

Affordable Innovation

Comprehensive Electrical System Analysis

Today, more than ever OSHA is holding employers responsible for minimizing the risk of electrical injury or death. Potential hazards exist anywhere there are electrical lines or electrical equipment including electrical panels, air conditioning units, light fixtures, electric motors, etc.

As a full service engineering, construction management and compliance firm, IPS is uniquely positioned to address both electrical system design and equipment installation in the field. Our experienced professionals can provide a comprehensive electrical system analysis to help you reach your goals for worker safety and long equipment life.

Occupational Safety and Health Administration (OSHA) Standard 1926.416 and National Electrical Code (NEC) Article 110 both require employers to minimize the likelihood that an employee will come in contact with electrical power. The standards also place the burden on the employer to provide sufficient warning of any electrical hazards, their location and the protective measures to be taken when working with the electrical power circuit.

An electrical system analysis can help you safeguard your employees and keep you in compliance with applicable regulations. The analysis should be conducted by an electrical engineer who is familiar with the National Electrical Code and the National Fire Prevention Association standards. Modern software helps enhance the accuracy of the analysis.

A thorough analysis should:

1. **Survey existing electrical distribution equipment.** The survey can help identify poor connections, overloaded circuits or imbalanced loads so the faults can be corrected.
2. **Verify existing Single Line Diagram or create a new one.** An up-to-date SDL of the facility provides a solid foundation. It should indicate ratings for all major equipment and identify connections to provide a clear understanding of the impact of de-energizing any piece of equipment.
3. **Perform a short circuit analysis.** It is critical to identify not only where equipment is and what it is connected to, but also how much energy would be available in the event of a short circuit.
4. **Perform a selective coordination study.** This analysis makes it possible to coordinate equipment with the proper available fault current to help minimize the likelihood of an injury or equipment damage in the event of a short circuit.
5. **Perform an arc flash analysis.** Understanding the potential energy release is necessary in order to determine the proper Personal Protective Equipment (PPE).
6. **Label equipment with proper hazard labels.** Based on the results of the electrical system analysis, equipment can be labeled to communicate the proper procedures for lock-out/tag-out of equipment and PPE to be worn in order to increase safety.

Ask about our comprehensive electrical system analysis.