Description of Various EEI Test Batteries

The material that follows summarizes some of the test batteries that the Employment Testing Department of EEI has developed and validated for use as selection tools in the electric utility industry. The batteries covered include:

- Plant Operator Selection System (POSS)
- Power Plant Maintenance Selection System (MASS)
- Construction and Skilled Trades Selection System (CAST)
- Technician Occupations Selection System (TECH)
- System Operator/Power Dispatching Positions Selection System (SO/PD II)

Plant Operator Selection System (POSS)

POSS is a set of test batteries that was developed and validated to aid in selecting power plant operators. POSS can be used to select candidates for operating jobs in fossil, nuclear, or hydro plants.

Sample jobs for which the POSS test may be appropriate include the following:

- Plant operator, turbine operator, auxiliary operator
- Control room operator

The tests take about two hours to administer. Components of the batteries measure how a candidate compares with others on a number of important aptitudes or abilities. The battery for nuclear jobs differs somewhat from the test battery used exclusively for non-nuclear jobs.

Sample Aptitudes Measured by POSS

Reading Comprehension. This test measures a person's ability to read and understand the type of material found in power plant operator training and safety manuals. The Reading Comprehension test consists of five reading passages, each followed by several multiple-choice questions about the passage.

Mechanical Concepts. This test measures the ability to understand mechanical principles. Each multiple-choice item contains a pictorial description of a mechanical situation, a question, and three possible answers.

Mathematical Usage. This test measures skill in solving and manipulating mathematical relationships.

Spatial Ability. This test requires an individual to identify patterns in order to solve problems. There are three different types of questions: Picture Series, Picture Comparison, and Picture Progression.

Power Plant Maintenance Selection System (MASS)

The MASS test was developed and validated to aid in the selection of power plant maintenance personnel. Sample jobs for which the MASS test may be appropriate include the following:

- Mechanic, machinist, electrician, welder, pipefitter, steelworker, rigger
- Instrument and control repairer
- Helper, painter, insulation worker

The tests take about two and one-half hours to administer. Components of the battery measure how a candidate compares with others on a number of important aptitudes or abilities.

Sample Aptitudes Measured by MASS

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 five reading passages, each followed by several multiple-choice questions about the passage.

Mechanical Concepts. This test measures the ability to understand mechanical principles. Each multiple-choice item contains a pictorial description of a mechanical situation, a question, and three possible answers.

Mathematical Usage. This test measures skill in solving and manipulating mathematical relationships.

Spatial Ability. This test measures the ability to visualize the properly assembled form of an object. In this test, candidates are to assemble the parts so that the places having the same letter are put together.

Construction and Skilled Trades Selection System (CAST)

CAST is a battery of aptitude tests designed and validated to aid in the selection of candidates across a wide variety of construction and skilled trades occupations.
Sample jobs for which the CAST test battery may be appropriate include the following:

- Transmission and Distribution
- Facilities and Repair
- Other Facilities (e.g., Carpenter)
- Electrical Repair
- Machining and Vehicle Repair
- Meter Services and Repair

The tests take about two hours to administer. Components of the battery measure how a candidate compares with others on a number of important aptitudes or abilities.

Sample Aptitudes Measured by CAST

Reading Comprehension. This test measures a person's ability to read and understand the written materials. The test consists of four reading passages, each followed by several multiple-choice questions about the passage.

Mechanical Concepts. This test measures the ability to understand mechanical principles. Each multiple-choice item contains a pictorial description of a mechanical situation, a question, and three possible answers.

Mathematical Usage. This test measures skill in solving and manipulating mathematical relationships.

Graphic Arithmetic. This test measures the ability to solve arithmetic problems by using information from prints or drawings. The test contains two drawings, each followed by several questions.

Technician Occupations Selection System (TECH)

TECH is a battery of aptitude tests designed and validated to aid in the selection of candidates for electric utility technical occupations for which an associate degree is normally required. Sample jobs for which the TECH test battery may be appropriate include the following:

- Chemistry/Laboratory/Environmental Technician
- Communication/Telecommunication Technician
- Design/Engineering Technician
- Distribution/Planning Technician/Estimator
- Drafter
- Health Physics/Radiation Control Technician
- Testing/Relay Technician

The tests take about two hours to administer. Components of the battery measure how a candidate compares with others on a number of important aptitudes or abilities.

Sample Aptitudes Measured by TECH

Graphic Problem Solving. This test measures a person's ability to use numerical information presented in illustrations to solve practical arithmetic problems.

Interpreting Diagrams. This test measures the ability to use symbols and codes to locate objects on a map or diagram and to determine the object's status.

Mechanical Concepts. This test measures the ability to understand mechanical principles. Each multiple-choice item contains a pictorial description of a mechanical situation with associated questions.

Reasoning from Rules. This test measures the ability to read and apply rules to make decisions and to troubleshoot a logic network.

System Operator/Power Dispatching Positions Selection System (SO/PD II)

The SO/PD test battery was developed and validated to aid in the selection of system operator/power dispatcher personnel, as well as natural gas controller jobs. The SO/PD II test battery is computer-based and takes about two and a half hours to administer.

Sample Aptitudes Measured by SO/PD

Analytic Thinking Skills. This test measures a candidate's ability to analyze information and logically derive conclusions. The test is divided into three sections: Argument, Problem Solving, and Logic-based Reasoning.

Mathematical Usage. This test measures skill in working with basic mathematical formulas based on information provided in the test.

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.

Multitasking Simulation. This test 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.