

Course: Operating Examination Techniques
Lesson Title: Documentation and Grading of Operating Tests

I. SPECIAL INSTRUCTIONS AND TRAINING AIDS

A. Special Instructions

1. None

B. Training Aids Needed

1. Transparencies

- a. Purpose and Objective sheet
- b. Definitions
- c. The Grading Process
- d. Grading Category A
- e. Grading Category B
- f. Grading Category C
- g. Forms ES-303-3 / 4 (example)
- h. Forms ES-303-1 / 2 (completed)
- i. What to Document

2. Handouts

- a. Transparencies
- b. Example Form ES-303-1

II. REFERENCES

- A. Operator Licensing Examination Standards for Power Reactors, NUREG-1021, ES-303, Revision 8, Supplement 1 [WITH DRAFT REVISION 9 SUMMARY]
- B. BWR K/A Catalog, NUREG-1123
- C. PWR K/A Catalog, NUREG-1122

III. OBJECTIVES

A. Terminal

1. Evaluate RO / SRO applicant performance after the operating examination and document this evaluation using the Examination Standard Forms and Attachments.
2. Make a final pass / fail recommendation based upon applicant performance and guidance contained in the Examination Standards.

B. Enabling

1. Explain documentation requirements and the correct method of categorizing and cross-referencing performance comments.
2. Explain the procedures for computing competence grades on simulator and non-simulator examinations.
3. Explain the concept of normalizing missed competencies.
4. Describe the guidelines for determining satisfactory or unsatisfactory performance on the operating examination (All Categories).

IV. PRESENTATION**A. Introduction (SLIDE-A)**

1. Review the learning objectives

B. When do you do your pass / fail evaluation (?)

1. Evaluation during the exam should be limited to making an assessment of individual applicant actions (simulator and JPM) and responses to individual scripted questions for the purpose of determining whether additional probing is required to assess level of knowledge / understanding.
2. Don't try to make a an overall pass / fail decision during the examination.

In some cases you may not know if the applicant's responses to unscripted follow-up questions are correct.

Concentrate on documentation

Tabulate, collate, and evaluate the correctness / importance later.

C. Definitions (refer to ES-303, p. 1) (SLIDE-B)

1. Satisfactory
2. Unsatisfactory

D. The Grading Process (SLIDE-C)

1. Review and categorize rough notes for JPMs, scenarios, and questions

Use figures, flowcharts, forms generated by applicant; be sure to mark and cross-reference to deficiencies

Research and validate technical accuracy of unexpected actions or answers

Highlite and label every deficiency (action, response, note, or comment) with the alphanumeric code of the topic or rating factor to which it applies. Recall the policy on peer checks - a checker who misses an error is also held accountable as is an operator who would have made an error were it not for the peer check.

Simulator deficiencies should normally be coded with no more than two rating factors, unless a significant deficiency can be shown to be relevant to each cited factor consistent with the documentation requirements

2. Evaluate the applicant's performance

a. Category A (Administrative Topics) (SLIDE-D)

1. Evaluate comments on applicant's responses to questions and performance of JPMs for each of the four administrative topics.

Consider the correctness of the response (completion of the critical steps for JPMs) and the importance of the K/A and apply best judgement to make overall assessment for each topic.

2. Enter an S or U in the appropriate blocks on page 2 of Form ES-303-1
3. Determine an overall grade for Category A and enter it in the Summary Block on page 1 of Form ES-303-1

A "U" in one of the four administrative topics may justify a failure depending on the importance and safety-significance of the deficiencies

A "U" in two or more of the administrative topics requires a "U" overall

This highlights the importance of selecting and developing K/As (questions) that would justify a failure if they are missed

Enter an "N/E" if this category was waived IAW ES-204

b. **Category B (Control Room Systems and Facility Walk-through)**
(SLIDE-E)

1. If all JPM critical steps are completed correctly then enter an S in the JPM block for that System/JPM on page 2 of Form ES-303-1

If the applicant misses a step and later performs it correctly and the plant is not degraded by the delay then it should be judged satisfactory; however, this does not prohibit you from making a comment regarding the operator's performance

Time critical JPMs must be performed within the specified time limit to get a Satisfactory

Per Sup. 1, all other JPMs should normally be completed within twice the validated time estimate (refer to Section D.2.f of ES-302). The reason for terminating any JPM shall be documented in accordance with Section D.3

2. Evaluate each performance-based follow-up question and determine if the answer was satisfactory or unsatisfactory.

Each system is graded based on task completion. However, the responses to any performance-based follow-up questions asked pursuant to Section D.2.f of ES-302 must confirm that the applicant's understanding of the system/JPM is satisfactory.

If the follow-up questions reveal that the applicant's understanding of the system/JPM is seriously deficient, the examiner may recommend an unsatisfactory grade for the system even though the applicant successfully completed the task standard for the JPM. The basis for the recommendation shall be thoroughly justified and documented.

Conversely, if the applicant did not accomplish the task standard and follow-up questioning revealed that the failure was caused by a deficiency in the procedure or some other factor beyond the applicant's control, the examiner may still recommend a satisfactory grade for the

system/JPM. Once again, the basis for the recommendation shall be thoroughly justified and documented.

3. Determine a pass/fail grade for each system

Assign an "S" for the system only if both the JPM AND the performance-based questions are satisfactory

Enter a "U" for the system if the JPM was missed OR the performance-based follow-up questions were evaluated as unsatisfactory

Enter the S or U in the "Evaluation" column on page 2 of Form ES-303-1

4. Determine overall Category B grade

Must have $\geq 80\%$ satisfactory system grades

e.g., out of 10 systems covered on a simulator plant (Cat. B.1 and B.2 combined) must get S on at least 8

Enter an S / U evaluation in the Summary Block on page 1 of Form ES-303-1

c. Category C (Integrated plant operations) (SLIDE-F)

1. Evaluate the applicant on each rating factor

Forms ES-303-3 (RO) and 4 (SRO) were designed for use in rating applicant performance on the simulator.

Refer to page 18 of Appendix D for descriptions of competencies.

Each competency has 3 - 4 rating factors that serve as performance based criteria for that competency.

Assess on scale of 1 - 3, with "behavioral anchors" to enhance consistency among examiners.

Ratings of "1" must be justified by missing a critical

task or committing multiple errors of lesser significance that have a bearing on the rating factor

Missing a CT does not mandate a failure, nor does completing all CTs guarantee a pass if other deficiencies justify the failure based on the competencies

Circle the rating value corresponding to the appropriate integral factor on page 3 (a or b) of Form ES-303-1; the weighting factors have already been applied

ALL rating factors should normally be evaluated. If a rating factor is missed, then normalize the weighting factors for the others (provide example).

Post-scenario-set meeting of examiners should ensure that all competencies are covered and "shared" deficiencies are consistently documented

Competency 5 is optional for upgrade SRO applicants but must be graded if the applicant rotated into a panel position (even if the applicant was not evaluated one-on-one as permitted by Section D.1.d of ES-302)

2. Compute competence grades

Sum the rating factor grades and record in the TOTAL blocks of the Form (range 1-3)

3. Compute overall competence rating (S / U) and enter in the Summary on page 1 of Form ES-303-1

All competencies > 1.8

or

If competency 6 is < or = 1.8 but > 1.0, all others must be > or = 2.0

A grade of 1.0 in competency 6 requires an overall U rating

If competency 5 is evaluated for an upgrade SRO it shall be factored into the applicant's final grade

3. Finalize documentation

- a. Revise Form ES-D-1's and 2's to reflect actual "as run" conditions for Category C (events and actions)

Enter applicant names on the scenario outlines for the files

Fill out new Form 2's for unpredicted events

Neatly enter changes or rewrite, as appropriate; Forms with rough notes will not be sent to applicant

Ensure consistency between examiners (conduct post scenario debrief or phone conference); Chief Examiner responsibility

Note on the master scenarios any events that did not run as planned or were not useful in evaluating the applicants; this will aid in future scenario development

- b. Document in detail all deficiencies that contribute to a failure in any operating test category

Deficiencies that do not contribute to an unsat category grade shall also be documented; however a brief statement describing the error and the expected response is generally sufficient

- c. The following information, as applicable, is required to substantiate any unsatisfactory category grade: **(SLIDE-I)**

- the question you asked or task administered (i.e., describe the JPM or the simulator scenario and event and the applicant's position on the operating crew)
- the applicant's incorrect answer or action and an indication whether the action was a JPM critical step
- the lack of knowledge or ability the applicant demonstrated
- the correct answer or action with an appropriate facility reference (e.g., lesson plan, system description, procedure name and number)
- the K/A number and value
- the consequences of the incorrect answer or action
- the item in 10 CFR 55.45 that the applicant was unable to do or explain

The K/A and its importance is the most efficient way to specify the significance of a applicant's response

Use procedural references whenever possible

Direct tie to individual's license: it requires operator to observe and follow facility operating procedures

General statements such as "did not know decay heat removal system" are inadequate

Append any applicant calculations, drawings, printouts, etc. that substantiate the grading

Be careful not to dilute the impact of negative comments by making positive observations; particularly if you are trying to justify a failure

Clear and adequate justification of the facts and sequence of events, with rigorous peer and supervisory review, are essential in limiting chance of an appeal

d. Ensure adequate cross-reference

Each grade and comment should be cross-referenced in the blocks on Forms ES-303-1 and 2 so that reviewers and the applicant can easily determine the reason for every unsatisfactory grade

4. Make a recommendation

- a. If all three operating exam Categories (Administrative Topics, Control Room Systems / Facility Walk-through, and Integrated Plant Operations) are either waived or graded "S" then check the PASS block for the operating test on page 1 of Form ES-303-1

If the applicant made an error with **serious safety consequences**, the examiner can recommend failure even if it is not justified based on the grading criteria discussed above; under such circumstances, the examiner shall thoroughly justify and document the basis for the failure in accordance with Section D.3.b. This also requires written concurrence from IOLB Chief.

- b. If any of the operating test categories is evaluated as a "U" then check the FAIL block under examiner recommendation
- c. Every examiner who administered any part of the operating test for the applicant must sign the form

DOCUMENTATION AND GRADING OBJECTIVES

A. Terminal

1. Document and evaluate operating tests.
2. Make pass/fail recommendations.

B. Enabling

1. Explain documentation requirements.
2. Explain how to compute competence grades.
3. Explain how to normalize missed competencies.
4. Describe the guidelines for determining satisfactory or unsatisfactory performance.

SATISFACTORY

The applicant may have some slight or minor difficulty in relating to system interactions. Competence in the operation of equipment associated with the system is very good although there may be some hesitation while discussing or performing some tasks. The applicant, however, appears to be familiar with the equipment and procedures.

UNSATISFACTORY

The applicant has difficulty answering questions in depth and in relating the interactions of systems. Discussions/ behavior in operating equipment show lack of familiarity with the equipment and procedures. Answers given by the applicant are incorrect and incomplete and/or he/she is unable to provide an answer. The applicant shows obvious unfamiliarity with the subject and/or system, as evidenced by hesitant answers, inability to locate information, inability to locate control board indications and/or controls, and the lack of knowledge of procedural steps to operate systems.

THE GRADING PROCESS

1. Review and categorize notes
2. Evaluate the applicant's performance in each Category
3. Finalize the documentation
4. Make a recommendation

GRADING CATEGORY A

1. Evaluate deficiencies
 - Questions & JPMs
 - Use best judgement
2. Determine topic grades
3. Determine a Category grade

GRADING CATEGORY B

1. Evaluate deficiencies
2. Grade JPMs
3. Consider performance-based questions
4. Grade systems
5. Determine Category B grade

GRADING CATEGORY C

1. Evaluate rating factors
2. Compute competence grades
3. Determine overall Category C grade
(S or U)

WHAT TO DOCUMENT

- The question or task
- The applicant's response
- The correct response
- The lack of knowledge or inability demonstrated
- The K/A number/value and learning objective
- The consequences of the applicant's response
- The 10 CFR 55.45 operating test item

DRAFT REV 9 GRADING CHANGES

- Definitions of “SAT” and “UNSAT” removed
- Can recommend a pass even if applicant made non-critical errors that would normally result in a failure
- Walk-through overall 80% cut score with admin cut scores of 60 and 50% for SROs and ROs (80% for retakes)
- Rating factors and competencies consolidated
- “Not observed” grades now allowed
- Non-critical vs. critical errors clarified
- No more behavioral anchors
- Documentation guidelines clarified