SYSTEM OPERATOR/
POWER DISPATCHING II
SELECTION SYSTEM

Test Brochure
System Operator/Power Dispatching II Selection System (SO/PD II)

A nationwide research study sponsored by the Edison Electric Institute led to the development of tests to select and evaluate candidates for System Operator/Power Dispatching positions in energy control centers of electric utilities.

The study was conducted by the Human Resources Research Organization (HumRRO) and involved the participation of 17 investor-owned electric utility companies and hundreds of company officials, supervisors, and system operators/power dispatchers working in dozens of energy control centers. This led to the identification of four job-related selection tests: Analytic Thinking Skills, Mathematical Usage, Reading Comprehension, and Multitasking Simulation.

The Analytic Thinking Skills Test measures the ability to analyze information and logically derive conclusions. The Mathematical Usage Test measures the ability to solve and manipulate mathematical relationships. The Reading Comprehension Test measures the ability to read and understand the type of material found in power plant operator training and safety manuals. The Multitasking Simulation measures the ability to monitor multiple tasks simultaneously and move between them to respond as needed.

The SO/PD II test battery is computer-based and requires candidates to read test questions on a computer screen, listen to tones, and respond using a computer mouse or keyboard. The selection test battery requires approximately two and a half hours to administer.
The SO/PD II battery consists of the following tests:

**Analytic Thinking Skills Test.** The Analytic Thinking Skills Test measures a candidate’s ability to analyze information and logically derive conclusions. The test contains 23 total questions and has a 45-minute time limit. The test is divided into three sections: Argument, Problem Solving, and Logic-based Reasoning. Examples of each test section are shown below.

**Section 1: Argument**
This section consists of passages that present an argument and some evidence supporting the argument. Each passage is followed by a question that asks you to draw a conclusion based on the evidence presented (e.g., assumptions underlying the passage, statements that might weaken or strengthen the argument, possible explanations for the statements, etc.). For each question, you are then provided with five response options, and you need to select the one that best answers the question. There are seven questions in this section.

---

**Analytic Thinking Skills**

**Section 1 - Argument**

**Example Question**

Our IT department has noticed an increase in the number of computer viruses. Please be careful about opening e-mails from anyone you do not know.

The argument above depends on which of the following assumptions?

- **A** Computer viruses being transmitted through e-mails are particularly damaging.
- **B** E-mails sent from unknown parties are more likely to contain computer viruses.
- **C** Employees are more likely to receive e-mails from unknown parties than from people they know.
- **D** The company’s virus protection software is not effective against viruses transmitted through e-mails.
- **E** Computer viruses are only transmitted through e-mails.

Answer “B” is the best answer to this question, so you would choose the response option that corresponds to that answer.
Section 2: Problem Solving
This section consists of two passages followed by a set of facts, provided as a bulleted list, related to the passage. Each passage and set of facts is followed by questions that require you to use the passage AND the facts to determine the answer. There are five questions in this section.

Analytic Thinking Skills

Section II - Problem Solving

Example Question

A project must be completed by performing tasks in order. There are five tasks: Task1, Task2, Task3, Task4, Task5.
- Task1 and Task4 must be completed consecutively, but only after completing Task5.
- Task3 cannot be completed before Task1.
- Task4 depends on the completion of Task2.

Based on the above information, which of the following is a correct ordering of the project?

A) Task2, Task5, Task1, Task3, Task4
B) Task5, Task2, Task4, Task1, Task3
C) Task1, Task2, Task3, Task4, Task5
D) Task2, Task1, Task4, Task5, Task3
E) Task3, Task5, Task1, Task4, Task2

Answer "B" is the best answer to this question, so you would choose the response option that corresponds to that answer.
Section 3: Logic-based Reasoning
This section consists of passages that present some facts about a specific topic. Each passage is followed by several statements that represent inferences one might draw from the facts given in the passage. There are 11 questions in this section. You are to read each passage carefully and then decide whether each statement is:

- **TRUE**: that is, the statement follows necessarily from the facts given in the passage.
- **FALSE**: that is, the statement is incompatible with the facts given in the passage.
- **INDETERMINABLE**: that is, the facts in the passage do not contain sufficient information to determine whether the statement is definitively true or definitively false.

---

**Example Question**

Explosives are substances or devices capable of producing a volume of rapidly expanding gases that exert a sudden pressure on their surroundings. Chemical explosives are the most commonly used, although there are mechanical and nuclear explosives. All mechanical explosives are devices in which a physical reaction is produced, such as that caused by overloading a container with compressed air. While nuclear explosives are by far the most powerful, all nuclear explosives have been restricted to military weapons.

From the information above, it can be validly concluded that:

- All mechanical explosives have been restricted to military weapons

**Indeterminable** is the best answer to this question. To mark this answer, you would choose the response option that corresponds to I. If the answer were true, you would choose the response option that corresponds to T. If the answer were false, you would choose the response option that corresponds to F.
**Mathematical Usage Test.** The Mathematical Usage Test measures candidates’ skill in working with basic mathematical formulas based on information provided in the test. This test includes 16 questions and has a 17-minute time limit. An example of the Mathematical Usage Test is shown below:

<table>
<thead>
<tr>
<th>1 mile = 5,280 feet</th>
<th>1 kilogram = 1,000 grams</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kilometer = 1,000 meters</td>
<td>1 kilogram = 2,205 pounds</td>
</tr>
<tr>
<td>1 hand = 10 centimeters</td>
<td>1 yard = 36 inches</td>
</tr>
<tr>
<td>1 centimeter = 0.394 inches</td>
<td>1 slug = 14.59 kilograms</td>
</tr>
<tr>
<td>1 acre = 160 square rods</td>
<td>1 mile/minute = 88 feet/second</td>
</tr>
<tr>
<td>1 acre = 43,560 square feet</td>
<td>1 fathom = 6 feet</td>
</tr>
<tr>
<td>1 furlong = 40 rods</td>
<td>1 hogshead = 63 gallons</td>
</tr>
<tr>
<td>1 gallon = 3.785 liters</td>
<td>1 gill = .25 pints</td>
</tr>
<tr>
<td>1 rod = .25 chains</td>
<td>1 pint = .5 quarts</td>
</tr>
<tr>
<td>1 pound = 16 ounces</td>
<td></td>
</tr>
</tbody>
</table>

**Example Question**

2 yards – 2 inches

- **A** 72
- **B** 88
- **C** 36
- **D** 18
- **E** None of the Above

Answer “A” is the correct answer to this question, so you would choose the response option that corresponds to that answer.
**Reading Comprehension.** This test measures a person's ability to read and understand the type of material found in power plant training and safety manuals. The Reading Comprehension test consists of four reading passages, each followed by several multiple-choice questions about the passage. There are a total of 26 questions on the test with a 22-minute time limit.

---

**Example Passage**

Do you remember the game we used to play as kids where we would rub a balloon against a wool sweater and then see if the balloon would stick to the wall? This is an example of "static electricity." Though static electricity is a common phenomenon, its cause is quite mysterious and often unknown.

According to the passage, "static electricity" is:

A. A common phenomenon.

B. Quite rare.

C. Found only in winter.

D. None of the Above

Answer "A" is the correct answer to this question, so you would choose the response option that corresponds to that answer.
**Multitasking Simulation.** The Multitasking Simulation measures how well a candidate can monitor multiple tasks simultaneously and move between them to respond as needed. During the test, candidates must complete four separate tasks, each presented in a separate quadrant of the screen:

- a memorization task, where candidates must memorize a series of short alphanumeric codes and then determine whether another code presented a few seconds later was included in the list;
- a basic math skills task, where candidates solve addition problems using three-digit numbers;
- a visual monitoring task, where candidates must monitor a needle on a color coded gauge as it moves from the center to the left or right and stop the needle before it reaches the end of the gauge; and
- a listening task, where candidates periodically hear low pitch and high pitch tones and must click a button on the screen to identify the type of tone each time one is presented. The candidate must be able to hear the difference in tones.

Each individual task is intended to be simple on its own in order not to confound an individual’s ability to simultaneously monitor and perform the tasks with the abilities measured by the individual tasks. Candidates’ scores are based on how many individual tasks they answer correctly and how quickly they’re able to move between the tasks. There are two test trials lasting five minutes each. See below for an approximate example of the simulation task.

**Example Screen Image:**

![Example Screen Image](image)

**Scoring and Interpretation**

The SO/PD II test battery is scored by combining the scores from each of the tests. This total score yields a test result of “Recommended” or “Not Recommended.”