

Journey Level Assessment Study Guide

Safety as a System

Understand why Personal Protective Equipment, Personal Insulated Protective Equipment, Insulated Protective Equipment and job briefings exist: They're not just rules, they're risk mitigation systems.

- What hazards does each item protect against?
- How does a briefing prevent cascading failures?

Think through change management: Why does stopping work during plan changes reduce accidents?

Grounding Philosophy

Grasp the physics behind grounding, not just steps:

Understand the principles of grounding, how to identify the correct grounding methods, and apply them effectively within the system. Explore the various grounding techniques available.

Electrical Theory in Practice

Move beyond definitions:

- How does Ohm's Law apply to the operation of an electrical system?
- Comprehensive understanding of the distribution system from its origin to the meter base.

Transformer Behavior & Configurations to Service Point

Understand polarity and rotation conceptually:

- Identifying additive vs subtractive transformers?
- Load calculations.
- Common configurations of transformers and confirm correct voltage.
- Electrical connections and how to verify that each connection is accurate and properly installed.

Think about voltage regulation: Why maintain voltage within a range? What happens if it drifts?

Operational Decision-Making

Practice scenario thinking instead of memorizing steps:

- Trouble shooting overhead and underground primary and secondary voltage problems.

Common Utility Equipment – Regulators, Capacitors, Reclosers, Switches, Fuses

- What are the benefits of having them on electrical system?
- How do we test to ensure proper function
- Known dangers or hazards when energizing/de-energizing

Common Utility Primary & Secondary Tools

- How are they used and why?

Equipment & Rigging

Understand mechanical advantages of lifting and rigging equipment:

- What are some industry common rigging equipment.
- How can we find the proper lifting equipment and their capacities?

Pole Setting

- What are some factors in setting a pole?

How to Study

- Build mental models: Sketch circuits, grounding setups, and transformer banks.
- Ask ‘why’ for every rule: If you can explain the reasoning, you’ll handle unexpected scenarios.
- Simulate failure points: What happens if a step is skipped? This deepens hazard awareness.

Resources

- Ugly’s Electrical References
- GE Distribution Transformer Manual
- The Lineman’s and Cableman’s Handbook
- XFMR Lab App