ETT CERTIFICATION ELEMENTS – CATEGORY AND LEVEL

Candidates for any level must meet the qualifications for all previous levels.

Examinations for a particular level may include questions from any previous level.

Category	Level I	Level II	Level III	Level IV
Safety	• First aid procedures • CPR • Fire protection procedures • Basic individual safety • Personal protective equipment • Individual lockout/tagout • Recognize an electrically safe work condition (ESWC)	• Intermediate safety • Confined space • Electrical personal protective equipment • Switching and grounding • Determine shock-protection boundaries	• Understanding of NFPA 70E safety requirements • Establish an electrically-safe work condition	• Safety equipment selection • Manage NFPA 70E safety requirements
Communications	• Basic communications	• Read and record data	• Technical communications • Preparation of technical reports	• Project management • Review technical reports
Mathematics	• Basic mathematics • Metric Units and conversions	• Intermediate mathematics	• Electrical calculations	• Advanced knowledge and skills concerning electrical calculations
Tools and Equipment	• Basic tools and equipment	• Basic test equipment • Multimeter use	• Selection	• Tool and equipment selection
Electrical and Physical Theory	• Basic electrical terms and definitions	• Basic physical science • Fundamentals of electricity • Basic ac circuits • Basic dc circuits	• Intermediate electrical terms and definitions • Electrical relationships	• AC and dc circuits • Dielectric theory
System Analysis and Operation		• Basic drawings and diagrams	• Electrical drawings and symbols • Manufacturers' product data	• Short-circuit and coordination studies • Equipment failure analysis • SCADA/DCS
Codes and Standards		• Standards-making organizations • NETA standards	• Knowledge of codes and standards	• Advanced knowledge of subject matter

ETT CERTIFICATION ELEMENTS – CATEGORY AND LEVEL

Candidates for any level must meet the qualifications for all previous levels.

Examinations for a particular level may include questions from any previous level.

Category	Level I	Level II	Level III	Level IV
General Test Equipment		• Simple ac and dc equipment • Basic testing procedures	• Insulation tests • Thermographic survey • Ratio and relative polarity • Power-factor/ dissipation-factor testing	• Partial discharge test equipment • VLF high potential test equipment
Emergency/ Standby Systems			• Automatic transfer switches	• Paralleling switchgear • UPS systems
Switchgear, Switchboards, and Motor Control Centers		• General maintenance	• Types and construction	• Advanced knowledge of subject matter
Transformers		• Types and uses	• Inspection and maintenance • Connections and ratings • Power transformers – general • Instrument transformers – general	• Special applications
Wires, Cables, and Buses		• Properties and types	• Inspection and maintenance • Cable testing	• Fault locating • Advanced knowledge and skills
Circuit Breakers and Circuit Switchers		• Types and ratings	• Inspection and maintenance • Testing	• Analyze time travel
Electrical Protective Devices		• Basic devices	• Low-voltage breakers • Current relays • Directional and power relays • Voltage relays • Differential relays • Other relay types • Fuses, types, rating and applications	• Motor Management Systems • Generation relays • Transmission relays • Advanced knowledge and skills
Metering		• Basic devices	• Complex metering	• Advanced metering

ETT CERTIFICATION ELEMENTS – CATEGORY AND LEVEL

Candidates for any level must meet the qualifications for all previous levels.

Examinations for a particular level may include questions from any previous level.

Category	Level I	Level II	Level III	Level IV
Controls			• Basic systems • Motor control • PLCs	• Complex control systems • Complex motor control • DCS systems
Grounding Systems		• Basic systems	• Types, application, and testing	• Ground system enhancement
Rotating Machinery			• Types, inspection, and testing	• Advanced knowledge and skills
Direct Current Systems		• Basic devices and sources	• Servicing and testing	• Advanced knowledge and skills
Capacitors, Reactors and Surge Protection			• Use, application, and testing	• Advanced knowledge
Insulating Liquid and Gases		• Properties, types and sampling procedures	• Tests and evaluation	• Complex analysis and trending
Troubleshooting			• Knowledge and skills	• Advanced knowledge and skills

ETT Certification Elements
Category and Level

Category	Level I	Level II	Level III	Level IV
Total Number of Elements	12	27	42	35