

March 6, 1998

FOR: The Commissioners
 FROM: L. Joseph Callan /s/
 Executive Director for Operations
 SUBJECT: ANNUAL STATUS REPORT ON THE ADMINISTRATION OF NRC'S REQUALIFICATION PROGRAM AND THE INITIAL OPERATOR LICENSING EXAMINATIONS (WITS 8800098)

PURPOSE:

To inform the Commission of the status of the NRC's licensed operator requalification program and the results of NRC's initial licensing examinations for reactor operator (RO) and senior reactor operator (SRO) applicants.

BACKGROUND:

On August 28, 1989, the staff issued its first periodic report on the status of NRC's licensed operator requalification program. The staff continued to issue quarterly or semiannual status reports through the end of calendar year 1991. Since January 1992, the staff has submitted annual reports that combine the results of NRC's initial RO and SRO licensing examinations and requalification program oversight activities. Staff reports to the Commission on the NRC's Requalification Program and the Initial Licensed Operator Examinations include SECY-92-066 (dated February 25, 1992), SECY-93-027 (dated February 5, 1993), SECY-94-039 (dated February 18, 1994), SECY-95-042 (dated February 17, 1995), SECY-96-026 (dated February 6, 1996), and SECY-97-033 (dated February 11, 1997).

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On March 24, 1995, the staff issued SECY-95-075, "Proposed Changes to the NRC Operator Licensing Program," which stated the staff's intent to revise the initial operator licensing program to allow facility licensees to write the examinations, eliminate contractor assistance, and adjust the level of NRC oversight of licensed operator requalification programs. With the Commission's approval, the staff conducted a pilot program to evaluate the revised examination process. On June 10, 1996, the staff issued SECY-96-123, "Proposed Changes to the NRC Operator Licensing Program," which summarized the results of the pilot program and requested the Commission's approval to continue the new examination process on a voluntary basis while simultaneously pursuing a rule change that would require power reactor facility licensees to write the examinations.

On September 25, 1996, the staff issued SECY-96-206, "Rulemaking Plan for Amendments to 10 CFR Part 55 To Change Licensed Operator Examination Requirements," which provided additional information regarding the revised examination process and requested the Commission to approve the plan to amend 10 CFR Part 55 to require power reactor facility licensees to prepare the entire initial examination. In a staff requirements memorandum dated December 17, 1996, the Commission approved the staff's rulemaking plan and the implementation of Revision 8 of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," on a voluntary basis until the rulemaking is complete.

DISCUSSION:

NRC Requalification Examination and Inspection Summary for Fiscal Year 1997

During fiscal year (FY) 97 the staff continued to monitor the facility licensees' licensed operator requalification training and examination programs. The staff inspected the licensed operator requalification programs at 41 power reactor facilities during FY 97 to verify that the programs could ensure the continued competence of individual licensed operators. All of the programs were evaluated using the process described in NRC Inspection Procedure (IP) 71001, "Licensed Operator Requalification Program Evaluation." The staff uses the inspection procedure to evaluate each licensed operator requalification program at 24-month intervals, consistent with each facility licensee's requalification examination cycle. The staff may also conduct requalification examinations, as needed, when it loses confidence in a facility licensee's ability to conduct its own examinations or believes that the inspection process will not provide the needed insight; the staff did not conduct any requalification examinations during FY 97.

As noted in SECY-96-026, the staff is no longer tracking the number of licensed operators and crews who pass or fail their requalification examinations. The attachment contains the individual results of the requalification program inspections at each facility inspected during FY 97. A rating of SAT (satisfactory) for the requalification program inspections indicates that the licensee's requalification program complied with the requirements of 10 CFR Part 55.53 and 55.59, and that the staff did not elect to conduct NRC for-cause requalification examinations as a result of any weaknesses that were noted. The requalification program inspection results are summarized in the following table.

Requalification Program Examination and/or Inspection Results for Fiscal Year 1997			
Element	Number Evaluated	SAT/UNSAT	Percent SAT
NRC Program Examinations (NUREG-1021)	None	N/A	N/A
NRC Program Inspections (IP-71001)	41	41/0	100
Total	41	41/0	100

The staff evaluated each of the facility licensee requalification programs previously mentioned to ensure that: (1) the program ensures safe power plant operation by adequately evaluating how well the individual licensed operators and crews have mastered the training objectives; (2) the program is effective in evaluating and revising the requalification training for licensed operators on the basis of their operational performance, including requalification examinations; and (3) the program ensures that the individuals who are licensed to operate the facility satisfy the conditions of their license.

Inspectors generally found that the programs were adequate, with site-specific strengths and weaknesses. Examples of the strengths included the development and administration of the simulator portion of the operating test; the objectivity and thoroughness of the licensee's evaluators in identifying operator strengths and weaknesses; the quality of the written examination which had notably improved; and the effectiveness of the training feedback system in providing input to upgrade requalification training. Examples of the weaknesses relating to the adequacy of the requalification written examinations and operating tests included deficiencies in the use of command and control, communication, and procedures by the crew and individuals; inadequate procedures, resulting in poor operator performance; technical and administrative errors in written questions; repetitive use of test items from week to week; inadequate operating test pass/fail criteria; and the use of nondiscriminatory or improperly validated job performance measures (JPMs) for the plant walkthrough inspection portion of the operating test. Examples of the weaknesses relating to the licensee's examination administration practices included failing to evaluate individual operator performance during the dynamic simulator scenario portion of the operating test; returning operators to licensed duties without adequate remediation and reevaluation after they failed the examination; and failing to conduct annual operating tests of all licensed operators. The regional staff follows up the site-specific weaknesses in subsequent requalification program inspections and uses the information to assess overall plant performance. The staff is continuing its review of requalification program inspection results to identify potential generic issues.

Although all of the requalification program inspections resulted in satisfactory evaluations, the licensed operator requalification training program at D.C. Cook exhibited multiple weaknesses in areas such as the individual evaluation process; examination test item development; and the remediation and reevaluation of operators who fail the examinations. As a result of these weaknesses and programmatic findings from the July 1997 initial examination, the staff conducted a follow up inspection in January 1998 to assess the adequacy of the facility licensee's corrective actions.

Summary of Initial Examination Results

The staff is continuing to administer initial licensing examinations to applicants for RO and SRO licenses at power and non-power reactor facilities. The following table gives the power reactor initial operator licensing examination results over a period of 5 years from FY 93 through FY 97. During FY 97, the staff administered approximately 54 site-specific initial licensing examinations to RO and SRO applicants at power reactor facilities. This number includes 41 site-specific licensing examinations that had been prepared by facility licensees in accordance with the NRC's revised examination guidance. The table provides separate NRC-prepared and facility-prepared examination results for FYs 96 and 97. In addition, the staff administered 328 generic fundamentals examinations to prospective license applicants at power reactor facilities.

Power Reactor Initial Examination Results								
Examination		Percentage of Applicants Who Passed During Fiscal Year						
		1993	1994	1995	1996		1997	
					NRC Prepared	Facility Prepared	NRC Prepared	Facility Prepared
RO	Written	94	95	94	98	93	96	89
	Operating	95	98	98	94	94	93	94
SRO	Written	98	98	96	96	94	91	93
	Operating	95	95	95	92	95	84	92

These results show that power reactor facility operator training programs continue to produce applicants who pass the operator licensing examinations at a relatively high percentage rate, regardless whether the examinations were prepared by the NRC or the facility licensees (with NRC review and approval). An analysis of the facility-prepared examination results will be provided with the proposed final rule to amend 10 CFR Part 55 to require power reactor facility licensees to prepare the initial licensing examinations.

The SECY paper that forwards the proposed final rule will also discuss important issues associated with the revised examination process in addition to the public comments regarding the proposed rule and interim Revision 8 of NUREG-1021. The public comments included letters from the Nuclear Energy Institute (NEI), five nuclear facility licensees and one utility employee, one nonpower reactor facility licensee, three NRC license examiners, one contract examiner, and the State of Illinois. The nuclear power industry's comments generally support the rulemaking but indicate a preference for continuing the revised examination process on a voluntary basis. The remaining comments generally opposed the rulemaking for a variety of reasons related to vulnerabilities of the revised process such as examination integrity, quality and consistency. Seven of the public comment letters also suggested changes to the implementation guidance in interim Revision 8 of NUREG-1021. The staff has received additional feedback from the industry regarding these issues since the public comment period closed on October 21, 1997. The most significant issues involve the restrictions on facility personnel who can

participate in the examination development and the guidance regarding level of examination difficulty.

The following table gives the non-power reactor initial operator licensing examination results over a period of 5 years from FY 93 through FY 97. During FY 97, the staff administered approximately 19 site-specific initial licensing examinations to RO and SRO applicants at non-power reactor facilities 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 Fiscal Year				
		1993	1994	1995	1996	1997
RO	Written	71	79	73	74	70
	Operating	86	79	90	97	93
SRO	Written	89	88	76	75	100
	Operating	92	97	98	96	95

These results show that non-power reactor facility operator training programs generally produce applicants who pass the NRC's licensing examinations at a lower percentage rate on the written examination and a higher percentage rate on the operating test. These results are consistent with those of previous years.

Operator Licensing Program Improvements

The NRC is continuing its efforts to improve the operator licensing program. During FY 97 and FY 98 to date, the staff took the following initiatives to enhance the operator licensing process:

1. The staff conducted its "Annual Operator Licensing Examiners Training Conference," which provided an opportunity for NRC examiners to receive training and policy direction from senior managers, discuss pertinent topics, and provide feedback to the Office of Nuclear Reactor Regulation (NRR). The conference is an effective tool for promoting consistency in the operator licensing program.
2. The staff issued and implemented Interim Revision 8 of NUREG-1021, which was revised to include the new examination criteria and lessons learned during the pilot examination program.
3. The staff participated in NRC regional and industry-sponsored workshops for facility licensees planning to develop initial operator licensing examinations.
4. With the Commission's approval, the staff issued a proposed rule that will require facility licensees to participate in the development and administration of operator licensing examinations. The staff received comments on the proposed rule and is considering their merit. This initiative significantly increased the level of participation by licensees and allowed the NRC to significantly reduce the use of contractors to support regional operator licensing activities.

CONCLUSION:

The staff is evaluating a number of issues related to the effectiveness and efficiency of the revised initial examination development process and will address them in the final rulemaking submittal to the Commission in FY 98. As indicated above, the NRC's licensing examinations are providing 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. The NRC's licensed operator requalification inspection program is effectively ensuring that those individuals who are licensed to operate or supervise the reactor controls are maintaining the required level of competence to safely perform their licensed duties.

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Attachment: Status Report on the NRC Requalification Program - Fiscal Year 1997

STATUS REPORT ON THE NRC REQUALIFICATION PROGRAM FISCAL YEAR 1997

Facility Evaluated	Inspection Procedure Performed	Program SAT*/UNSAT	Date
Hatch	IP-71001 - Requal Program Inspection	SAT	10-96

Catawba	IP-71001 - Requal Program Inspection	SAT	10-96
Crystal River	IP-71001 - Requal Program Inspection	SAT	10-96
Perry	IP-71001 - Requal Program Inspection	SAT	10-96
Hope Creek	IP-71001 - Requal Program Inspection	SAT	11-96
Millstone 2	IP-71001 - Requal Program Inspection	SAT	11-96
Watts Bar	IP-71001 - Requal Program Inspection	SAT	11-96
Byron	IP-71001 - Requal Program Inspection	SAT	11-96
Davis-Besse	IP-71001 - Requal Program Inspection	SAT	11-96
Fermi	IP-71001 - Requal Program Inspection	SAT	11-96
Fort Calhoun	IP-71001 - Requal Program Inspection	SAT	11-96
Indian Point 2	IP-71001 - Requal Program Inspection	SAT	12-96
St. Lucie	IP-71001 - Requal Program Inspection	SAT	12-96
Duane Arnold	IP-71001 - Requal Program Inspection	SAT	12-96
Cooper	IP-71001 - Requal Program Inspection	SAT	12-96
WNP 2	IP-71001 - Requal Program Inspection	SAT	12-96
Harris	IP-71001 - Requal Program Inspection	SAT	1-97
Turkey Point	IP-71001 - Requal Program Inspection	SAT	1-97
Palo Verde	IP-71001 - Requal Program Inspection	SAT	1-97
Robinson	IP-71001 - Requal Program Inspection	SAT	2-97
DC Cook	IP-71001 - Requal Program Inspection	SAT	3-97
Monticello	IP-71001 - Requal Program Inspection	SAT	3-97
Diablo Canyon	IP-71001 - Requal Program Inspection	SAT	4-97
Comanche Peak	IP-71001 - Requal Program Inspection	SAT	4-97
Nine Mile	1IP-71001 - Requal Program Inspection	SAT	5-97
Summer	IP-71001 - Requal Program Inspection	SAT	5-97
Callaway	IP-71001 - Requal Program Inspection	SAT	5-97
Oyster Creek	IP-71001 - Requal Program Inspection	SAT	6-97
Oconee	IP-71001 - Requal Program Inspection	SAT	6-97
Beaver Valley 2	IP-71001 - Requal Program Inspection	SAT	7-97
Vogtle	IP-71001 - Requal Program Inspection	SAT	7-97
Arkansas	IP-71001 - Requal Program Inspection	SAT	7-97
Sequoyah	IP-71001 - Requal Program Inspection	SAT	8-97
Braidwood	IP-71001 - Requal Program Inspection	SAT	8-97
South Texas	IP-71001 - Requal Program Inspection	SAT	8-97
Wolf Creek	IP-71001 - Requal Program Inspection	SAT	8-97
Surry	IP-71001 - Requal Program Inspection	SAT	9-97
Point Beach	IP-71001 - Requal Program Inspection	SAT	9-97
San Onofre 2/3	IP-71001 - Requal Program Inspection	SAT	9-97

Grand Gulf	IP-71001 - Requal Program Inspection	SAT	9-97
Waterford 3	IP-71001 - Requal Program Inspection	SAT	9-97

* A program rating of SAT (satisfactory) indicates that the licensee's requalification program complied with the requirements of 10 CFR 55.53 and 55.59 for the areas inspected and that the NRC staff did not elect to conduct NRC-administered requalification examinations for cause as a result of any weaknesses that may have been noted.