

STUDY GUIDE FOR SYSTEM OPERATOR PROGRAM WRITING PERFORMANCE TEST

TEST #4812

INTRODUCTION

The 4812 System Operator Program Writing Performance Test is designed to evaluate your ability to prepare switching procedures for substation equipment. This guide contains information about the test session as well and information to prepare for the test.

TEST SESSION INFORMATION

Test Registration

You will receive an email invitation from TalentAcquisition@sce.com. **Please read the full e-mail as it includes critical steps to register for the assessment.** You must complete the test registration process and receive a confirmation email in order to properly schedule your test session.

Please reach out to Edison.Testing@sce.com if you have any questions while registering for the assessment.

Test Format

This test will be completed through Southern California Edison's online test administration platform. You will write your switching procedures in the platform. Prior to starting the test, you will be presented with a practice tool to familiarize yourself with the test layout and how to enter your switching procedures into the test platform.

All cellular/mobile phones, pagers or other electronic equipment will NOT be allowed in the testing area. No outside documents or references may be used during the test. You will be provided with the documents, including one-line diagrams, necessary to complete the test.

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.

You will receive a Test Comment form so that you can make comments about test questions. Write any comments you have and turn it in with your test when you are done.

This test has a four-and-a-half-hour time limit.

System Operator Program Writing Performance Test Overview

This test requires you to write step-by-step programs for four scenarios: Distribution, Transmission and Sub-Transmission equipment.

You will not receive credit if you do not write specific, detailed switching procedures.

You will not receive credit if you perform operations on devices that are not detailed in the test materials.

Documenting Assumptions and Station Status

You will be given space to document your assumptions/rationale on the equipment necessary to perform the switching. You must document any assumptions made as part of your switching.

Each program request includes detailed information about the normal station status. It is critical to carefully read over the stations' statuses as you write your programs. Be sure to account for all abnormalities as you write your switching procedures.

Test Scoring

Test takers will be evaluated on their ability to write a program that successfully satisfies the request. Test takers will be provided with the detailed criteria associated with writing a successful program when starting the test and will be able to reference the criteria throughout the test.

Individuals must successfully complete three of the four program requests to pass the test.

MAJOR AREAS COVERED IN THE TEST

The following section describes the major concepts covered in the test.

SWITCHING TASKS COVERED IN THE TEST

Read one line diagrams, Roll load inside a substation, Roll/swap a bus tie, Operate LTCS, Operate regulators, Clear capacitors, Isolate equipment or lines for maintenance work without dropping load, Operate pot secondary knife switches, switch coupling capacitance voltage transformers (CCVTs) and clear and return lines and equipment, including checking dead and ground lines, and clear/isolate equipment or lines for maintenance work without dropping load.

KNOWLEDGE AREAS COVERED IN THE TEST

This test evaluates test takers ability to apply the following knowledge to write switching procedures:

Distribution Equipment

Knowledge of the following: Distribution substation equipment (33kV and below), Capacitor switching, Relay protection, Electromechanical relays, Grounding procedures, Automatic testing features (e.g. reclosers), Field and station parallel considerations requirements for distribution line relay information Operation of voltage regulators Disconnects (load break disconnects and isolating disconnects).

Transmission Equipment

Knowledge of the following: Transmission substation equipment (220kV and above), PT secondary switches, Potential transformers/CCVT's, Relays, and Procedures for swapping potentials.

Sub - Transmission Equipment

Knowledge of the following: Subtransmission substation equipment (66kV and 115 kV), Relay protection, Hot and deadline reclosing.

TEST PREPARATION

This section provides recommendations on how to prepare for the test. It is recommended that you reach out to a Substation Supervisor to perform job shadowing.

Samples Programs to Review

Below is a sample set of programs to familiarize yourself with in preparation for the test.

Clear and return a 500kV or 220kV line, with or without series capacitors and/or line reactors.

Clear and return a 500kV or 220kV CB and roll out/in CT rotos.

Clear and return a 500kV or 220kV bus with attached bank.

Clear and return a subtransmission level bus, with or without attached "A" bank and verify or swap potentials.

Clear and return a subtransmission line with attached load. HCB or POTT protection.

Write a program to back up a System parallel made on the distribution level (parallel two "A" bank systems).

Clear and return a subtransmission operating bus, non "A" bank station.

Clear and return a subtransmission level CB for maintenance using bus tie, SAS or Non SAS.

Place a 12/16kV bank CB on transfer bus.

Clear and return a 4kV CB and regulator on station with split bus. Roll bus tie.

Clear and return distribution line into substation. Including a 4kV line from PD to substation picking up load on adjacent circuit.

Clear and return a mid-point oil/gas switch on distribution line with feed into switch from adjacent circuit (other position fed from another circuit).

Clear and return Bus Tie CB with attached station light and power. Test SL&P without testing on disconnects.

STUDY REFERENCES

Review the following procedures and bulletins in preparation for the test.

SOB 15 Static Capacitor Switching Instructions

SOB 100 General Instructions to Transmission Switching Centers

SOB 116 Subtransmission Line Pole Switch Operation

SOB 123 Standard Designation of Transmission and Subtransmission Lines

SOB 130 Written Switching Order Development

SOB 131 Routine Switching Procedures (Equipment Isolation and Return To Service)

SOB 301 – section 7.3, 8.

SOB 305 Distribution Voltage Regulator Operation

SOB 309 Distribution Line Ground Relay Operation

SOB 1014 Local Breaker Failure Back Up Protection

SOB 1025 HCB Pilot Wire Relay Protection

Operators Manual 6.03 Distribution Switching

Operators Manual 6.04 Subtransmission Switching

Operators Manual 6.05 Bulk Power Switching

Operators Manual 6.07 Introduction To Program Writing

Substation Operations and Maintenance Policy and Procedures (SOMs)

SOM O6 Operation of Circuit Regulators

SOM E1 Substation Equipment Standard Designation

Accident Prevention Manual – Substation Rules

TEST TAKING STRATEGIES

Your emotional and physical state during the test may determine whether you are prepared to do your best.

CONFIDENCE

If you feel confident about your abilities, you may lose some of your anxiety. Think of the test as a way of demonstrating the knowledge and abilities you possess.

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.

READING

Carefully read and follow all test instructions.



STUDY GUIDE FEEDBACK

Please email TESTADMN@SCE.com to notify Human Resources of any changes in policies, procedures, or materials affecting the materials in this study guide. Please use the following subject line in your e-mail:

Feedback: 4812 System Operator Program Writing Test Study Guide