

**Study Guide
for**

**Radioactive Material Control
Technician**

Test No. 2711

March 2009

**Southern California Edison Company
Performance Assessment Services**

Introduction

The **Radioactive Material Control Technician** Test is a job knowledge test designed to cover the major knowledge necessary to perform the job. This *Guide* contains strategies to use for taking tests and a study outline, which includes knowledge categories and study references.

Test Scheduling

Employees who apply for positions, bids, and transfers requiring testing before March 9, 2009, will be scheduled for testing by their Supervisor through Human Resources. For those who apply after March 9, 2009, both the employee and their Supervisor will be notified of a scheduled test date by Human Resources. Test times and dates for positions requiring testing will be specified in the bid/transfer/requisition/job posting. Employees should be prepared to test on the specified dates. Only employees who apply for positions requiring testing, and who meet basic qualifications, will be invited to test. Applicants will be scheduled through the recruiter. If you have any questions, please call 626-302-9830.

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. Since some tests take several hours, you should consider these factors before the test begins.

The test has a 3 hour (180 minutes) time limit. You will be allowed to use a non-programmable (non-scientific) calculator. Calculators will be provided by the Test Administrator, and will be one of the following three models: Casio fx-250HC, Texas Instruments TI-30XA, TI 36-X.

Study Guide Feedback

At the end of this *Guide* you have been provided with a Study 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.

Computer Based Testing

Effective **March 9, 2009**, all knowledge tests will be administered on the computer. This information will help prepare you for a knowledge test taken on or after **March 9, 2009**.

Taking an SCE knowledge test on the computer is simple. You do not need any computer experience or typing skills. You will only use the keyboard to enter your candidate ID and password. You'll answer all questions by pressing a single button on the mouse.

Log in Screen

You will be seated at a testing station. When you are seated, the computer will prompt you to enter the candidate ID and password you received in your invitation e-mail. You **MUST** have your candidate ID and password or you will be unable to take the test. Once you have confirmed your identity by entering this information, you will see a list of tests available to you.

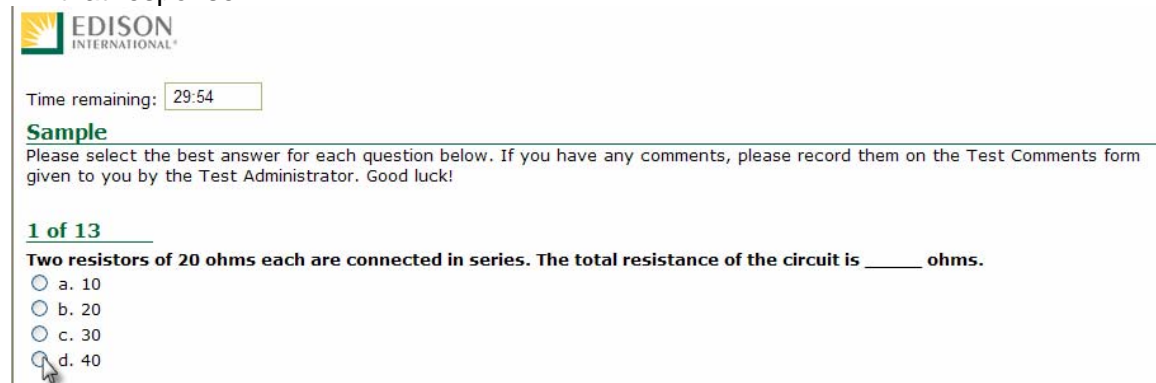
Sample/Tutorial

Before you start your actual test, a Sample/Tutorial Test is provided to help you become familiar with the computer and the mouse. From the list of exams that appear when you complete the log in, you will select Sample/Tutorial. You will have up to 10 minutes to take the Sample/Tutorial Test. The time you spend on this Sample Test DOES NOT count toward your examination time. Sample questions are included so that you may practice answering questions. In the Sample/Tutorial Test, you will get feedback on your answers. You will not receive feedback on your actual test.

Example

During the test, to answer each question, you should move the mouse pointer over the circle (radio button) next to the answer of your choice, and click the left mouse button. The amount of time you have remaining to take the test will always be shown in the top left corner of the screen. A sample is show below:

1. When you begin the test, you can see the total time allowed for completion displayed at the top of the screen. You can scroll up to see that information at any time during the test.
2. In order to answer each question, first read the question and determine the response that best answers the question. Put the mouse pointer directly over the circle corresponding to that response.



The screenshot shows the Edison International test interface. At the top left is the Edison International logo. Below it, a timer displays "Time remaining: 29:54". A section titled "Sample" contains the instruction: "Please select the best answer for each question below. If you have any comments, please record them on the Test Comments form given to you by the Test Administrator. Good luck!". Below this, it says "1 of 13". The question is: "Two resistors of 20 ohms each are connected in series. The total resistance of the circuit is _____ ohms." The options are: a. 10, b. 20, c. 30, and d. 40. A mouse cursor is pointing at the radio button for option d.

3. While the pointer is over the circle corresponding to the best answer, click the left mouse button.



Click the left button when the pointer icon is over your answer choice.

- The answer you selected should now have a green dot in the circle. If you need to select an alternate answer, simply move the pointer over that circle, and click again.



Time remaining:

Sample

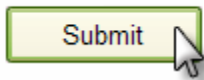
Please select the best answer for each question below. If you have any comments, please record them on the Test Comments form given to you by the Test Administrator. Good luck!

1 of 13

Two resistors of 20 ohms each are connected in series. The total resistance of the circuit is _____ ohms.

- a. 10
- b. 20
- c. 30
- d. 40

- You can change your answers at any time during the test until the time runs out, or you click the "Submit" button.



Test Taking Strategies

Introduction

The **Radioactive Material Control Technician** Test contains multiple choice questions. The purpose of this section is to help you identify with some special features of a multiple choice test and to suggest techniques for you to use when taking one.

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.

Technique	Remarks
Be confident	If you feel confident about passing the test, you may lose some of your anxiety.
Be punctual	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.
Concentrate	<p>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.</p> <p>If possible, select a seat away from others who might be distracting.</p> <p>If lighting in the room is poor, sit under a light fixture.</p> <p>If the test room becomes noisy or there are other distractions or irregularities, mention them to the Test Administrator immediately.</p>
Budget your time	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 answers or if you are unsure of it.

Changing answers

If you need to change an answer, be sure to erase your previous answer completely. On the 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 mathematical

Use your calculator and/or scratch paper to double check your mathematical calculations.

Review

If time permits, review your answers. Do the questions you skipped previously. Make sure each answer bubble is completely filled in. Erase any stray marks on your answer sheet. On the computer, make sure each 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.

Study Guide Outline

Job Knowledge Categories and References

A. Mathematics

Knowledge of Algebra, Geometry, use of scientific notation, and logarithms.

SO123 VII 8.1.2

SO123 VII 8.2

SO123 VII 8.2.5

49 CFR

10CFR61

Math segment, Sr. Rad mat handler training

Rad Protection Tech. SRMH training

Rad protection tech. SRMH training, atomic & nuclear theory II

B. Plant Systems and Equipment

Knowledge of plant layout and plant systems, including piping and valving, reactor coolant systems, water treatment systems, and plant components.

49CFR173.441(a)

SO123 VII 8.1

SO123 VII 8.5.5

Systems training

C. Radiation Equipment

Knowledge of radiation detection and measurement equipment, including portable survey instruments, personnel monitoring devices, and counting systems.

RMCT instrument training

Portable rad/contamination instrument training

SO123 20.9.3

Basic Radiation Protection Technology, 4th Edition. Daniel A. Gollnick (June 2000)

Radiological Health Handbook. 1970. Compiled and edited by the Bureau of Radiological Health and The Training Institute, Environmental Control Administration. Washington, D. C.: Government Printing Office.

D. Handling

Ability to work safely with radioactive materials. Includes knowledge of respiratory protection procedures, respirators, ventilation equipment, and emergency procedures.

SO123 VII 5.1.6
SO123 VII 5.3.4
SO123 VII 8.1
SO123 VII 8.1.4
SO123 VII 8.1.5
SO123 VII 8.2
SO123 VII 8.2.5
SO123 VII 8.2.10
SO123 VII 8.5.1
10CFR61
49CFR
NRC BTP
NRC 79-19 Bulletin

E. Regulations

Knowledge of federal, state and site regulations, including radiation protection and exposure, packaging and labeling of radioactive materials, and security procedures.

10CFR20
10CFR61
10CFR71
49CFR
SO123 VII 8.1
SO123 VII 8.1.5
SO123 VII 8.2
SO123 VII 8.2.5
SO123 VII 8.1.14
SRMH HP admin training
NRC Branch Technical Position
Barnwell Disposal Site License

F. Radiation Theory

Knowledge of radiological terminology, exposure and absorbed dose values, and characteristics of various types of radiation.

49CFR

SO123 VII 8.2

SO123 VII 8.2.5

Atomic and nuclear physics II training

Rad/control instrument training

Rad material disposal training

G. Planning & Organizing

Knowledge of proper sequencing for work procedures, such as staging, compacting, and deconning evolutions.

HPD Continuing Training

SO123 VII 8.1

SO123 VII 8.1.5

SO123 VII 8.1.8

SO123 VII 8.1.9

SO123 VII 8.2

SO123 VII 8.25

49 CFR

10CFR20

