

Electronic Access Control (EAC) and Lock Out Tag Out (LOTO)

PROTECTING PERSONNEL & ASSETS

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The Hazards of Electrical Work

1. Electrical hazards: Shock, arc flash, arc blast.
2. ARC FLASH: High energy release, severe burns, potential fatalities.
3. According to the Bureau of Labor Statistics, 5 to 10 arc flash explosions happen daily, sending around 2,000 workers to burn units each year.
5. Electrocution is the fifth leading cause of workplace fatalities in the U.S. ²
6. One to two fatalities occur daily due to arc flash in North America. ²
7. 97% of all electricians have been shocked or injured on the job. ²



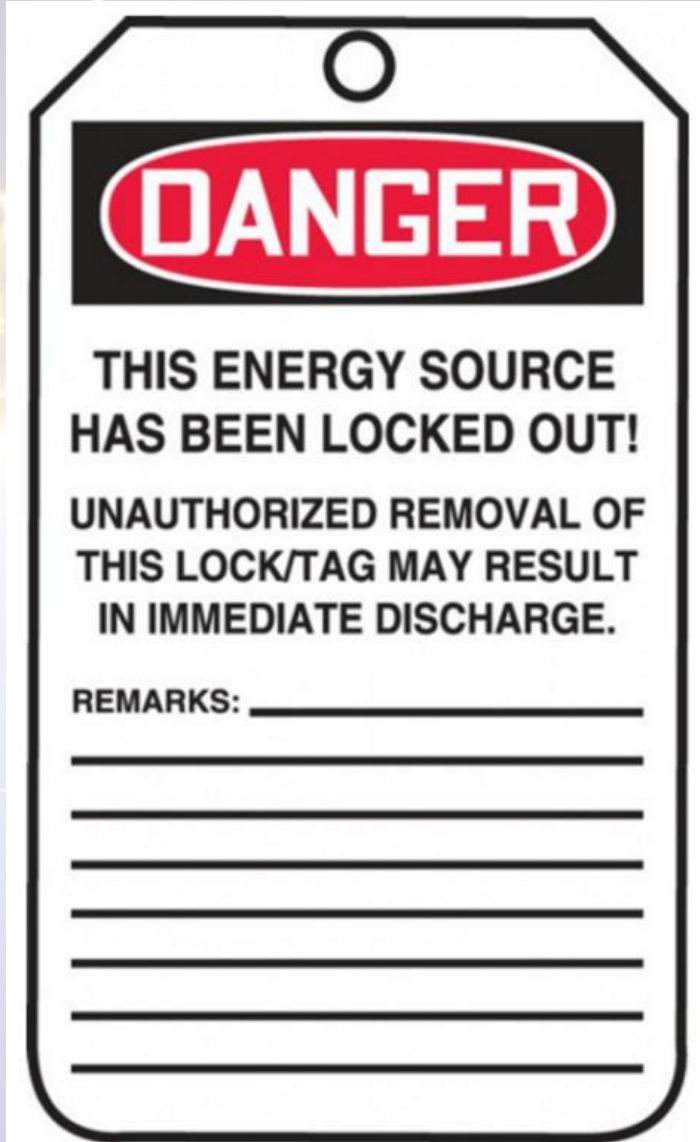
1. Electrical Contractor magazine 2022

2. References and photos from Conney Safety – White Paper: ARC FLASH ACCIDENT-INJURY STATISTICS: AN ALARMING REALITY, ie; https://www.conney.com/websphere/ResourcesTabs/Knowledge-Base/Whitepapers/ArcFlash_Whitepaper.pdf?srsltid=AfmBQor2OzCOxgawTIM5kDpOux9A2IOY_gL_kq6tGWZjAe6wtwgQob39c

What is Lock Out Tag Out (LOTO)?

LOTO is a safety procedure to de-energize equipment & prevent accidental re-energization preventing injuries and deaths. OSHA's lockout/tagout (LOTO) standard, 29 CFR 1910.147, requires employers to follow specific steps to control hazardous energy.

- 1. Prepare:** Notify employees and prepare for shutdown
- 2. Identify:** Identify energy sources and hazards
- 3. Shut down:** Shut down equipment
- 4. Isolate:** Isolate the equipment from the energy source
- 5. Lockout/tagout:** Apply lockout devices to energy sources and use tagout devices to warn employees
- 6. Check stored energy:** Dissipate stored or residual energy
- 7. Verify isolation:** Verify that the equipment is isolated from hazardous energy
- 8. Maintain lockout:** Maintain the lockout while performing maintenance or servicing
- 9. Return to service:** Put the equipment back into service



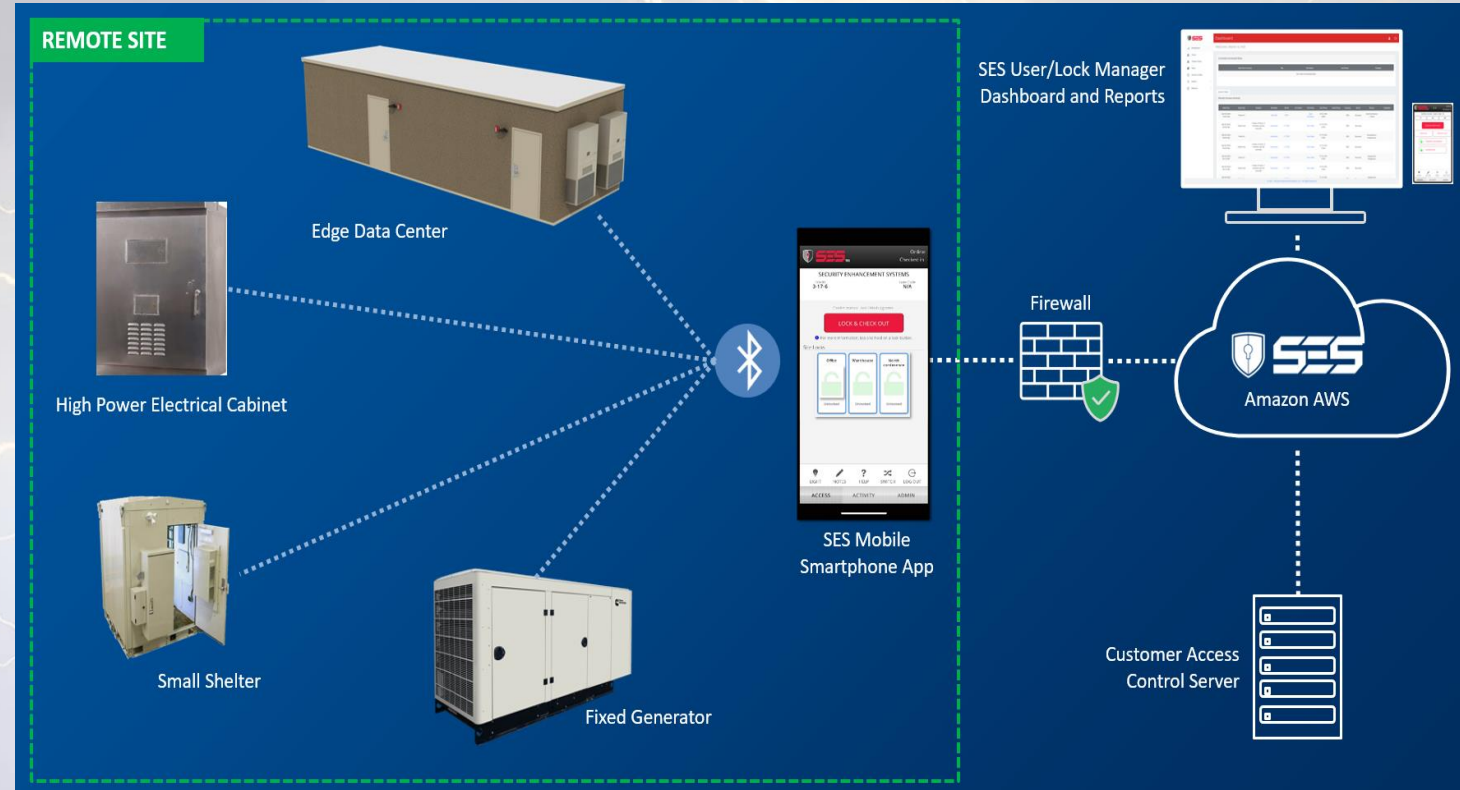
The Role of Electronic Access Control (EAC)

1. EAC enforces customer SOPs (Standard Operating Procedures) and provides vision into who, where, when, and why a site was accessed.
2. EAC Best Practices:
 - Keyless entry, eliminating keys and key management
 - Real-time and time-limited access
 - Integrates with client backend core systems & employee databases
 - Integrated alarm suppression
 - User audit trails
 - Contingencies during RF and AC power outages
 - Security - Greatly reduces unauthorized site entries and theft



Use Case Scenario - Controlling Site/Enclosure Access

1. The site/enclosure is setup in the EAC data base.
2. The user logs in to the site/enclosure with their mobile device (App).
3. The EAC system validates that the user is pre-approved and authorized to access the site.
4. The user is granted access.
5. User specific audit trail showing who, where, when and why is instantly generated and available for auditing purposes.



The Role of EAC and LOTO

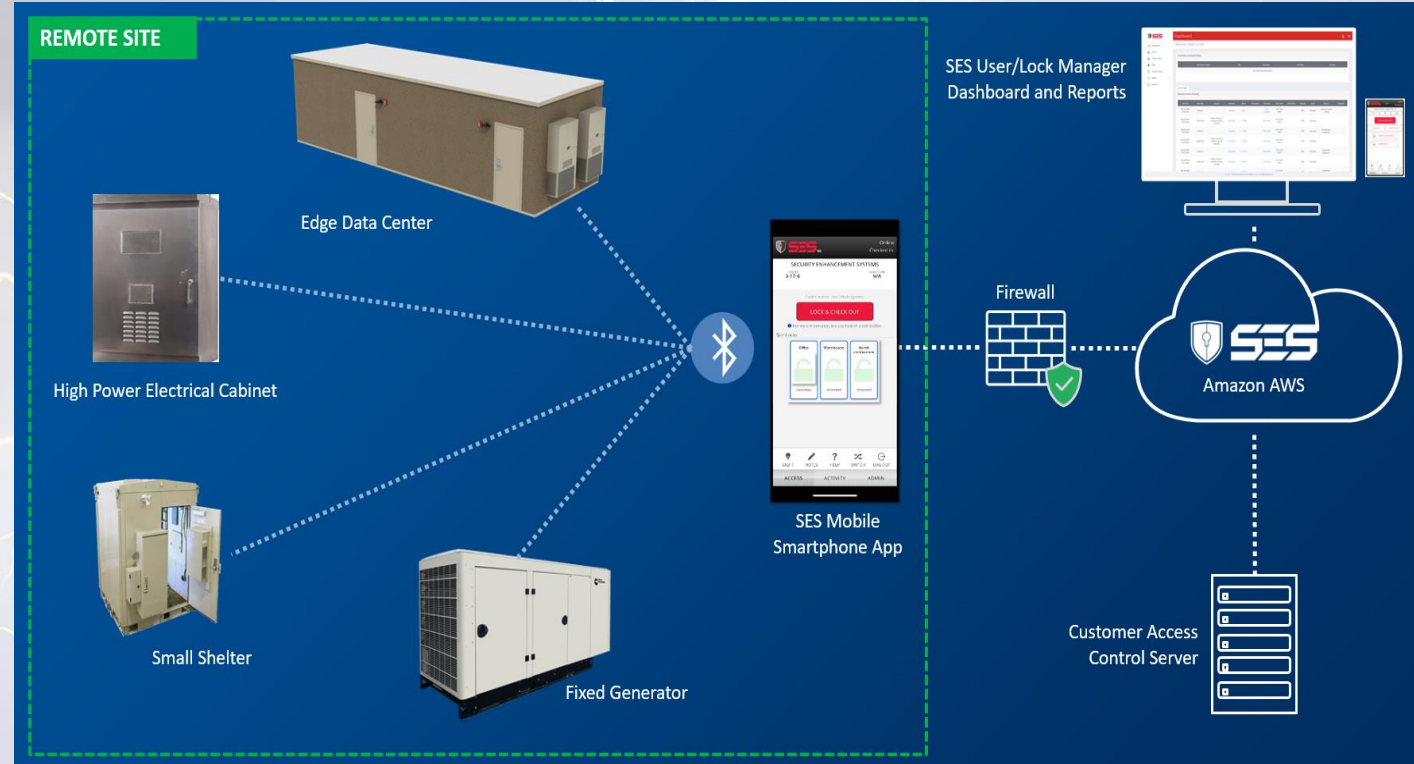
EAC measures and protects LOTO integrity by securing enclosures, providing user safeguards and monitoring for safety and compliance.

- Limits access to authorized personnel only
- Prevents unauthorized tampering or by-passing the LOTO process
- Ensures only trained and qualified personnel can access the enclosure
- Enhances security of critical assets
- Provides a user audit trail – Who, where, when and why
- Promotes compliance to OSHA 29 CFR 1910.147 and NFPA 70E



Use Case Scenario – LOTO Access

1. The user logs in to the site/enclosure with their mobile device (App).
2. The EAC system validates the **user**:
 - Are they pre-approved and authorized to access?
 - Are they properly trained and/or certified?
3. The user is granted site/door access.
4. The user validates LOTO requirements via the Mobile App.
 - Proper PPE and tools?
 - All necessary employees notified?
 - Energy sources and hazards identified?
 - Equipment shut down?
 - Equipment isolated from the energy source?
 - Lockout/tagout devices applied?
 - Stored or residual energy dissipated?
 - Lockout maintained while performing maintenance or servicing?
5. Re-energize and return equipment to service.
6. User specific audit trail showing who, where, when and why is instantly generated and available for auditing purposes.



EAC and LOTO in Action

1. Real-Time Monitoring & Alerts

- EAC allows for real-time status tracking of LOTO devices, ensuring locks and tags remain in place until authorized removal.
- Alerts can be sent if a lock is tampered with or removed without proper authorization.

2. Remote Verification & Audit Logging

- EAC-Integrated LOTO devices could sync with a centralized system for automatic logging, reducing manual paperwork.
- Supervisors could remotely verify lockout compliance without physically inspecting each site.

3. Increased Efficiency & Reduced Downtime

- No need to manually track locks and tags across multiple job sites.
- Helps coordinate lockout/tagout releases faster by enabling remote authorization (when appropriate).



Questions and Discussion, let's talk!

Thank you!

