

**Study Guide
for
Power Plant Mechanic B
Module 1 Test**

Test No. 9051x

**Human Resources
Performance Assessment Services
Southern California Edison Company
An Edison International Company**

102604

Introduction

The **Power Plant Mechanic B Module 1** test is a job knowledge test designed to cover the major knowledge's 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 Scheduling

Employees will be scheduled for testing by their Supervisor through Human Resources. Applicants will be scheduled through the recruiter. If you do not pass the test on your first attempt, please refer to the testing guidelines on Myedison.net (employees only) or 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.

All questions on this test are multiple-choice with four possible answers. Your answers to the questions are indicated by filling in a circle on an answer sheet with a special mark-sense pencil. For your answers to be read accurately by the scanner, you must fill in the circles completely and erase completely any answer you wish to change.

The test has a 3 hour (180 minute) time limit and testing aides are not allowed.

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.

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.

Test Taking Strategies

Introduction

The **Power Plant Mechanic B Module 1** test contains multiple-choice 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.

Technique

Remarks

Be confident

- 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.

Be punctual

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

Concentrate

- 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 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 answer or if you are unsure of it.

Changing answers

- If you need to change an answer, be sure to erase your previous answer completely.

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 calculations

- Use 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.

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

Below are the major job knowledge categories that are covered on the test.

A. Work Procedures/Processes

Knowledge of work procedures and processes specific to Mohave Generating Station including quality management, environmental policies/procedures (ISO14000), mill air flow processes, coal cake sampling, and computer systems. How to use MMS (Material Management System), LER (Labor Entry and Reporting), and WMS (Work Management System).

Training Courses: LER, WMS, MMS, ISO 14000, Coal Cake Moisture and Particle Sampling, Quality Process, ISO 9000, and Mill and Centrifuge Function

B. Welding

Knowledge of general welding techniques and safety practices. How to perform oxyacetylene and electric arc welding, including safety, equipment setup and use, and cutting procedures. How to perform braze welding, including safety, filler metals and fluxes, joint design and procedures. Knowledge of shielded metal-arc welding principles, including safety, equipment setup, electrode identification.

Training Courses: Welding Training

C. Machine Shop Practices, Tools and Precision Measurement Readings

Knowledge of the basic principles of machining, layout work and shop safety, including the use of small lathes, light milling machine, radial drills and small surface grinders. How to perform basic turning operations, including milling, turning and grinding in order to maintain and repair centrifuges, rotors and pulverizers. How to use basic hand and power tools (e.g., impact and end wrenches, drill motors, screw guns, sockets and ratchets, etc.). How to measure using Vernier calipers, outside, inside and depth micrometers and dial indicators, and other precision instruments in order to assemble/disassemble and inspect coal handling equipment. How to lift, transport and move material and equipment using standard rigging techniques and motorized and non-motorized aids (e.g., forklifts, overhead cranes, hoists, slings, chainfalls, etc.).

Training Courses: Machine Tool Operation

D. Adjustment and Repair Procedures for Pulverizers and Associated Coal Processing.

Knowledge of the procedures used to inspect, dismantle, repair, reassemble, adjust and check centrifuges, pulverizers, piping and other types of coal handling equipment. Knowledge of the probable causes of equipment malfunctions.

Training Courses: Rigging, Balancing, Alignment, and Scaffolding

Job Activity Groups

Below are the major job activity groups that are covered on the test. The study references are guides and may not include all the material covered on the test.

ACTIVITY GROUP 1 - AS DIRECTED, ASSISTS THE JOURNEYMAN POWERPLANT MECHANIC IN GENERAL WELDING AND BRAZING OPERATIONS.

The Power Plant Mechanic B assists when performing arc and oxyacetylene welding on pulverizers, centrifuges, and related parts, as well as arc welding on coal pipes. The employee assists with preparation of equipment and parts for welding involving the cutting, heating, and grinding of materials.

ACTIVITY GROUP 2- AS DIRECTED, ASSISTS THE JOURNEYMAN POWERPLANT MECHANIC WITH INSPECTION, OVERHAULING, REPAIRING, AND MAINTENENCE OF PULVERIZRES, CENTRIFUGES, AND OTHER TYPES OF POWER PLANT MECHANIC EQUIPMENT.

The Power Plant Mechanic B assists when using precision measuring instruments to check clearances and/or tolerances, to layout work, to establish reference points for inspection purposes, assembling, disassembling, repairing, and assembling of coal-handling equipment, and when aligning and adjusting parts, components, and equipment according to required specifications. The employee assists in overhauling, cleaning, and repairing of pulverizers and centrifuges at the generating station job site, including coal piping, ribbon conveyors, oil systems, blast gates, gear boxes (e.g., centrifuge gear boxes). The employee assists in the initial inspection of all of the coal-handling equipment and piping. The employee assists with the inspection and troubleshooting of the pulverizers, centrifuges, and associated auxiliary parts and components.

ACTIVITY GROUP 3- AS DIRECTED, ASSISTS THE JOURNEYMAN POWERPLANT MECHANIC IN GENERAL MAINTENANCE AND REPAIRS OF TOOLS, MACHINERY, AND EQUIPMENT.

The Power Plant Mechanic B assists the Power Plant Mechanic A with maintenance of centrifuges, pulverizers, and other types of Power Plant Mechanic equipment. The employee is also responsible for preventive maintenance on machinery and equipment.

ACTIVITY GROUP 4- AS DIRECTED, ASSISTS THE JOURNEYMAN POWERPLANT MECHANIC IN LIFTING, TRANSPORTING, RIGGING, AND MOVING MATERIAL AND EQUIPMENT.

The Power Plant Mechanic B assists using various types of lifting equipment and/or rigging to assemble/disassemble parts, components, or pieces of equipment. The employee also assists using non-motorized moving aids, forklift trucks, and other vehicles to transport and load/unload equipment and materials.

ACTIVITY GROUP 5- AS DIRECTED, ASSISTS THE JOURNEYMAN POWERPLANT MECHANIC IN READING AND INTERPRETING WORK PROCEDURES AND TECHNICAL INFORMATION.

The Power Plant Mechanic B assists with the reading and interpretation of reference materials, blueprints, and other technical written materials in order to make and repair parts and equipment. The employee also uses sketches and diagrams to machine or assemble parts.

Study References

Below is a combined listing of the study references for material covered on the test. The materials listed in this guide are available from general company references (e.g. ESM, Accident/Fire Prevention Manual, etc.), PPMB training materials, or department reference material (e.g., on-line computer systems, etc.). If you have trouble locating the reference material, contact names are provided after the reference.

Coal Cake Moisture and Particle Sampling, PPMB Training Course (Contact: Uhwon Kim)

Physical Chemistry Book (particle theory)

Centrifuge Technology/Separation Technology Book

Quality Policy Manual

Edison Systems Manual, Section 37

MMS, PPMB Training Course (Contact: Brent Windle)

System Basics Student Workbook, (Contact: Hector Santa Cruz)

WMS/LER, PPMB Training Course (Contact: Hector Santa Cruz)

Machine Tool Operation (Contact: Al Bruner)

Machine Tool Practices, Unit 1, Unit, 2, Unit 3, Unit 4, Unit 6, Unit 11 (Contact: Al Bruner)

Hobart Institute of Welding Technology, PPMB Training Course (Contact: Stan Moore)

Mill and Centrifuge Function, Edison Drawings (Contact: Robert Watkins)

Mill and Air Flow, PPMB Training Course (Contact: Robert Watkins)

Quality Process/ISO9000, PPMB Training Course (Contact: Mary Evans)

ISO 14000, PPMB Training Course (Karl Gieszl)

SCE Dynamic Balancing Workbook, PPMB Training Course (Contact: Mike Harrison)

SCE Precision Alignment Workbook, PPMB Training Course (Contact: Mike Harrison)

Scaffold Training Institute Learning Guide, (Contact: Ron Hayward)

Rigging Standards Manual

OSHA Safety Guidelines Manual

Accident Prevention Manual

General Rules

Introduction and Policy

Safe Working/General

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Sample Questions

The following are samples of the type of questions that you will encounter in this test. An answer page follows the questions.

1. A requisition:

- a. orders material directly from the supplier.
- b. is a formalized request for materials or services.
- c. is sent to the supplier via an "electronic data information" system.
- d. must have an Edison material code.

2. What system does Mohave Generating Station use to create work requests?

- a. WMS
- b. MMS
- c. LER
- d. WRS

3. You should use _____ when cleaning chips from a milling machine.

- a. an air hose
- b. your fingers
- c. a magnet
- d. a chip brush

4. The oxyacetylene is a:

- a. welding process which produces fusion of metals by heating them with an arc.
- b. welding process which produces fusion of metals with the heat obtained from resistance electrical current.
- c. gas process that uses intense heat from the burning of fuel gas and oxygen to produce a weld.
- d. gas shielded process which produces welds with the heat of a tungsten electrode arc.

5. Hard surfacing rods are applied to protect the base metal from:

- a. impact
- b. wear
- c. bending
- d. Both a and b

6. The last digit of a numerical indicator on an electrode indicates:

- a. that the electrode may be used in all welding positions.
- b. the usability of the electrode including type of current, penetration, covering and slag, and iron-powder content.
- c. the color of weld deposit
- d. All of the above

7. The distance the fusion zone extends below the surface of the part(s) being welded is:

- a. penetration.
- b. a crater.
- c. porosity.
- d. lack of fusion

8. You should use a double sling (two part sling) when lifting:

- a. two or more objects more than twelve feet in length.
- b. any objects.
- c. items weighing more than 100 pounds.
- d. triangular-shaped objects.

Answers to Sample Questions

The following are answers to the sample questions on the previous pages.

- 1. b**
- 2. a**
- 3. d**
- 4. c**
- 5. d**
- 6. b**
- 7. a**
- 8. a**

Study Guide Feedback

