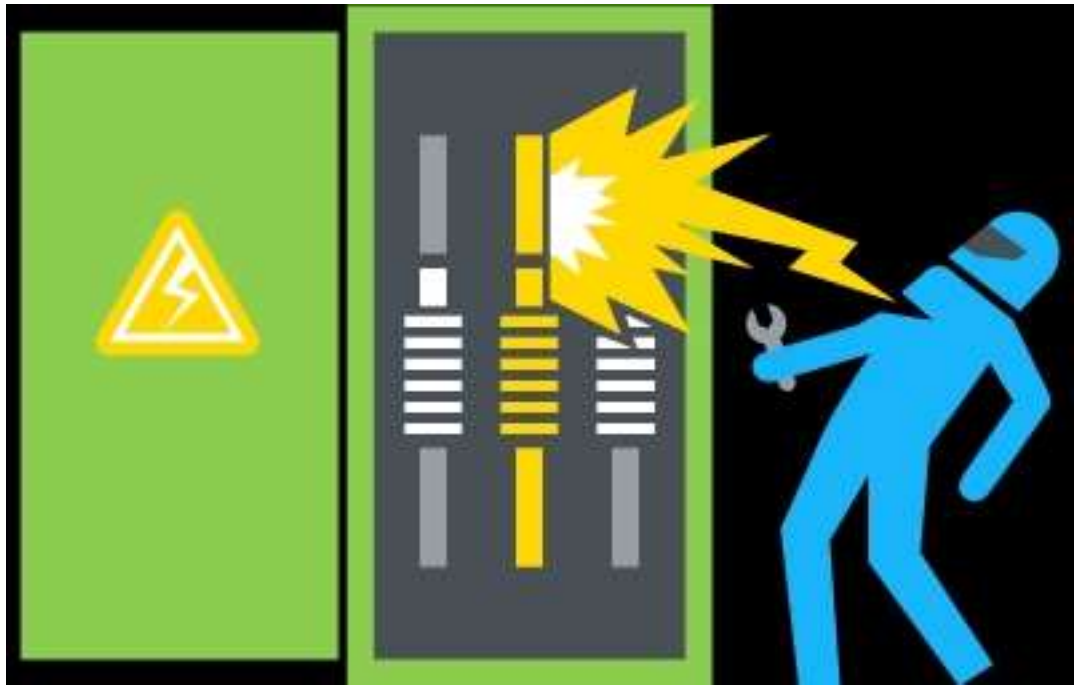
Tabitha Laser / 3-9-17

This slide, which has images representing the themes is only for viewing – not for publication.

Event Description

2014 - Arc Flash Incident

- Fault finding testing work on a 34kv circuit electrical cabinet.
- No injuries; Arc flash PPE Damaged



Event Significance

Current (Without Prevention Measures)

- Likelihood = Likely
- Impact = Minor (WC: Major)
- Risk Ranking = High (WC: Very High)
- ALARP = YES / **NO**
- Risk Acceptable = YES / **NO**

		Slight injury / health effects	Minor injury / health effects	Major injury / health effects	Permanent Total Disability or one fatality	Multiple fatalities
		Not Significant	Minor	Moderate	Major	Severe
Expected to occur regularly in normal circumstances	Almost Certain	Medium	High	Very High	Very High	Very High
Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
May occur at some time	Possible	Low	Medium	High	High	Very High
Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

Event Cause(s)

- The cable that the Operator grabbed with the "hot stick" had not been properly locked, tagged out, grounded or verified as having zero energy prior to his attempting to attach a grounding wire to it and that it was still energized.
- This incident occurred at a padmount which had a cable that was also improperly labelled when it was installed, resulting in the incorrect cable being disconnected.
- The Operators had locked and tagged out the collector circuit a few days previous to the incident and disconnected the cables in the padmount where the incident occurred, then re-energized the circuit which partially energized the padmount.
- Not grounding the cables in the padmount was the single omission that prevented the collector circuit breaker from functioning as it would have once the circuit was re-energized.

Padmount
(not from actual incident)

Event Prevention

Elimination:

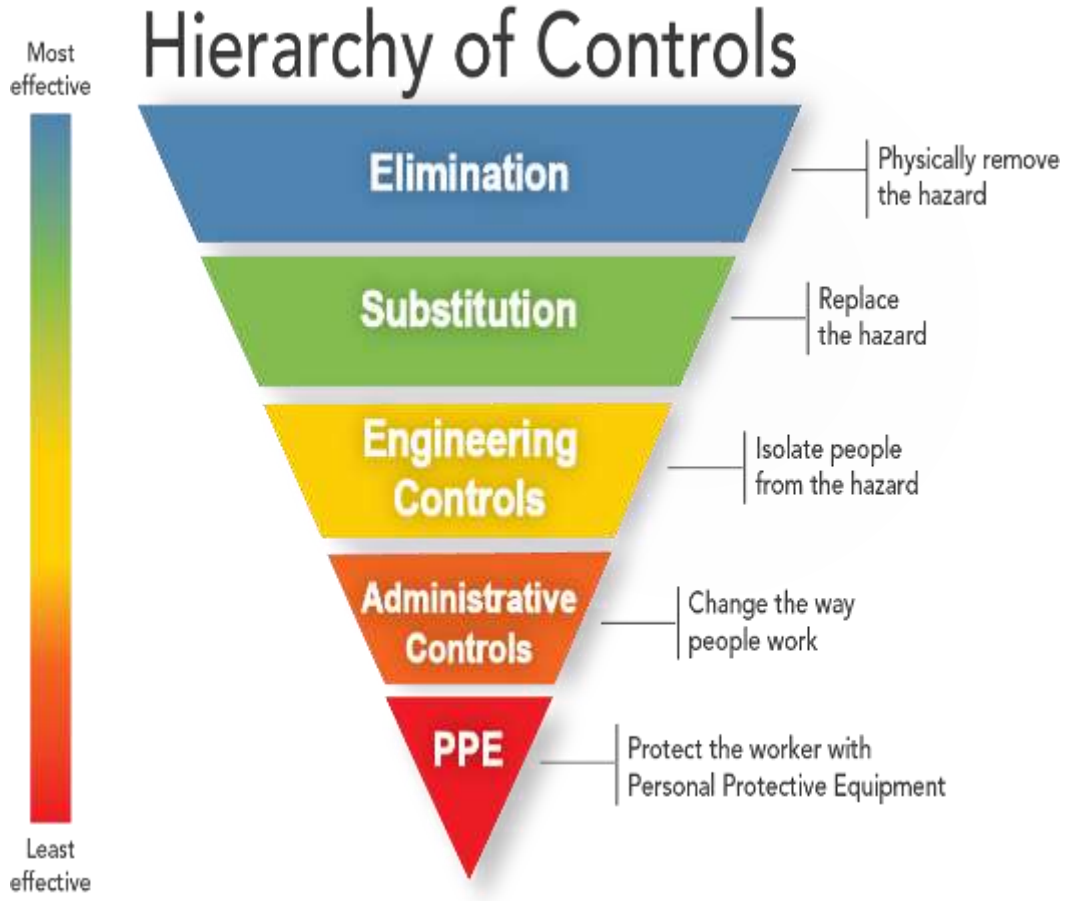
- Control of Work / Lockout Tagout not executed
- Worked on energized equipment when not necessary.
- Did not tag, ground or verify zero energy on disconnected cables being locked and tagged out.

Administrative Controls:

- Risk Assessment not done for this work
- Cables that were mislabeled during the construction phase.
- Failure to transfer Lockout / Tagout ownership between different parties involved in the work.
- Failure to recognize various warning signs where personnel should have exercised their "Stop Work" authority.
- Operators competency had not been properly assessed prior to doing the work using the Management of Change process

PPE:

- Proper PPE was worn, which likely saved the Operator's life!



Summary

1. Always use the proper PPE.
2. Maintain rigor in CoW practices and continually look for opportunities to improve (Incorporate operator's feedback, info from line verification audits, etc.).
3. Do not rely on labelling and visual disconnect only for verification of "zero energy".
4. Do not work on energized equipment unless there is no other alternative and those risks have been mitigated.
5. Apply MoC consistently, and verify competency of Operators for specific tasks.
6. Encourage, reinforce and support all worker's "Stop Work Authority" rights.

National Fire Protection Agency 70E Updates…

Are You Compliant?

Event Significance

(Post Prevention Measures)

- Likelihood = Rare
- Impact = Not Significant
- Risk Ranking = Low
- ALARP = YES / NO
- Risk Acceptable = YES / NO

		Slight injury / health effects	Minor injury / health effects	Major injury / health effects	Permanent Total Disability or one fatality	Multiple fatalities
		Not Significant	Minor	Moderate	Major	Severe
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Could happen, but probably never will	Rare	Low	Low	Low	Low	Medium

2017 Topics

- January: Chemical Safety
- February: Working at Heights
- March: **Dropped Objects**
- **April:** Electrical Safety
- May: Energy Isolations
- June: Layers of protection (design)
- July: Loss of Containment
- August: Fire Safety
- September: Lifting Operations
- October: Permit-to-Work.