

NRC INSPECTION MANUAL

HOLB

INSPECTION PROCEDURE 71001

LICENSED OPERATOR REQUALIFICATION PROGRAM EVALUATION

PROGRAM APPLICABILITY: 2515

SALP FUNCTIONAL AREA: PLANT OPERATIONS (OPS)

71001-01 INSPECTION OBJECTIVES

01.01 To verify that the facility licensee's requalification program for licensed reactor operators (ROs) and senior reactor operators (SROs) ensures safe power plant operation by adequately evaluating how well the individual operators and crews have mastered the training objectives.

01.02 To assess the facility licensee's effectiveness in evaluating and revising the requalification program for licensed operators based on their operational performance, including requalification examinations.

01.03 To assess the facility licensee's effectiveness in ensuring that the individuals who are licensed to operate the facility satisfy the conditions of their licenses as specified in 10 CFR 55.53.

01.04 To supply regional management with the information necessary to assess the performance of the facility licensee's licensed operator requalification program and determine the need for additional inspections or NRC-conducted examinations.

71001-02 INSPECTION REQUIREMENTS

02.01 Review the facility's operating history. Assess operator performance since the last requalification program evaluation (inspection or examination) to determine if performance deficiencies have been addressed through the requalification training program.

02.02 Review the facility licensee's requalification examinations. Assess the adequacy of the facility licensee's written examinations and operating tests for requalification.

02.03 Review the facility licensee's administration of

| requalification examinations. Observe examinations and tests in progress and interview personnel to assess the facility licensee's effectiveness in conducting written examinations and operating tests to ensure operator mastery of the requalification training program content.

02.04 Review the facility licensee's training feedback system. Assess the effectiveness of the facility licensee's process for revising and maintaining its licensed operator continuing training program up to date, including the use of feedback from plant events and industry experience information.

02.05 Review the facility licensee's remedial training program. Assess the adequacy and verify the effectiveness of the remedial training conducted since the last requalification examinations and the training planned for the current examination cycle to ensure that it addresses weaknesses in licensed operator or crew performance identified during training and plant operations.

02.06 Review conformance with operator license conditions. Review the facility licensee's program for maintaining active operator licenses and ensuring the medical fitness of its licensed operators. Assess the facility and operator licensees' compliance with the requirements for maintaining license conditions in accordance with 10 CFR 55.53.

71001-03 INSPECTION GUIDANCE

General Guidance

Facility licensees are required by 10 CFR 50.54(I-1) to have in effect a Commission-approved operator requalification program which must, as a minimum, meet the requirements of 10 CFR 55.59(c). In lieu of paragraphs (c)(2), (3), and (4) of that section, the Commission may approve a program developed by using a systems approach to training (SAT), as defined in 10 CFR 55.4. In accordance with 10 CFR 55.59(a), each licensed individual must successfully complete the requalification program developed by the facility licensee and pass an annual operating test and a comprehensive written examination administered at the end of each requalification cycle, not to exceed 24 months in duration.

This core inspection procedure is intended to determine if a facility licensee's requalification program meets elements (4) and (5) of a SAT-based program as defined in 10 CFR 55.4. Inspectors should prioritize their activities to ensure that inspection requirements 02.01, 02.02, and 02.03 are completed first. Inspection requirements 02.04, 02.05, and 02.06 are to be considered and performed to the extent necessary to conclude that the objectives of the inspection procedure have been met. In some cases a specific inspection requirement need not be addressed because the inspector is satisfied from inspections already conducted or from other information that the licensee's activities are acceptable.

If regional management determines that the facility licensee's licensed operator requalification program is not based on a systems approach to training as defined in 10 CFR 55.4, consult with the headquarters program office regarding the appropriate response. Regional management should submit all proposed enforcement actions related to 10 CFR Part 55 to the NRR staff for review before issuing them.

The region should announce its intent to conduct requalification inspection activities at a facility. Although most of the inspection activities will be conducted while the facility licensee administers its annual operating tests, the region may exercise discretion regarding where and when it completes some of the inspection requirements. For example, if the region asks the facility licensee to submit specific examinations to the NRC before the site visit, the inspectors can complete portions of inspection requirements 02.01 and 02.02 before they travel to the facility. It is anticipated that two inspectors will then be able to complete the remaining inspection requirements during a one-week visit to the site. If the region does not ask the facility licensee to submit its examinations in advance, the region may send an inspector to the site to review the examination materials in preparation for the primary inspection. As a third option, the region may dispatch three inspectors to complete all the inspection requirements during a one-week site visit. When planning inspection efforts, keep in mind that the regulations only require the facility licensee to administer a comprehensive written examination every two years unless its approved requalification program requires more frequent examinations.

In accordance with 10 CFR 55.59(c), facility licensees are required to submit to the Commission, upon request, the annual operating tests or comprehensive written examinations used for operator requalification. The region may request those tests and examinations in writing by sending the licensee a corporate notification letter similar to the one that is used for NRC-conducted examinations. Usually, the region will ask the facility licensee to submit only those examinations and tests that will be administered during the week of the inspection. Other examination materials, such as previously administered examinations and tests, question banks, and sample plans, are normally reviewed on site.

Regional managers will consider overall facility performance in the results of the NRC's inspection programs and initial examinations. Generally, only the inspection requirements of this procedure will need to be conducted; however, augmented activities can be initiated in accordance with program office guidance when necessary to ensure safe plant operation. Those activities could include a full "Training and Qualification Effectiveness" inspection in accordance with Inspection Procedure (IP) 41500, "for cause" examinations in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," or operational evaluations of on-shift crews.

Since the inspection process relies on sampling a basically sound facility program, the NRC would conduct examinations at the facility only when it has lost confidence in the facility licensee's ability to conduct its own examinations or when the staff believes that the inspection process will not provide the needed insight. Regional management should consider conducting "for cause" requalification examinations or operational evaluations when any of the following conditions exist:

- Requalification inspection findings that indicate an ineffective licensee requalification program.

- Operational problems to which operator error is a major contributor.
- A SALP Category 3 rating in Plant Operations that is attributed to operator performance.
- Allegations regarding significant training program deficiencies.

Implement "for cause" examinations through the normal resource planning process, since an inspection activity would be replaced with more resource-intensive examinations. Using the existing inspection planning process will ensure that the regional office and NRR consider the need for conducting examinations with the alternative expanded inspection tools available, and will allocate the required resources. Operational evaluations should be considered as a reactive effort based on immediate safety concerns.

Specific Guidance

03.01 Review the facility's operating history. Review the following documents to determine the effectiveness of the facility's licensed operator requalification training program.

- a. Most recent SALP report, Plant Issue Matrix (PIM), and Plant Performance Review (PPR).
- b. Recent examination and inspection reports (e.g., emergency preparedness or emergency operating procedure (EOP) inspections) related to operator training or performance.
- c. Resident inspector observations and reports regarding operator performance.
- d. Licensee event reports (LERs).
- e. Other indications of operator performance, such as technical specification (TS) violations, internal event reports, Human Factors Information System (HFIS), and NRC performance indicators (e.g., engineered safety features (ESF) actuations and reactor scrams or trips).

In particular, look for patterns of operator performance that create concern regarding the continued safe operation of the facility. If safety concerns are identified, consider, in consultation with the operator licensing program staff, such actions as holding management meetings, conducting operational evaluations, or taking appropriate licensing or enforcement actions.

03.02 Review the facility licensee's requalification examinations. Assess the facility licensee's examination materials (questions, scenarios, and job performance measures (JPM) banks), sample plans, and proposed and completed examinations and tests, as described below. NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," contains additional information that may be useful to the inspector in conducting the evaluations. The

inspector should not interfere with the facility licensee's requalification examination process by suggesting modifications to test items or examination schedules. If there are significant concerns regarding the quality of the examinations, inform the facility licensee and refer the concerns to regional management as soon as possible. The following activities facilitate this assessment:

- a. Review a representative sample of the facility licensee's examination materials:
 1. The checklists for open reference written test items, JPMS, and dynamic simulator scenarios in Appendix A provide guidance.
 2. Compare plant changes to examination materials to determine whether system and procedure changes are being incorporated into the appropriate written questions, JPMS, and dynamic simulator scenarios. The resident inspectors, other knowledgeable personnel from the Division of Reactor Projects, and the NRR project manager may be able to provide information regarding substantial procedure or system modifications that should have been incorporated into the continuing training and testing programs. The 10 CFR 50.59 periodic reports also contain information on plant changes.
 3. For plants at which operators hold multi-unit licenses, review the methodology for incorporating unit differences in the facility licensee's requalification examinations. Include both written examinations and operating tests using the simulator in this review. Review the extent to which unit differences are identified in training materials and the simulator as they are used in requalification training and examinations. Evaluate exceptions to training guidelines and simulator fidelity standards taken in the requalification program for negative training potential. Verify that operators receive specific training on unit differences.
- b. Review the methodology (i.e., sample plan) that the facility licensee uses to construct its requalification examinations.
 1. Assess whether the facility licensee's comprehensive written examinations and annual operating tests point to areas in which retraining is needed (10 CFR 55.59(c)(4)(I)).
 - (a) Determine if the facility licensee addressed the operator performance deficiencies identified under inspection requirement 02.01.
 - (b) Determine if the facility licensee has incorporated current industry events applicable to the facility into training and testing, as appropriate.

2. Assess whether the facility licensee's written examinations measure the operators' knowledge of subjects covered in the requalification program and provide a basis for evaluating their knowledge of abnormal and emergency procedures (10 CFR 55.59(c)(4)(ii)).
 3. Determine if the operating tests are consistent with activities described in the Updated Final Safety Analysis Report (UFSAR). Determine if operator response times specified in the accident analysis are evaluated during the operating test. Be careful about determining if the simulator scenario accurately matches the assumptions in the accident analysis. Operating test scenarios may include equipment malfunctions beyond those assumed in the accident analysis. In such a case, the operating test scenario may not be a valid measure of (UFSAR) operator response times.
 4. Determine if the licensee has incorporated PRA insights into the comprehensive written examinations and annual operating tests. Refer to Manual Chapter 2515, Appendix C, "Use of Insights Derived from Probabilistic Risk Assessment (PRA)." Coordinate with regional Senior Risk Analysts (SRA) to provide risk insights.
- c. Evaluate the quality and content of a sample of the facility licensee's comprehensive written examinations and annual operating tests for the current requalification program cycle. Assess the ability of the examinations to discriminate operators who possesses a satisfactory level of safety significant knowledge, skills, and abilities. Ensure the examination items are operationally valid. If the facility is not administering a written examination during the current inspection and if examinations were not reviewed during the previous inspection, review a sample of the examinations that were last given. The following activities facilitate this evaluation:
1. Determine if the examinations are consistent with the sample plan, and verify that the same test items are not being repeated from one test week to the next and from one year to the next.
 2. Analyze and compare the comprehension level tested on selected written examinations and operating tests administered during the period under review with the comprehension level tested on other examinations administered or planned during that requalification cycle.
 3. Determine whether the expected performance standards are clear, objective, and relevant.
 4. Verify that the RO and SRO written examinations adequately sample the items stated in 10 CFR 55.41 and 10 CFR 55.43 and that the operating tests adequately sample

the items stated in 10 CFR 55.45.

03.03 Review the facility licensee's practices in administering
requalification examinations

a. Observe as many examination activities as possible to assess the facility licensee's effectiveness in conducting written examinations and operating tests. Focus on those activities that give the greatest insight into the facility licensee's ability to evaluate its operators' mastery of the training program content. In accordance with IP 71707, Plant Operations, sections 02.05 and 03.05, resident inspectors periodically observe simulator training for licensed operators noting deficiencies and discrepancies in the training and assessing operator performance. Coordinate with the resident inspector(s) to ensure that all pertinent issues are understood and that actions and staffing levels in the simulator are consistent with normal control room practices. The following activities facilitate this assessment:

1. Determine whether the examinations are conducted as planned and whether any errors in administration are detected and corrected for subsequent examinations.
2. Determine whether the facility licensee's examination practices gave proper consideration to minimizing undue operator stress (e.g., scheduling, timing of segments, security measures) and the potential for negative training (e.g., testing crew configuration different from operations).
3. Assess the facility evaluators' use of performance standards by grading selected written examination questions and operating tests in parallel and assessing discussions regarding crew and operator performance following the administration of the operating tests. If there are concerns regarding the facility licensee's grading practices, inform the facility licensee of the concerns and refer the concerns to regional management as soon as possible. The following activities facilitate this assessment:
 - (a) Determine whether the performance standards are applied consistently and objectively.
 - (b) Determine whether crew and operator performance errors made during simulator evaluations are detected and adequately addressed by the facility's evaluators.
 - (c) Determine whether any errors made by individual operators during the walk-through examinations are detected and adequately addressed by the facility's evaluators.
 - (d) Determine whether the facility evaluators effectively identify individuals and crews requiring

remediation, and appropriately indicate when removal from shift activities is warranted.

- (e) Determine whether post-examination critiques of operators and crews are effective in pointing out strengths and weaknesses and if they accurately appraise the observed performance.
- 4. Determine whether plant events are factored into the requalification training program based on the review of LERS and plant performance indicators completed under inspection requirement 2.01.
- 5. Determine the licensee's use of industry experience in the requalification training program.
- 6. Assess the facility licensee's Operations Department level of involvement in the requalification testing.
- b. Assess the simulator's performance and its fidelity to the reference plant to determine if it is adequate to support the requalification program. Also assess the safety impact of any negative training caused by simulator deficiencies. Refer to 10 CFR Part 55.59 (c)(3).
 - 1. Record any simulator performance deficiencies noted during the inspection, particularly while observing the dynamic simulator operating tests.
 - 2. If any deficiencies are noted, complete a simulator fidelity report, as outlined in ES-501 of NUREG-1021, and include it in the inspection report.
- c. Interview an operator, an instructor, a training supervisor, and an evaluator regarding the facility's policies and practices for administering examinations. If the interviews result in conflicting information, additional interviews may be needed to clarify the differences. Refer to the suggested interview topics in Appendix B when conducting these and other interviews pursuant to inspection requirements 02.04 and 02.05. These interviews assist the inspector in determining whether:
 - 1. The training staff understands the operating test performance standards and how they are to be implemented.
 - 2. Management guidance and expectations parallel the actual conduct of testing as it was observed.
 - 3. The operators understand the facility licensee's policies and practices and what is expected of them during the examinations.
 - 4. The operators are aware of simulator performance deficiencies and the potential for negative training.

5. The interviewees' perception and knowledge of examination security are consistent with administrative procedures.
- d. Review examination security measures to ensure compliance with 10 CFR 55.49, which prohibits applicants, licensees, and facility licensees from engaging in any activity that compromises the integrity of any application, test, or examination required by 10 CFR Part 55. The following activities facilitate this review:
 1. Review the facility licensee's process for maintaining examination security. Review facility guidelines on allowed overlap between examinations in current exam cycle tests and prior year examination.
 2. Monitor the examination while it is being administered and review the results to determine if there is any indication of examination compromise.
 3. If examination security problems were noted in the past, determine what corrective action(s) have been taken to preclude recurrence.
- e. Observe the activities of one or more operating crews in the control room and compare this performance with performance observed in the simulator on requalification examinations. Examples of activities to compare are: performance of surveillances, supervisory oversight, command and control, communication practices, logkeeping, crew assignments and responsibilities, staffing levels, shift turnover, and management presence. Coordinate this observation with the Resident Inspectors observations of control room activities. For additional guidance refer to IP 71707, Plant Operations, Section 2.04, Operator Knowledge and Performance.

03.04 Review the facility licensee's feedback system

- a. Evaluate whether the facility licensee's use of employee feedback from operators, instructors, and supervisors is effective. The following activities facilitate this evaluation:
 1. Determine who is responsible for obtaining employee feedback and compare that individual's understanding of the program goals to the management expectations for the program.
 2. Review and evaluate a representative sample of the employee comments to determine if the program's consideration of the comments, recommendations, and their implementation are appropriate. Determine if requalification program changes are backlogged and the cause for the backlog. Determine whether program changes are prioritized on the basis of safety. Compare these findings with management expectations.
 3. Interview facility personnel to determine whether they

know of, use, and are satisfied with the system used to gather and implement feedback. Refer to item 03.03.c for related guidance and to Appendix B for suggested interview topics.

- b. If warranted by previous facility performance, review the facility quality assurance/quality control (QA/QC) oversight activities in accordance with 10 CFR Part 50 (Appendix B) and evaluate the licensee's ability to assess the effectiveness of its requalification program and to implement appropriate corrective actions.

03.05 Review the facility licensee's remedial training program. Remedial training includes the additional training provided to operators to correct deficiencies that prevent them from successfully passing the requalification examination and the training provided to operators to correct generic or individual weaknesses observed during the previous requalification cycle examination. The following activities facilitate this review:

- a. Review examples of operator and crew performance weaknesses since the last inspection and determine whether the facility licensee identified their root causes and implemented appropriate corrective actions.
- b. Determine if the facility licensee confirms the effectiveness of its corrective actions at the completion of retraining with a suitable evaluation method.
- c. Review the remediation plans (e.g., lesson plans, reference materials, and attendance documentation) to assess the effectiveness of the remedial training.
- d. When possible, observe applicable simulator and JPM instruction to assess the effectiveness of the remedial training.
- e. Interview selected facility personnel to verify the effectiveness of remedial training. Refer to item 03.03.c for related guidance and to Appendix B for suggested interview topics.

03.06 Review conformance with operator license conditions. Sample the following activities during alternate inspections to verify the facility and individual licensees' conformance with the requirements of 10 CFR Part 55. In an effort to focus the review, the inspector is encouraged to solicit observations and insights in this area from resident inspectors.

- a. Review the facility licensee's program for maintaining active operator licenses and assess compliance with 10 CFR 55.53(e) and (f). The following activities facilitate this review:
 1. Sample records for at least one operating crew to determine if crew members are maintaining active licenses. Review staff operators (i.e., those not assigned to shift crews) to ensure that their licenses

have been activated prior to standing watch.

2. Determine if any operator licenses were reactivated since the last inspection and verify that the operator's qualifications were current and the required operator functions were performed "under direction."

3. Determine if all requalification training is completed on schedule or made up in accordance with the facility's program. Sample training attendance records to include the end of the last two year requalification cycle.

b. Review the facility licensee's program for ensuring the medical fitness of its licensed operators and assess compliance with 10 CFR Part 55, Subpart C, "Medical Requirements," and Subpart F, "Licenses," item 55.53(I). The following activities facilitate this review:

1. Review a representative sample (i.e., approximately 10 percent) of the licensed operators' medical records to verify that the required physical examinations are being performed and documented.

2. Verify that operator licensees are complying with special license conditions, as applicable, and that those operators who do not meet medical standards are precluded from performing licensed duties.

71001-04 RESOURCE ESTIMATE

It is estimated that approximately 96 hours of direct inspection effort (DIE) will be required to conduct this inspection.

It is expected that the actual hours required to complete the inspection may vary from the estimate. The inspection hours allocated for the inspection procedure are an estimate for the typical plant for budgeting purposes. Inspections at superior performers would normally be completed in less than the estimated hours. The hours expended during an inspection should be tailored for the facility licensee and accurately recorded.

71001-05 REFERENCES

10 CFR 50.54, Conditions of Licenses

10 CFR Part 55. OPERATORS' LICENSES

Site-specific Technical Specifications

ANSI/ANS-3.1-1981, "Selection, Qualification, and Training of Personnel for Nuclear Power Plants" (or other standards committed to by the licensee)

ANSI/ANS 3.4-1983, "Medical Certification and Monitoring of Personnel requiring Operator License for Nuclear Power Plants"

ANSI/ANS 3.4-1996, "Medical Certification and Monitoring of Personnel requiring Operator License for Nuclear Power Plants"

ANSI/ANS 3.5-1985, "Nuclear Power Plant Simulators for Use in Operator Training"

Regulatory Guide 1.134, Revision 3, "Medical Evaluation of Licensed Personnel at Nuclear Power Plants" (or Revision 2 of the Regulatory Guide)

Regulatory Guide 1.149, Revision 2, "Nuclear Power Plant Simulation Facilities for Use in Operator License Examinations" (or earlier version of the Regulatory Guide committed to by the licensee)

Regulatory Guide 1.8, Revision 2, "Qualification and Training of Personnel for Nuclear Power Plants"

NUREG-1021, "Operator Licensing Examination Standards for Power Reactors"

NUREG-1220, Revision 1, "Training Review Criteria and Procedures"

NRC Inspection Manual Chapter 0304, "Plant Performance Review"

NRC Inspection Manual Chapter 2515, "Light-Water Reactor Inspection Program, Operations Phase"

NRC Inspection Manual Chapter 2515, Appendix C, "Use of Insights Derived from Probabilistic Risk Assessment (PRA)"

Inspection Procedure 41500, "Training and Qualification Effectiveness"

Inspection Procedure IP-71707, "Plant Operations"

Inspection Procedure IP-71715, "Sustained Control Room and Plant Observation"

SECY-98-043, "Annual Status Report on the Administration of NRC's Requalification Program and the Initial Operator Licensing Examinations - Response to Staff Requirements Memorandum (M8800098)"

NRC Information Notice No. 91-08, "Medical Examinations for Licensed Operators"

NRC Information Notice No. 95-24, "Summary of Licensed Operator Requalification Inspection Program Findings"

NRC Information Notice No. 94-14, Supplement 1, dated April 14, 1987 "Failure to Implement Requirement for biennial medical examinations and notification to the NRC of changes in licensed operator medical conditions"

END

Appendices:

Appendix A, "Checklists for Evaluating Facility Testing Material"

Appendix B, "Suggested Interview Topics"

APPENDIX A

CHECKLIST FOR EVALUATING FACILITY TESTING MATERIAL
(Circle yes or no)

Written Examination Questions Checklist

- Y / N 1. Does each question have a documented link to important licensee tasks, knowledge and abilities (K/As), and/or facility learning objectives?
- Y / N 2. Is each question operationally oriented (i.e., is there a correlation between job demands and test demands)?
- Y / N 3. Is each question written at the appropriate level of knowledge (fundamental knowledge, comprehension, or application/analysis)? Refer to Appendix B, "Written Examination Guidelines", of NUREG-1021, "Operator Licensing Examinations for Power Reactors," for guidance.
- Y / N 4. Is the context of each questions realistic and free of window dressing and backwards logic?
- Y / N 5. Does each question possess a high K/A importance factor (3 or greater) for the job position?
- Y / N 6. Does each question appear to have the ability to discriminate between an operator who possesses a satisfactory level of safety significant knowledge?
- Y / N 7. Is each question appropriate for the written examination and the selected written examination format (e.g., short answer; multiple choice)?
- Y / N 8. Does any question have the potential of being a "double jeopardy" question?
- Y / N 9. Is each question clear, precise, and easy to read and understand?
- Y / N 10. Is there only one correct answer to each question?
- Y / N 11. Does each question pose situations and problems other than those presented during training?

ADDITIONALLY, FOR OPEN-REFERENCE QUESTIONS:

- Y / N 13. Does each question require an appropriate use of references (i.e., use of analysis skills or synthesis of information either to discern what procedures were applicable or to consult the procedures to obtain the answer)?
- Y / N 14. Is any question a "direct look-up" question (i.e., one that immediately directs an operator to a particular reference where the answer is readily available)?

Y / N 15. Are there any questions given in a static scenario setup that takes advantage of the simulator control room setting?

Job Performance Measure (JPM) Quality Checklist

Y / N 1. Is each task supported by the facility's job task analysis?

Y / N 2. Is each task operationally important (i.e., meets threshold criterion of K/A at 3 or above or as determined by the facility)?

Y / N 3. Is each task designed as either SRO only, RO/SRO, or AO/RO/SRO?

Y / N 4. Does each JPM include the items listed below? (Refer to Appendix C, "Job Performance Measures Guidelines," of NUREG-1021, "Operator Licensing Examinations for Power Reactors" for guidance.)

Y / N Initial conditions

Y / N Initiating cues

Y / N References, including associated procedures

Y / N Performance standards that are specific in that exact control and indication nomenclature and criteria (switch position, meter reading) are specified, even if these criteria are not specified in the procedural step

Y / N System response cues in the performance standards that are complete and correct so that the examiner can properly cue the operator, if asked

Y / N Statements describing important actions or observations that should be made by the operator

Y / N Criteria for successful completion

Y / N Identification of the critical steps and their associated performance standards

Y / N Validated time limits (average time allowed for completion)

Y / N JPMs identified as time critical or not time critical

Y / N Restrictions on the sequence of steps

Simulator Scenario Review Checklist

Qualitative Attributes

- Y / N 1. Is each scenario of the appropriate scope, depth, and complexity with clearly stated objectives? (refer to Appendix D, "Simulator Testing Guidelines", of NUREG-1021, "Operator Licensing Examinations for Power Reactors", for guidance.)
- Y / N 2. Are the initial conditions realistic, in that some equipment and/or instrumentation may be out of service, but it does not cue crew into expected events?
- Y / N 3. Does each scenario consist mostly of related events?
4. Does each scenario event description include:
- Y / N the point in the scenario when it is to be initiated?
- Y / N the malfunction(s) that are entered to initiate the event?
- Y / N the symptoms/cues that will be visible to the crew?
- Y / N the expected operator actions (by shift position)?
- Y / N the event termination point?
- Y / N 5. Is no more than one non-mechanistic failure (e.g., pipe break) incorporated into each scenario without a credible preceding incident such as a seismic event?
- Y / N 6. Is each event valid with regard to physics and thermodynamics?
- Y / N 7. Is the sequencing/timing of each event reasonable, and does it allow for the examination team to obtain complete evaluation results commensurate with the scenario objectives?
- Y / N 8. Has the simulator modeling been altered?
- Y / N 9. Can each rating factor in each crew competency be evaluated?
- Y / N 10. Has each scenario been validated?
- Y / N 11. If the sampling plan indicates that the scenario was used for training during the requalification cycle, has the facility determined whether it should be modified or not used?

Simulator Scenario Review Checklist (continued)

Note: The following criteria list scenario traits that are numerical in nature. A second set of numbers indicates a range to be met for a set of two scenarios. Therefore, to complete this part of the review, the set of scenarios must be available.

Quantitative Attributes

- | Y / N 12. Total malfunctions inserted: 4 to 8 / 10 to 14
- | Y / N 13. Malfunctions that occur after EOP entry: 1 to 4 / 3 to 6
- | Y / N 14. Abnormal Events: 1 to 2 / 2 to 3
- | Y / N 15. Major Transients: 1 to 2 / 2 to 3
- | Y / N 16. EOPs used beyond primary scram response EOP: 1 to 3 / 3 to 5
- | Y / N 17. EOP Contingency Procedures used: 0 to 3 / 1 to 3
- | Y / N 18. Approximate scenario run time: 45 to 60 minutes (one scenario may approach 90 minutes)
- | Y / N 19. Crew Critical Tasks: 2 to 5 / 5 to 8
- | Y / N 20. Are Technical Specifications exercised during the test?

COMMENTS:

END

APPENDIX B

SUGGESTED INTERVIEW TOPICS

Activity	Suggested Interview Topics/Questions
General	Former positions at the facility: How long? Licensed?
	Current position and duties: How long? Licensed? Requalification program responsibilities?
03.02 & 03.03 - Exams, performance standards, simulator, and security	Examinations: How developed? Sampling plan? Appropriate coverage? License level? Practiced/covered in training? Duplicate quizzes? Too easy/hard? Too long/short? Were references necessary? How compare with NRC exams?
	Performance standards: How are they formulated? Operations versus training? Are they endorsed by management? Are they objective? How are they communicated to evaluators? Do the operators know what is expected of them? Are they applied consistently?
	Performance feedback: Is it timely? Is it objective? What happens if you fail? How could feedback be improved?
	Administration: Operating/training crew = test crew? What happens if you miss an exam? Measures to mitigate undue stress?
	Simulator: Does it respond correctly? Is hardware current? Any negative training?
	Security: Are exams common? How is security ensured? Are there formal procedures? Who is responsible? Do you feel comfortable with process? Do security measures cause undue stress? Are you aware of any incidents? What would you change if you could?
03.04 - Feedback system	Feedback collection: How is it done? Who collects comments? Who is solicited? Does the QA/QC Department oversee the program?
	Comment resolution: Who does it? Are they timely? Safety basis for changes? How is management involved? How are changes promulgated? Were they resolved to your satisfaction? Feedback to originator? Recent examples?
	Overall, how effective is your training program? The examination program? The feedback system? How would you improve it?

03.05 - Remedial training program	Program development: How are remedial training needs identified? Individual/crew exam results? On-the-job performance/events? Generic weaknesses? Who develops remedial training programs? How is Operations involved?
	Implementation: Is it appropriate? Is it effective? How is remediation verified? How would you improve it?

END