
APPENDIX F

GLOSSARY

Achievement test: An instrument designed to measure a trainee's grasp of some body of knowledge or skill proficiency.

Annual: In most instances, a period of time equal to 365 days reckoned from any point in a calendar year to the same point in time in the following calendar year. However, annual requirements in successive years can reach a period of nearly two years. Annual could encompass a range extending to 729 days depending on when an event occurred in the first calendar year and viewing December 31 of the following calendar year as meeting the annual requirement.

Applicant: Any individual who has submitted an NRC Form 398 in pursuit of an RO or SRO license. For purposes of this and the other Examination Standards, it is synonymous with "candidate."

Applicant license level: The level of operator license (i.e., RO or SRO) for which the applicant has applied.

Aptitude test: An instrument designed to assess an individual's potential for performing some task or skill area.

Average: A score that provides an indication of the typical performance of a group of scores. The mean, median, and mode of a distribution of scores are all commonly used as averages.

Biennial: In most instances, a period of time equal to 730 days and synonymous with the term "two years." Biennial requirements can extend beyond 730 days if the requirement is met during the anniversary month of the second year. For example, a biennial medical examination last performed on January 10, 1995, would be due again by January 31, 1997. January is seen as the anniversary month, the period of time between the two examinations is longer than 730 days, but the biennial requirement is satisfied.

Bloom's Taxonomy: A classification system that depicts knowledge and information processing of knowledge in a hierarchy from lowest to highest as follows: fundamental knowledge, comprehension, analysis, synthesis, and evaluation.

Calendar quarter: One of four parts of a calendar year, each consisting of a 3-month segment. In any calendar year, the first quarter is from the first day of January to the last day of March, the second quarter is from the first day of April to the last day of June, the third quarter is from the first day of July to the last day of September, and the fourth quarter is from the first day of October to the last day of December.

Category: One of 3 major subdivisions of related subjects on the operating test. Refer to Section D of ES-301 for a description of and detailed instructions for developing each operating test category.

Central tendency: A term referring to the most typical performance of a group of individuals; generally the mean, median, or mode

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Cognitive: Aspects of a person or test level that refer to knowledge or understanding.

Content validity: The degree to which a test measures the specific objectives or content of that test.

Correlation coefficient: A numerical value ranging from -1 to +1 that indicates the relationship between two sets of scores or other measures of each individual in a group. A value of 0 indicates no relationship; +1 or -1 indicates a perfect relationship, either positive or negative.

Criterion: A characteristic or combination of characteristics used as the basis for judging a performance.

Criterion-referenced test: An examination based upon mastery of objectives of content that was or should have been taught and mastered and one that uses an established standard or cutoff score as a measure of acceptable performance.

Cut score: The score at which a trainee is deemed to have met the criteria on an exam.

Designated nuclear control room operator: In accordance with Section C.1.2 of Regulatory Guide 1.8, Revision 3, an individual assigned to a licensed control room operator position identified in either Technical Specification Table 6.2.1 or the table "Minimum Requirements Per shift for On-Site Staffing of Nuclear Power Units by Operators and Senior Operators Licensed Under 10 CFR Part 55" in 10 CFR 50.54(m)(2)(i).

Diagnostic test: An instrument that is designed to identify the strengths and weaknesses of an individual for a given content area.

Difficulty index: A numerical index ranging from 0.00 to 1.00 that indicates the percentage of trainees who answer a test item correctly. An index of 0.00 indicates that no one answered the test item correctly while an index of 1.00 indicates that all individuals answered the item correctly.

Discrimination index: A measure of a test item's ability to differentiate between good and poor trainees. A high discrimination index indicates that more high performers than low performers answered the item correctly (high and low are typically determined by overall test scores but may also be established by external criteria).

Discrimination validity: Setting the item difficulty at an estimated level around the cut score.

Distractor: An incorrect alternative among the choices of a test item.

Error of measurement: Any difference between an obtained score and a true score on a test is referred to as error of measurement. The actual error of measurement can only be estimated since it is impossible to know what the true score is.

Equivalent forms: Two or more exams that test the same objectives using different test items or the same test items in a different sequence.

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Frequency distribution: A graphic display listing scores, or score intervals on one axis of a graph, and the number of trainees at that score or in that interval on the other.

Item analysis: A set of procedures performed on examination items to determine their difficulty and discriminating power.

Item bank: A group of test items covering a defined area. Items for a test can be chosen from this source.

Item stem: The part of a test item that presents the problem or situation to be solved. The stem may be a question requiring a response or a statement that is followed by the alternatives from which the trainee must choose the best answer.

Job performance measure (JPM): An evaluation tool that is based on tasks contained in the facility's job task analysis (JTA) or the applicable NRC Knowledge and Abilities Catalog (NUREG-1122 or 1123) and requires the applicant to perform (or simulate) a task applicable to the license level of the examination.

Job task analysis (JTA): A systematic analysis of the knowledge, skills, and abilities required to perform a particular occupation.

Learning objective: A statement of the behavior a trainee is expected to exhibit following instruction.

Mastery test: A term synonymous with criterion-referenced test, i.e., evaluating the expected behavior following instruction.

Mean: An indication of central tendency; it usually refers to the arithmetic mean, which is computed by summing all the scores of a group and dividing that sum by the number of scores in the group.

Median: A measure of central tendency; the point on a scale of scores that splits the scores in half; 50 percent of the scores are below this point, and 50 percent of the scores are above this point.

Mode: The least reliable of the common measure of central tendency; the mode is the most frequently occurring score in a distribution of scores.

Multiple choice item: A test item composed of a stem and several alternatives from which the trainee must select the best answer.

Normal distribution: A theoretical frequency distribution represented by a symmetrical bell-shaped curve; sometimes referred to as the bell curve.

Norm-referenced: A score interpretation based on the comparison of an individual's score with a comparable reference group.

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Nuclear power plant experience: As defined in Section 2 of ANSI/ANS-3.1-1993, is applicable work performed in a nuclear-fueled electric power production plant during preoperational, startup testing, or operational activities. Observation of others performing work is not experience.

Objective test: A test that can be scored without subjective judgment in the scoring.

On-the-job training: Participation in nuclear power plant startup, operation, maintenance, or technical services as a trainee under the direction of experienced personnel.

Operating test: That portion of the operator licensing examination based on direct interaction between an examiner and an applicant.

It tests the applicants' knowledge of the design and operation of the reactor and its associated plant systems, both inside and outside the control room. It is administered in a plant walk-through and in a simulation facility.

Operational validity: A test item that is 1) related to the operations of the job and appears reasonable to ask and 2) expressed in an operational context that requires the candidate to mentally or physically perform through understanding or analysis.

Performance test: Any test that requires the trainee to demonstrate either mental performance through knowledge testing or skill by actual operation or manipulation of tools and equipment. Typically, performance tests connote the meaning of skill testing.

Plant-referenced simulator: As defined in 10 CFR 55.4, means a simulator modeling the systems of the reference plant with which the operator interfaces in the control room, including operating consoles, and which permits use of the reference plant's procedures. A plant-referenced simulator demonstrates expected plant response to operator input, and to normal, transient, and accident conditions to which the simulator has been designed to respond.

Power plant experience: As defined in Section 2 of ANSI/ANS 3.1-19 ANSI/ANS-3.1-1993, is applicable work performed in a fossil-fueled or nuclear-fueled electric power production plant during preoperational, startup testing, or operational activities. Observation of others performing work is not experience.

Predictive validity evidence: The ability of a test to forecast future performance on a subsequent measure.

Psychomotor: The domain of human performance that relates to physical performance based on mental activity.

Range: The smallest interval on a scale of scores that will include all scores, mathematically defined as the largest score minus the smallest score plus one.

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Raw score: The numerical score first assigned when scoring a test before conversion to a derived score.

Reactor operator applicant: An unlicensed individual who is applying for an RO license.

Reference plant: As defined in 10 CFR 55.4, means the specific nuclear power plant from which a simulation facility's control room configuration, system control arrangements, and design data are derived.

Related experience: In accordance with Section C.1.1 of Regulatory Guide 1.8, Revision 3, experience in performing job duties in the discipline for which the individual seeks qualification; such experience may or may not be at a nuclear power plant.

Related technical training: Formal training beyond the high school level in technical subjects associated with the position in question, such as acquired in training schools or programs conducted by the military, industry, utilities, universities, vocational schools, or others. Such training programs shall be of a scheduled and planned length and include text material and lectures.

Reliability: The consistency or repeatability of any measure as an indicator of confidence of that measure.

Responsible nuclear power plant experience: As defined in Section C.1.3 of Regulatory Guide 1.8, Revision 3, means that a senior operator applicant has actively performed as a designated nuclear control room operator or as a power plant staff engineer involved in the day-to-day activities of the facility.

Time spent in academic or related technical training may fulfill the requirement for responsible nuclear power plant experience, on a one-for-one basis, up to a maximum of 1 year.

Scenario: An integrated group of events that simulate a set of plant malfunctions and evolutions at a simulation facility.

Scenario set: A group of scenarios that constitutes a complete simulator test (i.e., Category C, "Integrated Plant Operations," of the operating test).

Score: A numerical indication of the performance an individual displays on a test.

Senior reactor operator upgrade (SRO-U) applicant: A licensed RO who is applying for an SRO license on the same unit(s).

Senior reactor operator instant (SRO-I) applicant: An unlicensed individual who is applying for an SRO license.

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Simulation facility: As defined in 10 CFR 55.4, means one or more of the following components, alone or in combination, used for the partial conduct of operating tests for operators, senior operators, and applicants:

1. the plant
2. a plant-referenced simulator
3. another simulation device

This definition provides flexibility in the conduct of the "Integrated Plant Operations" category of the operating test, as permitted in 10 CFR 55.45(b). It allows examiners to administer the operating test on the plant itself, a plant-referenced simulator, or some other type of NRC-approved simulation device, such as a part-task or basic-principles simulator.

Staff engineer: In accordance with Section C.1.4 of Regulatory Guide 1.8, Revision 3, an individual in a technical support position (i.e., personnel covered in Sections 4.4.10 and 4.6 of ANSI/ANS3.1-1993) who is responsible for the coordination and implementation of any of the following: plant equipment control, integrated operation procedures, operations, maintenance, and radiological support, or review of modification and maintenance plans for plant systems.

Standard deviation: A measure of variability of a set of scores around the group mean. The SD is mathematically defined as the square root of the mean of the squared deviations of the scores from the mean of the distribution.

Standard error of measurement: An estimate of the standard deviation of the errors of measurement associated with the test scores in a given test.

Standardized test: A test that has the directions, time limits, and conditions of administration made consistent for all offerings of the test; this test is usually norm-referenced.

Statistic: A numerical value computed on a sample of data.

Technical Specifications: A document that identifies the plant-specific safety limits, system operability and surveillance testing requirements, and administrative controls. Whether stated or not, references to the technical specifications in this NUREG include those administrative controls that have been moved to other technical requirements documents.

Test: A measurement instrument; examination.

True score: The ideal or correct score for an individual. Its value cannot be known, but it can be estimated when assumptions regarding error of measurement are made.

Validity: The degree to which a test measures what it purports to measure.