

STUDY GUIDE

E-CREW FOREMAN

KNOWLEDGE TEST

TEST #2350

INTRODUCTION

The **2350 E-Crew Foreman Knowledge Test** was designed to assess technical knowledge necessary to perform the job. This guide contains strategies and study references to prepare for the interview.

TEST SESSION

It is important that you follow the directions of the Test Administrator exactly. If you have any questions about the testing session, be sure to ask the Test Administrator before the testing begins. During testing, you may **NOT** leave the room, talk, smoke, eat, or drink.

This test has a **3 hour** time limit.

All cellular/mobile phones, pagers or other electronic equipment will NOT be allowed in the interviewing area.

A non-programmable basic calculator will be provided for you to use during the interview. You will NOT be able to bring or use your own calculator during the interview.

All questions on this test are multiple choice questions. Some questions will have four possible answers with only one correct answer. You will also be presented with questions that instruct you to check all that apply. These questions have multiple correct answers and you must choose all the correct answers in order to receive credit for the question. For more information on this, please see the next section of this study guide on *Computer Based Testing*.

INFORMATION GUIDE FEEDBACK

At the end of this Guide you have been provided with an Information Guide Feedback page. If a procedure or policy has changed, making any part of this Guide incorrect, your feedback would be appreciated so that corrections can be made.

TEST TAKING STRATEGIES

Your emotional and physical state during the test may determine whether you are prepared to do your best. The following list provides common sense techniques you can use before the test begins.

CONFIDENCE

If you feel confident about passing the test, you may lose some of your anxiety. Think of the test as a way of demonstrating how much you know, the skills you can apply, the problems you can solve, and your good judgment capabilities.

PUNCTUALITY

Arrive early enough to feel relaxed and comfortable before the test begins.

CONCENTRATION

Try to block out all distractions and concentrate only on the test. You will not only finish faster but you will reduce your chances of making careless mistakes. If possible, select a seat away from others who might be distracting. If lighting in the room is poor, sit under a light fixture. If the test room becomes noisy or there are other distractions or irregularities, mention them to the Test Administrator immediately.

BUDGET YOUR TIMES

Pace yourself carefully to ensure that you will have enough time to complete all items and review your answers.

READ CRITICALLY

Read all directions and questions carefully. Even though the first or second answer choice looks good, be sure to read all the choices before selecting your answer.

MAKE EDUCATED GUESSES

Make an educated guess if you do not know the answer or if you are unsure of it.

CHANGING ANSWERS

If you need to change an answer when testing on a computer, be sure that the new answer is selected instead of the old one.

RETURN TO DIFFICULT QUESTIONS

If particular questions seem difficult to understand, make a note of them, continue with the test and return to them later.

DOUBLE CHECK MATH CALCULATIONS

Use scratch paper to double check your mathematical calculations.

REVIEW

If time permits, review your answers. Do the questions you skipped previously. When testing on a computer, make sure each multiple choice question has a dot next to the correct answer.

Remember the techniques described in this section are only suggestions. You should follow the test taking methods that work best for you.

JOB KNOWLEDGE CATEGORIES

Below are the major job knowledge areas (topics) covered on the 2350 E-Crew Foreman Knowledge Test. Listed next to each knowledge category is the number of items on the exam that will measure that topic. You can use this information to guide your studying. Some exams also contain additional pretest items. Pretest items will appear just like all of the other items on your exam, but they will not affect your score. They are an essential part of ensuring the 2350 E-Crew Foreman Knowledge Test remains relevant to successful performance of the job. There are a total of 135 items on the 2350 E-Crew Foreman Knowledge Test and the passing score is 75%. This score was determined during the test validation process.

FUNDAMENTALS (13 ITEMS)

Knowledge of the basic electricity, including electrical calculations, AC/D\C theory, single phase/three phase power, and phasing. Knowledge of the basic concepts of capacitance, its relationship to voltage, associated hazards, inductive reactance and power factor. Knowledge of SCE system configurations (primary and secondary) such as loops, radial lines and placement of branch line fuses. Knowledge of Distribution System Operations, including the roles and functions of the Distribution Switching Centers; responsibilities and support provided by the Distribution Operations Center (DOC). Knowledge of power system equipment and material, including typical substation equipment related to clearances and no test orders, A & B materials, transformers, transformer banks/connections, and SCE terminology for equipment. Knowledge of SCE map and diagram symbols related to work order, circuit maps, circuit strip maps and FIM maps.

SAFETY (51 ITEMS)

Knowledge of Personal Protective Equipment. Knowledge of safety requirements when entering and working in vaults and other underground structures. Knowledge of APM rules. Knowledge of rubber gloves inspection and testing requirements. Knowledge of insulate and isolate procedures per the Rubber Glove Manual. Knowledge of identification and elimination of “second point of contact.” Knowledge of proper inspection and maintenance of climbing tool. Knowledge of proper testing and inspection of load-break tools (e.g. break-safe, loadbuster tools). Knowledge of testing and maintenance requirements for Faultguard tools. Knowledge of how to identify and install protective equipment (e.g. line covers, blankets, Tupperware, line hose, hoods, etc.). Knowledge of personal and equipment grounding including grounding for personal protection, the purpose of and methods for establishing equal potential zone, grounding priority, faulty duty and the reasons for three different sizes of grounds, ground assembly rotation program, the proper size of grounding jumpers, grounding requirements and methods for transformers, when/why to install temporary grounding devices, sizes and lengths of ground conductor for vault grounds, and method of attaching primary and secondary grounds to the pole. Knowledge of vehicle safety, including the circle of safety, vehicle safety equipment, and requirements for safely attaching trailers and dollies to trucks. Knowledge of environmental procedures including coordinating with Environmental Health and Safety regarding for environmental issues and methods for containing or removing hazardous materials. Knowledge of safety procedures related to Arc Flash.

SAFETY APPLICATION (5 ITEMS)

Ability to apply knowledge of the proper safety policies and procedures to the following: energizing a newly placed 600 amp mainline cable; adherence to quality control; adequate cover; working on three phase panels; parking a vehicle; single-phase switching on a capacitor bank.

OVERHEAD APPARATUS AND MATERIALS (20 ITEMS)

Knowledge of conductors including the applications of different attachments on poles; methods for setting, framing and bonding poles. Knowledge of pole support structures. Knowledge of OH Apparatus including switching equipment; voltage regulators; transformers; types and sizes of fixed and switched capacitor banks; pole switches and typical applications of each (blade/knife style disconnect, AR/RAR, RCS, etc.); the detection and impact of capacitor bank current on system performance; fuse-holders; fuses (link fuses, current limiting, fault tamer); tap changes on transformers; OH transformer wiring and polarity; installation/wiring techniques for pole mounted transformers; and the methods and procedures for bypassing a voltage regulator. Knowledge of secondary service/customer equipment including secondary conductors and their applications (triplex, open wire, duplex and quad). Knowledge of the types of streetlight systems and their components.

UNDERGROUND APPARATUS AND MATERIALS (13 ITEMS)

Knowledge of cables including: cable types; splicing tools and techniques; and underground phasing techniques. Knowledge of UG switches and fuses including: underground switches; gas switches; and UAD equipment. Knowledge of underground transformers including: transformer types (BURD, padmount, subway, etc.); UG transformer voltage and current ratings; UG transformer switching and fusing options; wiring and connection configurations; and methods of tap changing on padmount transformers. Knowledge of risers including riser materials, components and construction; methods of installing different types of risers. Knowledge of UG connectors and control equipment, including methods for installing underground primary connectors and terminations. Knowledge of UG vaults and other structures, including methods of testing water in vault.

WORK STANDARDS AND PROCEDURES (31 ITEMS)

Knowledge of SCE's standards, regulations and work procedures, including GO 95/128/165; OSHA and Cal OSHA; Distribution OH Construction Manual; Distribution UG Construction Manual; DOM; System Operating Bulletins; Electrical Service Requirements; OH/UG Grounding Manuals; Rigging Manual; and Environmental Manual. Knowledge of climbing requirements per GO 95. Knowledge of the proper operation of work vehicles. Knowledge of the requirements for safe truck set up. Knowledge of emergency controls on man lifts. Knowledge of high voltage testing and equipment (phasing sets, multimeter, clamp-on meter). Knowledge of and purpose of the following tests: megger; TTR; and oxygen/gas. Knowledge of proper heat gun operation. Knowledge of dead-end materials. Knowledge of methods and techniques for connecting taps and stringing conductor. Knowledge of conditions involving ferroresonance and resolutions. Knowledge of ground relays. Knowledge of switching (e.g tools and equipment, load break, non load-break, and methods for writing switching procedures).

Knowledge of no test order and conditions of use. Knowledge of clearances. Knowledge of tags. Knowledge of requirements for qualified employees. Knowledge of the four "R's" of paralleling a 4 kV circuit. Knowledge of voltage problems and resolution. Knowledge of sectionalizing to locate a fault. Knowledge of rubber glove techniques. Knowledge of hot sticking techniques. Knowledge of rigging including boom/bucket truck operation; different styles of rigging; and rigging safety factors.

STUDY REFERENCES

Below are a list of study references to help you prepare for the 2350 E-Crew Foreman Knowledge Test.

Accident Prevention Manual (APM) Confined Space Manual

Distribution Operations and Maintenance Manual (DOM) Distribution Overhead Construction

Standards (DOH) Distribution Underground Construction Standards (DUG) Electrical

Service Requirements (ESR)

Environmental Policies & Procedures Manual (EN)

General Order No. 95 (GO 95), No. 128 (GO 128), No. 165 (GO 165)

Rigging Standards Manual (RSM) and Rubber Glove Manual (RGM) System Operating

Bulletins (SOB) and Overhead Grounding Manual (OGM)

Underground Grounding Manual (UGM) and Underground Standards Manual (USM)

Distribution Arc Flash Manual



STUDY GUIDE FEEDBACK

Please email to notify us of any changes in policies, procedures, or materials affecting this guide.

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