

POLICY ISSUE NEGATIVE CONSENT

March 12, 2003

SECY-03-0038

FOR: The Commissioners

FROM: William D. Travers
Executive Director for Operations

SUBJECT: ANNUAL STATUS REPORT FOR FY 2002 ON THE ADMINISTRATION
OF THE NRC'S REQUALIFICATION PROGRAM AND THE RESULTS
OF INITIAL OPERATOR LICENSING EXAMINATIONS
(WITS 198800098)

PURPOSE:

To inform the Commission of the status of the Nuclear Regulatory Commission's (NRC's) licensed operator requalification program and the results of the agency's initial licensing examinations for reactor operator (RO) and senior reactor operator (SRO) applicants for fiscal year (FY) 2002, and to obtain (by negative consent) Commission approval to discontinue the requirement to submit an annual report on these subjects, given the stability of the licensed operator requalification program and the initial licensed operator program.

BACKGROUND:

Since August 28, 1989, the staff has provided periodic reports on the NRC's licensed operator requalification program. In FY 1992, the staff started including status information in the report on the initial licensed operator program. In the last annual report (SECY-02-0044) submitted on March 14, 2002, the staff recommended discontinuing this report. On April 3, 2002, in a staff requirements memorandum (SRM) responding to SECY-02-0044, the Commission disapproved the staff's recommendation but stated that, if the stabilization of the program continued, the staff should recommend discontinuing the reporting requirement in the next (FY 2002) annual report. In reference to facility-prepared initial licensing examinations, the SRM directed the staff to evaluate the continuing issues associated with ensuring consistency in examination quality among licensees and examination developers. The staff was also directed to provide additional information regarding implementation of the operator requalification significance determination process.

CONTACT:

David C. Trimble, NRR/DIPM
(301) 415-2942

DISCUSSION:

NRC Requalification Program and Inspection Summary for Fiscal Year 2002

During FY 2002, the staff continued to monitor and inspect facility licensees' licensed operator requalification training and examination programs. The objectives of the inspections were to (1) confirm that the requalification programs contributed to safe power plant operation by evaluating how well individual operators and crews mastered training program objectives; (2) assess licensee effectiveness in evaluating and revising requalification programs for licensed operators on the basis of operational performance (including operator performance on requalification examinations); (3) assess licensee effectiveness in ensuring that licensed operators satisfy the conditions of their licenses as specified in 10 CFR 55.53, "Conditions of Licenses;" and (4) provide regional management with the information it needs to assess the effectiveness of licensees' operator requalification programs and to determine the need for additional inspections or NRC-conducted examinations. The staff evaluated the programs using the process described in NRC Inspection Procedure (IP) 71111.11, "Licensed Operator Requalification Program."

In August 2002, the staff enhanced the requalification inspection program and revised IP 71111.11 to implement the final rule to amend 10 CFR Part 55 (66 FR 52657), which became effective on November 16, 2001. The final rule, known as the simulator rule, amended 10 CFR Part 55 to permit applicants for operator and senior operator licenses to fulfill some required experience prerequisites by manipulating a plant-reference simulator as an alternative to manipulation of the actual plant controls. The IP now incorporates assessments of (a) the adequacy of the facility licensee's simulation facility for use in operator licensing examinations and for satisfying experience requirements as prescribed in 10 CFR 55.46, and (b) the effectiveness of the facility licensee's process for assuring simulator fidelity by identifying, reporting, correcting, and resolving simulator discrepancies.

The regional staff conducts a requalification program inspection at each facility at least every 24 months, consistent with the licensee's requalification examination cycle. In addition, the resident inspector staff reviews licensed operator requalification testing and/or training activities at least once each quarter. The staff may also conduct "for cause" requalification examinations if it loses confidence in a licensee's ability to conduct examinations or if it believes that the inspection process will not produce the necessary insights into the quality of the licensee's program. During FY 2002, the staff did not conduct any "for cause" requalification examinations.

The staff conducted biennial licensed operator requalification inspections at 47 power reactor facilities during FY 2002 and identified several findings (discussed in the following section). As shown in the table below, the staff continues to believe that the power reactor facilities inspected are satisfactorily maintaining their licensed operator requalification training programs.

NRC Qualification Program Evaluation Results for Fiscal Years 1994 through 2002									
	1994	1995	1996	1997	1998	1999	2000	2001	2002
No. of programs evaluated	43	58	41	41	32	40	41	36	47
No. of satisfactory / unsatisfactory programs*	43/0	58/0	41/0	41/0	32/0	40/0	41/0	36/0	47/0
Percent satisfactory	100	100	100	100	100	100	100	100	100
*A program rating of satisfactory indicates that the licensee's requalification program, with limited exceptions, complied with the requirements of 10 CFR 55.53 and 55.59 for the areas inspected, and the staff did not administer requalification examinations as a result of any findings.									

Operator Requalification Findings

During this reporting period, the staff made one yellow, one white, and three green findings on operator requalification.

The yellow finding was at Indian Point, Unit 2, where four of seven crews failed the dynamic simulator examination in October 2001. Crews received remedial training and were reexamined before resuming licensed duties. The staff conducted a supplemental inspection per IP 95001, "Inspection for One or Two White Inputs in a Strategic Performance Area," and another IP 71111.11 requalification inspection in October 2002. The staff has noted substantial improvement but the yellow finding remains open until the staff determines that the licensee's corrective actions have effectively addressed the underlying causes of the yellow finding.

The white finding involved an examination compromise at the Cooper plant resulting from an improper validation process for the July 2000 biennial written requalification examinations. The staff identified the issue in the fall of calendar year 2001. After the examinations were regraded, two operators were found to have failed the examination. In May 2002, the staff conducted a supplemental inspection per IP 95001 and concluded that the licensee had satisfactorily addressed all of the requalification issues associated with the finding and implemented all required corrective actions.

The green findings were as follows:

1. A Non-Cited violation of 10 CFR 55.53(f)(2) was identified at the Calvert Cliffs plant regarding the licensee's methods and standards used to reactivate operator licenses to support refueling outages.
2. Two of nine crews failed the requalification operating test at the LaSalle plant (the crews were remediated and reexamined).
3. Two of ten crews failed the dynamic simulator portion of the licensed operator requalification examination at Millstone, Unit 3 (the crews were remediated and reexamined).

Three other potential green findings have not yet been resolved, one on simulator fidelity and two others on inadequate record keeping. At the Kewaunee plant, two potential simulator issues have been identified concerning the failure to comply with 10 CFR 55.46, "Simulation Facilities." The first issue involves the licensee's use of the simulator to meet experience requirements for applicants for initial operator and senior operator licenses in accordance with 10 CFR 55.46 (c)(2)(i). The second issue concerns the licensee's program for correcting simulator modeling and hardware discrepancies and discrepancies identified from performance testing in accordance with 10 CFR 55.46(d)(2).

In addition, one significant requalification finding was identified at the Dresden plant. On July 1, 2002, the licensee reported to the NRC that due to an oversight, Dresden had not conducted a comprehensive biennial requalification written examination during the last requalification program cycle, contrary to 10 CFR 55.59(c). The licensee administered the required exam, albeit approximately 6 months late. The NRC issued the licensee an exemption to allow the Dresden licensed operator requalification program to resume a proper examination schedule. The NRC also issued 47 notices of enforcement discretion to individual operators who were not administered a comprehensive written examination within the required time period. The determination of the proper enforcement action for Dresden is still pending. The NRC has discussed the issues related to scheduling of requalification examinations at two public meetings with the Nuclear Energy Institute's (NEI's) operator licensing focus group in August and October 2002. The NRC and facility licensees are reexamining licensed operator requalification training programs for compliance with the scheduling requirements in 10 CFR Part 55. As of the end of fiscal year 2002, no additional requalification schedule problems had been identified. The NRC plans to inform facility licensees of this issue by a regulatory information summary in 2003.

The requalification findings identified in FY 2002 were restricted to a few facilities, which indicates that these issues are not generic industry problems.

Operator Requalification Human Performance Significant Determination Process (ORSDP)

In December 2000, the staff started using the ORSDP (which consists of a logic flowchart and matrix) to determine the risk importance of issues identified during requalification inspections. Experience to date with application of the ORSDP indicates that it is easily understood and objective, with clear criteria for categorization of the findings. The staff believes that the colors assigned by the ORSDP to the Operator Requalification findings identified in FY2002 appropriately reflect the safety significance of the issues involved. Thus the ORSDP has proven to be an effective tool for ensuring consistent, appropriate regulatory treatment of identified operator requalification issues. Experience with the ORSDP has resulted in some minor modifications (implemented on March 27, 2002) to improve clarity and ensure consistency with applicable regulations, including the recent simulator rule.

Summary of Initial Examination Results

The staff continues to administer initial licensing examinations to applicants for RO and SRO licenses at power and non-power reactor facilities. During FY 2002, the staff administered approximately 50 site-specific initial licensing examinations to 370 applicants (163 ROs and 207 SROs) at power reactor facilities. This number includes site-specific licensing

examinations for 291 candidates that were prepared, in whole or in part, by facility licensees in accordance with the NRC's examination guidance in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." The NRC staff reviews and approves all facility-prepared examinations prior to administration, and NRC certified examiners administer all of the operating tests. In addition to the facility-prepared examinations that were administered to 79 percent of the applicants (compared to 68 percent in FY 2001), the staff administered NRC-prepared examinations to 21 percent of the applicants (compared to 32 percent in FY 2001). This reflects an improving trend, and the ratio of NRC-prepared and licensee-prepared examinations nationwide aligns well with budgetary planning assumptions.

The following table summarizes the power reactor initial operator licensing examination results from FY 1998 through FY 2002; the results for NRC-prepared and facility-prepared examinations are listed separately. These results indicate that initial operator training programs at power reactors continue to produce a large number of applicants who pass the operator licensing examinations, regardless of whether the examinations were prepared by the NRC or by the facility licensees.

Power Reactor Initial Examination Results											
Examination		Percentage of Applicants Who Passed During the Fiscal Year									
		1998		1999		2000		2001		2002	
		Exam Prepared		Exam Prepared		Exam Prepared		Exam Prepared		Exam Prepared	
		NRC	Facility	NRC	Facility	NRC	Facility	NRC	Facility	NRC	Facility
RO	Written	N/A	89	100	89	98	95	96	86	97	98
	Operating	N/A	99	100	93	100	98	99	100	100	98
SRO	Written	100	96	100	94	100	95	99	95	98	97
	Operating	94	96	100	98	96	99	100	97	100	96

The overall quality and consistency of facility-prepared examinations is good, and shows an improving trend. During FY 2001, the staff noted that consistency in examination quality among licensees was a problem. However, the percentage of exams with a high number of post-exam comments, which adversely reflects on examination quality, decreased from 17 percent in FY 2001 to 6 percent in FY2002 and the average number of unacceptable written examination questions submitted by facility licensees decreased slightly (approximately 2 percent per exam on average). Also, consistency was good between the average score on facility-prepared written examinations (~87.6 percent) and the average score (~86.9 percent) for NRC-developed written exams. Notwithstanding the improved performance noted above, a few licensees submitted poor exams. There have also been isolated instances of facility-prepared examinations with a problematically high number of post-examination comments.

The staff continues to seek ways to improve the quality and consistency of facility- and NRC-prepared examinations, while reducing unnecessary burden and maintaining the integrity and reliability of the examinations. Examples of program improvements are given in the next section.

The following table indicates the total number of applicants who requested that NRC review their examination results from FY 1996 through FY 2002. During FY 2002, the staff noted a negligible increase in the number of proposed applicant denials overturned by the review process. One denial was overturned because the applicant provided new information that the NRC and the facility licensee had not considered during the pre- or post-examination reviews. The second overturned denial involved an NRC grading error on an operating test that was corrected immediately upon notification by the applicant. The staff believes that the low number of overturned denials is the result of the staff's careful pre- and post-examination reviews of examination test items. In FY 2003 to date, the staff has received four applicant requests for NRC review of proposed license denials.

Power Reactor Initial Examination Denial Results							
	1996	1997	1998	1999	2000	2001	2002
No. of proposed applicant denials	47	44	41	60	19	35	19
No. of applicant-requested reviews	12	13	20	16	9	4	3
No. of final denials	44	35	28	47	16	34	17
No. of licenses issued upon review	3	9	13	13	3	1	2

The following table summarizes the results of the non-power reactor initial operator licensing examinations from FY 1998 through FY 2002. During FY 2002, the staff administered approximately 31 site-specific initial licensing examinations to RO and SRO applicants at non-power reactor facilities (compared to 28 in FY 2001) in accordance with the current examination guidance in NUREG-1478, "Non-Power Reactor Operator Licensing Examiner Standards."

Non-Power Reactor Initial Examination Results						
Examination		Percentage of Applicants Who Passed During the Fiscal Year				
		1998	1999	2000	2001	2002
RO	Written	87	63	78	94	85
	Operating	100	96	89	98	92
SRO	Written	94	100	82	89	100
	Operating	100	100	100	100	93

The non-power initial operator licensing program has not been modified and remains consistent and stable. The results continue to indicate that training programs for non-power reactor facility operators generally produce applicants who pass the NRC's licensing examinations.

Operator Licensing Program Initiatives

During FY 2002 and FY 2003 to date, the NRC has continued its efforts to improve and support the oversight of the operator licensing program and respond to stakeholder concerns. For example:

1. The staff issued for public comment and voluntary trial use a draft Revision 9 to NUREG-1021. The proposed draft revision incorporates a number of enhancements developed over the last two years in cooperation with NEI's operator licensing focus group. The proposed changes are to (a) reduce the length of the reactor operator written examination (in a manner that reduces burden in examination development with no expected reduction in examination reliability); (b) clarify and simplify the design of the senior reactor operator written examination; (c) better risk-inform the reactor operator and senior operator written examinations; (d) better balance the administrative and plant systems portions of the walk-through operating test; (e) clarify the grading criteria for the simulator operating test; and (f) incorporate guidance on peer checks and the suppression of inappropriate knowledge and ability catalog statements.
2. The staff conducted a training conference at the NRC's Region II office for all operator licensing examiners in the second quarter of FY 2003 to ensure that NRC examiners continue to receive appropriate training and policy direction from senior executives and managers, to discuss pertinent topics, and to provide

feedback to the Office of Nuclear Reactor Regulation (NRR). The conference is an effective tool for promoting consistency in the operator licensing program.

3. The staff sponsored regional workshops with facility licensees, and attended several meetings of industry groups, such as the Middle Atlantic Nuclear Training Group (MANTG), the Southeastern States Nuclear Training Association (SSNTA), and NEI to promote dialog and feedback on the proposed future changes to examination standards included in Revision 9 of NUREG-1021. The staff participated in a 2-day industry-sponsored national workshop in February 2003 focusing on proposed Revision 9 changes to the operator licensing examination standards and recent changes to the requalification inspection baseline procedure, IP 71111.11, which implements the simulator rule.

CONCLUSION:

The NRC's licensed operator requalification inspection program continues to effectively ensure that those individuals who are licensed to operate or supervise the reactor controls maintain the required level of competence to safely perform their licensed duties. The NRC's initial operator licensing examination program continues to provide reasonable assurance that only those applicants who have mastered the knowledge, skills, and abilities required to safely operate and supervise the reactor controls are being licensed to do so.

RECOMMENDATION:

The FY 2001 report noted that the consistency in examination quality among licensees and examination developers remained an area for improvement, in part because of the turnover of experienced facility licensee examination developers. However, based on a recently conducted study by the staff, overall examination quality and consistency during FY 2002 appeared to be good, with indications of an improving trend. A few licensees submitted problematic examinations to the NRC.

In view of the stabilization achieved in the initial operator licensing examination and the operator requalification programs, the staff recommends that this report be discontinued. This would result in a staff resource savings of approximately 0.3 FTE per year. The initial operator licensing process has reached an acceptable level of maturity as demonstrated by (1) the good consistency obtained in results between facility-prepared and NRC-prepared examinations, and (2) the good overall quality of facility-prepared examinations (with a few exceptions). In regard to proposed Revision 9 changes to the examination standards (NUREG-1021), the staff will continue to work with affected stake-holders to identify, pilot, and implement the program enhancements that improve efficiency and effectiveness or reduce unnecessary regulatory burden provided the enhancements preserve requisite examination reliability. Similarly, the maturity of the operator requalification programs at licensee facilities is indicated by (1) the satisfactory results of NRC requalification inspections, (2) the effectiveness of the requalification inspection process and ORSDP in identifying issues and ensuring their consistent and appropriate regulatory treatment, and (3) the fact that the issues that have been

identified are not generic industry problems. If unexpected problems arise during the piloting of Revision 9 to the examination standards or during implementation of the simulator rule, the staff will inform the Commission of the issues and corrective actions.

Staff requests action within 10 days. Action will not be taken until the SRM is received. We consider this action to be within the delegated authority of the EDO.

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***See previous concurrence**

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