

STUDY GUIDE HYDRO STATION OPERATOR II & III

TEST #2402

INTRODUCTION

The **Hydro Station Operator II & III Test #2402** is a job knowledge test designed to cover the major knowledge areas necessary to perform the job. This Guide contains strategies to use for taking tests and a study outline, which includes knowledge categories, major job activities, and study references.

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.

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

All questions on this test are multiple-choice format and have four possible answers. All knowledge tests will be taken on the computer. Consult the following link and click on Computer Based Testing for more information: All questions on this test are multiple-choice format and have four possible answers. All knowledge tests will be taken on the computer. Consult the following link and click on Computer Based Testing.

The test has a three hour time limit. A basic calculator will be provided for you to use during the test.

You will **NOT be able to bring or use your own calculator during testing.**

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.

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

INTRODUCTION

The **Hydro Station Operator II & III Test #2402** contains multiple-choice questions and may also contain hot spot questions. The purpose of this section is to help you to identify 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.

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 AND STUDY REFERENCES

Below are the major job knowledge areas (topics) covered on the 2178 Instrument Control and Electrician (ICE) Technician Test and the associated study references. 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 2178 Instrument Control and Electrician test remains relevant to successful performance of the job.

There are a total of 88 items on the 2178 Instrument Control and Electrician Technician Test and the passing score is 70%.

BASIC AC/DC THEORY, PHYSICS, AND MATHEMATICS (18 ITEMS)

Includes knowledge of power transmission and distribution theory; electrical symbols; electrical terminology; basic motor and battery theory; wiring and circuit diagrams, as well as basic electrical knowledge of concepts such as polarity and Ohm's law. Also, knowledge of basic algebraic concepts; ratio computations (e.g., as used in gear and transformer ratio problems); percents; and other basic computational concepts. Also, basic knowledge of physics; hydraulics and water flow; including concepts such as specific gravity and knowledge of Boyle's law.

References

Handbook for Electrical Metering, Edison Electrical Institute (2002)

Basic math book such as: Mathematics Made Simple by Thomas Cusick, Broadway, 2003

Basic physics book such as: Physics by John D. Cutnell and Kenneth W. Johnson, Wiley, 2009

Schaum's Outline of Basic Electricity, by Milton Gussow, McGraw Hill (2009)

GENERAL EQUIPMENT FUNCTION AND NOMENCLATURE, PART 1 (15 ITEMS)

As it applies to operating and monitoring powerhouse electrical equipment, includes knowledge of electrical equipment, DCS (Distributed Control Systems), purpose, names and terminology; meaning of alarms and other signs or indicators of equipment malfunction; meter reading interpretations; protective devices, routine and emergency operating procedures.

Facilities, Instructions, Standards and Techniques (FIST) Manuals published by US Department of Interior Bureau of Reclamation

Volume 1, Operations

Volume 2, Mechanical Maintenance

Volume 3, Electrical Maintenance

Volume 4, General Maintenance

Volume 5, Safety

Volume 6, Facility Management

GENERAL EQUIPMENT FUNCTION AND NOMENCLATURE, PART 2 (28 ITEMS)

As it applies to operating and monitoring external hydraulics; inspecting and maintaining equipment; operating and monitoring mechanical powerhouse equipment; operating and maintaining fire fighting and safety equipment; monitoring water storage and water release includes knowledge of names and terminology; equipment layout and purpose; the meaning of indicators of equipment malfunction; meter reading interpretation; protective devices; routine and emergency operating procedures.

References

Facilities, Instructions, Standards and Techniques (FIST) Manuals published by US Department of Interior Bureau of Reclamation

Volume 1, Operations

Volume 2, Mechanical Maintenance

Volume 3, Electrical Maintenance

Volume 4, General Maintenance

Volume 5, Safety

Volume 6, Facility Management

SAFETY (9 ITEMS)

Knowledge of first aid procedures; fire fighting procedures; accident prevention techniques; safety equipment; and knowledge of clearance procedures.

References

Facilities, Instructions, Standards and Techniques (FIST) Manuals published by US Department of Interior Bureau of Reclamation

Volume 1, Operations

Volume 2, Mechanical Maintenance

Volume 3, Electrical Maintenance

Volume 4, General Maintenance

Volume 5, Safety

Volume 6, Facility Management

CPUC General Orders No. 167

SYSTEM PROCEDURES AND REFERENCE AVAILABILITY (3 ITEMS)

Knowledge related to procedures for keeping logs and records, including compliance with NERC/FERC security.

References

CPUC General Orders No. 167

SAMPLE QUESTIONS

The following sample questions should give you some idea of the form the test will take.

- 1. Water is released from a lake at the rate of 500 cubic feet per second. What is the total acre feet released at the end of 24 hours?**
 - A. 800
 - B. 300
 - C. 991
 - D. 1500

- 2. What piece of equipment would you use to apply a field to a generating unit?**
 - A. Field breaker
 - B. Generator breaker
 - C. Governor
 - D. Dashpot

- 3. Three phase ammeter readings should be taken:**
 - A. When switching
 - B. When requested by the Switching Center
 - C. If a checker is present
 - D. Before and after equipment is cleared

- 4. Clearances are needed when work is to be performed on de-energized Generating station or substation apparatus or equipment which is normally energized above:**
 - A. 500 volts
 - B. 900 volts
 - C. 600 volts
 - D. 1000 volts

Sample Question Answers

1. C
2. A
3. D
4. C



STUDY GUIDE FEEDBACK

Please use this page to notify us of any changes in policies, procedures, or materials affecting this guide. Once completed, return to:

Southern California Edison Human Resources - Performance Assessment Services G.O. 4,
Ground Floor 8631 Rush St. Rosemead, CA 91770

Test Name: Hydro Station Operator II & III Test #2402

If you have encountered any discrepancies in the test, please provide an explanation and the page number below.

COMMENTS