

POLICY ISSUE INFORMATION

March 9, 2001

SECY-01-0038

FOR: The Commissioners

FROM: William D. Travers
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:

The staff has submitted periodic reports since August 1989 on the status of the NRC's licensed operator requalification program oversight activities. These reports also contained results of initial RO and SRO licensing examinations. The most recent of these reports was SECY-00-0059 (dated March 6, 2000).

DISCUSSION:

NRC Requalification Program and Inspection Summary for Fiscal Year 2000

During fiscal year (FY) 2000, the staff continued to monitor facility licensees' licensed operator requalification training and examination programs. The staff inspected the licensed operator requalification programs at 41 power reactor facilities during FY 2000. 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;

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(2) determine licensee effectiveness in evaluating and revising requalification programs for licensed operators based on operational performance, including requalification examinations; (3) determine licensee effectiveness in ensuring that licensed individuals satisfy the conditions of their licenses as specified in 10 CFR 55.53; and (4) provide regional management with the information it needs to assess the performance of licensees' operator requalification programs and to determine the need for additional inspections or NRC-conducted examinations. The programs were evaluated using the process described in either NRC Inspection Procedure (IP) 71001, "Licensed Operator Requalification Program Evaluation," or its replacement procedure IP 71111.11. IP 71111.11 comports with the revised reactor oversight program (ROP). Use of IP 71111.11 on a national basis began in April 2000 coincident with implementation of the ROP. Since the last annual status report, the number of requalification program inspections conducted using the revised inspection guidance of IP 71111.11 increased substantially. IP 71111.11 is currently being revised to incorporate the newly developed operator requalification significance determination process (OR SDP). By means of a logic flow chart and matrix, the OR SDP provides guidelines for determining the risk importance of issues identified during inspections of licensed operator requalification programs.

The staff conducts the requalification program inspection at each facility at least every 24 months which is consistent with each licensee's requalification examination cycle. The staff may, as needed, conduct "for cause" requalification examinations when it loses confidence in a licensee's ability to conduct its own examinations or when it believes that the inspection process will not produce the necessary insights into the quality of the licensee's program. During FY 2000, the staff did not conduct any requalification examinations. Upon incorporation of the OR SDP into IP 71111.11, results of the SDP will be a primary consideration in future "for cause" decisions.

Inspections of licensed operator requalification programs continue to identify site-specific strengths and weaknesses. The staff believes that the performance level of licensed operator requalification training programs, as a whole, at the power reactor facilities inspected is being sustained. Licensees have continued to demonstrate their ability to develop and administer licensed operator requalification examinations. Licensee evaluations continued to satisfactorily identify licensed operator performance deficiencies. Facility licensees constructively use feedback from training for improving licensed operator requalification training and involve plant and operations managers in the observation and evaluation of examinations. Resident inspector quarterly reviews of licensed operator requalification training and examinations did not reveal any areas of concern that were not being addressed by licensees in their corrective action programs. Licensees continue to be challenged by the following issues: requalification written examination quality, use of repetitive test items, and validation of job performance measures (JPM).

The attachment contains the individual results of the requalification program inspections at each facility inspected during FY 2000. A SAT (satisfactory) rating for a requalification program inspection indicates that the licensee's requalification program exhibited no major program failures adverse to safety. The following table summarizes the results of requalification program inspections.

Requalification Program (Examination and/or Inspection) Results for Fiscal Year 2000			
Element	Number Evaluated	SAT/UNSAT	Percent SAT
NRC Program Examinations (NUREG-1021)	None	N/A	N/A
NRC Program Inspections (IP-71001)	23	23/0	100
NRC Program Inspections (IP-7111.11)	18	18/0	100
Total	41	41/0	100

The next table depicts the continuing success of licensees in the conduct of their requalification programs as evidenced by no major program failures since FY 1993.

NRC Requalification Program Evaluation Results for Fiscal Years 1993 through 2000								
Element	1993	1994	1995	1996	1997	1998	1999	2000
Number of Requalification Programs Evaluated	43	43	58	41	41	32	40	41
Number of Satisfactory/Number of Unsatisfactory	43/0	43/0	58/0	41/0	41/0	32/0	40/0	41/0
Percent Satisfactory	100	100	100	100	100	100	100	100

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 results of the power reactor initial operator licensing examinations over a period of 4 years from FY 1997 through FY 2000. During FY 2000, the staff administered approximately 47 site-specific initial licensing examinations to RO and SRO applicants at power reactor facilities. This number includes 37 (79% of the total) site-specific licensing examinations that were prepared, in whole or in part, by facility licensees in accordance with the NRC's examination guidance. The table separates NRC-prepared and facility-prepared examination results. In addition, the staff administered 392 generic fundamentals examinations during FY 2000 to prospective license applicants at power reactor facilities.

Power Reactor Initial Examination Results									
Examination		Percentage of Applicants Who Passed During the Fiscal Year							
		1997		1998		1999		2000	
		NRC Prepared	Facility Prepared	NRC Prepared	Facility Prepared	NRC Prepared	Facility Prepared	NRC Prepared	Facility Prepared
RO	Written	96	89	N/A	89	100	89	98	95
	Operating	93	94	N/A	99	100	93	100	98
SRO	Written	91	93	100	96	100	94	100	95
	Operating	84	92	94	96	100	98	96	99

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, irrespective of whether the examinations were prepared by the NRC or by the licensees (with prior NRC review and approval). During FY 2000, approximately 352 applicants were administered an initial examination. NRC prepared examinations were administered to 29% (compared to 8% in FY1999) of the applicants and the facility prepared examinations were administered to 71% (compared to 92% in FY1999) of the applicants. The NRC regional examiners ensure that initial licensing examinations are consistent with NRC expectations as provided in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." Experience to date with examinations prepared by licensees indicates that, while the quality of examinations is improving, consistency is a problem due, in part, to turnover of experienced examination developers. Some facility licensees do not prepare examinations and thus have little or no experience. In Region II, approximately half of the facility licensees currently prefer to have the NRC prepare their licensing examinations. This may necessitate the increased sharing of examiner resources among the regional offices and emphasizes the need for license examiners to maintain their proficiency. The staff continues to seek ways to improve the initial licensing examination process and reduce unnecessary burden associated with the examinations without jeopardizing the integrity of examinations.

The following table indicates the total number of applicants who requested NRC review of their examination results including the review outcomes from FY 1995 through FY 2000. During FY 2000, the staff noted a decrease in the percentage of proposed applicant denials being overturned by the review process. The overturned denials were attributed to new information provided by the applicant or psychometric test item deficiencies not identified during the examination review and validation process. The staff believes that regional and national public workshops over the past two years with examiners and the industry regarding the NUREG-1021 examination development process, coupled with semiannual staff public meetings with the industry's focus group on initial operator licensing issues, have brought attention to concerns with the process and thereby fostered resolution through changes to NUREG-1021 and generation of responses to frequently asked questions. The staff believes that these efforts as well as NRC examiner reviews of facility-prepared examinations have contributed to the decrease in the number of overturned denials. In FY 2001 to date the staff has received only three applicant-requested reviews.

Power Reactor Initial Examination Denial Results						
Description	1995	1996	1997	1998	1999	2000
Number of Proposed Applicant Denials	30	47	44	41	60	19
Number of Applicant Requested Reviews	4	12	13	20	16	9
Number of Final Denials	30	44	35	28	47	16*
Number of Licenses Issued Upon Review	0	3	9	13	13	2

* One applicant review is in formal hearing status.

The following table gives the results of the non-power reactor initial operator licensing examinations over a period of 5 years from FY 1996 through FY 2000. During FY 2000, the staff administered approximately 20 (compared to 17 in FY 1999) 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 the Fiscal Year				
		1996	1997	1998	1999	2000
RO	Written	74	70	87	63	78
	Operating	97	93	100	96	89
SRO	Written	75	100	94	100	82
	Operating	96	95	100	100	100

These results indicate that training programs for non-power reactor facility operators 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, except for the reactor operator (RO) applicants' performance on written examinations administered in FY 1999. The decreased level of performance exhibited by the reactor operators in FY 1999 is more in line with lower performance levels of previous years in that the reactor operators historically achieve lower scores than senior reactor operators. The staff believes that factors such as the under estimation of the level of commitment and the level of knowledge required by the applicants (with competing academic issues) to successfully pass the NRC examination may have contributed to the lower performance.

Operator Licensing Program Initiatives

During FYs 2000 and 2001 to date, the NRC continued its efforts to improve and support the oversight of the operator licensing program and respond to stakeholder concerns. Examples of the staff's initiatives include the following:

- (1) Modified the licensed operator requalification program inspection procedure to comport with the ROP. The procedure is currently being revised to incorporate the OR SDP to determine the risk importance of inspection findings. The OR SDP addresses issues that are identified during a licensed operator requalification program inspection or by a resident inspector's observation of requalification activities. The OR SDP assesses the risk associated with the programmatic aspects of exam quality, security and grading, and the performance of licensed operators on the biennial written examinations and annual operating tests. The OR SDP has been discussed during four public meetings with stakeholders, and has been issued as Appendix I to NRC Inspection Manual Chapter 0609.
- (2) Maintained the "Operator Licensing Program," home page (www.nrc.gov/NRC/REACTOR/OL/OLhome.html) on the NRC's external (public) web server to provide information concerning the regulations, guidance documents, and Commission papers associated with the operator licensing program. Additionally it provides responses to frequently asked questions. Over the past two years this website has enhanced communication with stakeholders and the public regarding the NRC's reactor operator licensing program.
- (3) Observed the activities of an INPO Plant Evaluation/Accreditation Team visit at Sequoyah and observed eight of the eleven monthly National Nuclear Accrediting Board (NNAB) meetings. The NRC observes accreditation team visits and NNAB meetings, as a means of monitoring the accreditation process.
- (4) Participated in a two-day national workshop sponsored by the Nuclear Energy Institute (NEI) in February 2000 to focus on the broad-based implementation issues associated with licensee-prepared license examinations. Also, attended several meetings with industry training groups, such as the Middle Atlantic Nuclear Training Group (MANTG), to promote a better understanding of the details of the examination development process including key changes affecting development of written examinations.
- (5) Proceeded with rule-making that would revise the requirements in 10 CFR 55.31(a)(5) and 10 CFR 55.45(b) for control manipulations, licensee certification of simulators, and simulator testing. The proposed final rule was published in the Federal Register on July 3, 2000, and the public comment period ended on September 18, 2000. The final rule would allow applicants for operator and senior operator licenses to fulfill a portion of their required experience prerequisites by manipulating a plant-referenced simulator as an alternative to use of the actual plant.
- (6) Developed and implemented the following measures to reduce unnecessary licensee burden associated with the initial operator licensing process: (1) added a third generic fundamentals examination for each fiscal year beginning in October 2000 to provide enhanced flexibility to licensees in scheduling training programs; (2) extended the public comment and trial use period on a pilot change to the Examination Standards, NUREG-1021, that eliminated burdensome question usage restrictions for facility licensee developed examinations; and, (3) coordinated with and assisted the Institute of Nuclear

Power Operations in the development of a national examination question bank by providing questions from all past and current NRC examinations administered since October 1995. The national examination bank was made available for licensee and NRC use in July 2000.

- (7) Initiated plans for placing the Generic Fundamentals Examination Section (GFES) examination bank on the operator licensing home page to include the entire GFE test bank consisting of validated items and past examinations (effective 2001 and beyond). Users of the website will be able to view and download publicly available GFE test files for training and testing purposes.
- (8) Continued a program to independently audit and assess the consistency and level of difficulty of licensing examinations. Also, revised the examination standards to require regional management to discuss the quality of proposed examination products with licensee management prior to administration.

CONCLUSION:

The NRC's licensed operator requalification inspection program has provided an effective means for monitoring the quality of facility licensed operator requalification training and examinations. The program indicates that the quality of these training programs at the facilities inspected is being maintained at a sufficient level to assure operator competence in safely performing licensed duties. Additionally, over the past year, significant steps have been taken to reduce unnecessary regulatory burden associated with the initial operator licensing examination process while maintaining the integrity of that process.

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Attachment: Status Report on the NRC Requalification
Program - Fiscal Year 2000

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ACCESSION #ML010540333

*See Previous Consurrence

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STATUS REPORT ON THE NRC REQUALIFICATION PROGRAM
FISCAL YEAR 2000

Facility Evaluated	Inspection Procedure Performed	Program SAT*/UNSAT	Date
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GINNA	IP-71001 - Requal Program Inspection	SAT	10-99
PILGRIM	IP-71001 - Requal Program Inspection	SAT	10-99
LIMERICK	IP-71001 - Requal Program Inspection	SAT	10-99
CALVERT CLIFFS	IP-71001 - Requal Program Inspection	SAT	10-99
NINE MILE POINT	IP-71001 - Requal Program Inspection	SAT	10-99
LASALLE	IP-71001 - Requal Program Inspection	SAT	10-99
BRAIDWOOD	IP-71001 - Requal Program Inspection	SAT	10-00
QUAD CITIES	IP-71111.11 - Requal Program Inspection	SAT	10-00
WOLF CREEK	IP-71001 - Requal Program Inspection	SAT	10-99
SEABROOK	IP-71001 - Requal Program Inspection	SAT	11-99
BEAVER VALLEY	IP-71001 - Requal Program Inspection	SAT	11-99
CRYSTAL RIVER	IP-71001 - Requal Program Inspection	SAT	11-99
SEQUOYAH	IP-71111.11 - Requal Program Inspection	SAT	11-99
CLINTON	IP-71001 - Requal Program Inspection	SAT	11-99
PRAIRIE ISLAND	IP-71111.11 - Requal Program Inspection	SAT	11-99
FERMI	IP-71001 - Requal Program Inspection	SAT	11-99
BROWNS FERRY	IP-71001 - Requal Program Inspection	SAT	12-99
ST. LUCIE	IP-71001 - Requal Program Inspection	SAT	12-99
SAN ONOFRE	IP-71001 - Requal Program Inspection	SAT	12-99
THREE MILE ISLAND	IP-71001 - Requal Program Inspection	SAT	1-00
TURKEY POINT	IP-71001 - Requal Program Inspection	SAT	1-00
QUAD CITIES	IP-71111.11 - Requal Program Inspection	SAT	1-00

*See footnote at end of table.

ATTACHMENT

Susquehanna	IP-71001 - Requal Program Inspection	SAT	2-00
North Anna	IP-71001 - Requal Program Inspection	SAT	2-00
Cook	IP-71001 - Requal Program Inspection	SAT	2-00
Indian Point 3	IP-71001 - Requal Program Inspection	SAT	3-00
Peach Bottom	IP-71001 - Requal Program Inspection	SAT	3-00
Fitzpatrick	IP-71111.11 - Requal Program Inspection	SAT	4-00
Kewaunee	IP-71111.11 - Requal Program Inspection	SAT	4-00
Limerick	IP-71111.11 - Requal Program Inspection	SAT	5-00
Peach Bottom	IP-71111.11 - Requal Program Inspection	SAT	5-00
Palisades	IP-71111.11 - Requal Program Inspection	SAT	5-00
McGuire	IP-71111.11 - Requal Program Inspection	SAT	6-00
Watts Bar	IP-71111.11 - Requal Program Inspection	SAT	7-00
Hatch	IP-71111.11 - Requal Program Inspection	SAT	7-00
Catawba	IP-71111.11 - Requal Program Inspection	SAT	8-00
Farley	IP-71111.11 - Requal Program Inspection	SAT	8-00
Byron	IP-71111.11 - Requal Program Inspection	SAT	8-00
Kawaunee	IP-71111.11 - Requal Program Inspection	SAT	8-00
Palo Verde	IP-71111.11 - Requal Program Inspection	SAT	8-00
Vermont Yankee	IP-71111.11 - Requal Program Inspection	SAT	9-00

* 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.