



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

MAR 018 1994

"AE39-2"

MEMORANDUM FOR: Donald H. Lanham
Nuclear Document System (NUDOCS), Mail Stop P1-37
Office of Information Resource Management

FROM: Anthony J. DiPalo
Regulation Development Branch
Division of Regulatory Applications
Office of Nuclear Regulatory Research

SUBJECT: REGULATORY HISTORY INDEX FOR 10 CFR 55. - FINAL RULE,
"RENEWAL OF LICENSES AND REQUALIFICATION REQUIREMENTS FOR
LICENSED OPERATORS" (10 CFR PART 55)

Enclosed for your processing are the regulatory documents comprising the regulatory history of the Notice of Final Rulemaking entitled "RENEWAL OF LICENSES AND REQUALIFICATION REQUIREMENTS FOR LICENSED OPERATORS," which amends 10 CFR Part 55. This notice was published in the Federal Register on February 9, 1994 (59 FR 5934).

If you have any questions, please call me at 492-3784.

Anthony J. DiPalo
Anthony J. DiPalo
Regulation Development Branch
Division of Regulatory Applications
Office of Nuclear Regulatory Research

Enclosures:
1. Fed Reg Cit.
2. Index
3. Documents

cc (w/encl.1):
M. Lesar, ADM

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Enclosure 1

Federal Register Citation

Accordingly, the program fees are being increased as set forth below.

Program Changes Adopted in the Final Rule

This document makes the following changes in the regulations implementing the dairy inspection and grading program:

1. Increases the hourly fee for nonresident services from \$44.60 to \$47.20 for services performed between 6 a.m. and 6 p.m. and from \$49.00 to \$52.00 for services performed between 6 p.m. and 6 a.m.

The nonresident hourly rate is charged to users who request an inspector or grader for particular dates and amounts of time to perform specific grading and inspection activities. These users of nonresident services are charged for the amount of time required to perform the task and undertake related travel, plus travel costs.

2. Increases the hourly fee for continuous resident services from \$39.60 to \$42.20.

The resident hourly rate is charged to those who are using grading and inspection services performed by an inspector or grader assigned to a plant on a continuous, year-round, resident basis.

List of Subjects in 7 CFR Part 58

Diary products, Food grades and standards, Food Labeling, Reporting and recordkeeping requirements.

For the reasons set forth in the preamble, 7 CFR part 58 is amended as follows:

PART 58—[AMENDED]

Subpart A—Regulations Governing the Inspection and Grading Services of Manufactured or Processed Dairy Products

1. The authority citation for part 58 is revised to read as follows:

Authority: 7 U.S.C. 1621-1627, unless otherwise noted.

2. Section 58.43 is revised to read as follows:

§ 58.43 Fees for inspection, grading, and sampling.

Except as otherwise provided in § 58.43 and §§ 58.38 through 58.46, charges shall be made for inspection, grading, and sampling service at the hourly rate of \$47.20 for service performed between 6 a.m. and 6 p.m., and \$52.00 for service performed between 6 p.m. and 6 a.m., for the time required to perform the service calculated to the nearest 15-minute period including the time required for

preparation of certificates and reports and the travel time of the inspector and grader in connection with the performance of the service. A minimum charge of one-half hour shall be made for service pursuant to each request or certificate issued.

3. Section 58.45 is revised to read as follows:

§ 58.45 Fees for continuous resident service.

Irrespective of the fees and charges provided in §§ 58.39 and 58.43, charges for the inspector(s) and grader(s) assigned to a continuous resident program shall be made at the rate of \$42.20 per hour for services performed during the assigned tour of duty. Charges for service performed in excess of the assigned tour of duty shall be made at a rate of 1½ times the rate stated in this section.

Dated: February 2, 1994.

Lon Hatamiya,
Administrator.

[FR Doc. 94-2961 Filed 2-8-94; 8:45 am]
BILLING CODE 3410-02-P

NUCLEAR REGULATORY COMMISSION

10 CFR Part 55

RIN 3150-AE39

**Renewal of Licenses and
Requalification Requirements for
Licensed Operators**

AGENCY: Nuclear Regulatory
Commission.

ACTION: Final rule.

SUMMARY: The Nuclear Regulatory Commission (NRC) is amending its regulations to delete the requirement that each licensed operator at power, test, and research reactors pass a comprehensive requalification written examination and an operating test conducted by the NRC during the term of the operator's 6-year license as a prerequisite for license renewal. The final rule requires that facility licensees shall have a requalification program reviewed and approved by the Commission and shall, upon request consistent with the needs of the Commission's inspection program, submit to the Commission a copy of its annual operating tests or comprehensive written examinations used for operator requalification for review by the Commission. In addition, the final rule amends the "Scope" provisions of the regulations pertaining to operators' licenses to include facility licensees.

The amendments will improve operational safety at each facility by redirecting NRC resources to administer the requalification program by inspecting and overseeing facility requalification programs rather than conducting requalification examinations. This, in turn, will reduce both licensee and NRC costs related to the program.

EFFECTIVE DATE: March 11, 1994.

FOR FURTHER INFORMATION CONTACT:
Anthony DiPalo, Office of Nuclear
Regulatory Research, telephone: (301)
492-3784, or Frank Collins, Office of
Nuclear Reactor Regulation, U.S.
Nuclear Regulatory Commission,
Washington, DC 20555, telephone (301)
504-3173.

SUPPLEMENTARY INFORMATION:

Background

Section 306 of the Nuclear Waste Policy Act (NWPA) of 1982 authorized and directed the NRC "to promulgate regulations, or other appropriate Commission regulatory guidance, for the training and qualifications of civilian nuclear power plant operators, supervisors, technicians and other appropriate operating personnel." The regulations or guidance were to "establish simulator training requirements for applicants for civilian nuclear power plant operator licenses and for operator requalification programs; requirements governing NRC administration of requalification examinations; requirements for operating tests at civilian nuclear power plant simulators, and instructional requirements for civilian nuclear power plant licensee personnel training programs." On March 25, 1987 (52 FR 9453), the Commission accomplished the objectives of the NWPA that were related to licensed operators by publishing a final rule in the Federal Register that amended 10 CFR part 55 and became effective May 26, 1987. The amendment revised the licensed operator requalification program by establishing (1) simulator training requirements, (2) requirements for operating tests at simulators, and (3) instructional requirements for the program (formerly appendix A to 10 CFR part 55). The final rule also stipulated that in lieu of the Commission accepting certification by the facility licensee that the licensee has passed written examinations and operating tests given by the facility licensee within its Commission approved program developed by using a systems approach to training (SAT), the Commission may give a comprehensive requalification written examination and

an annual operating test. In addition, the amended regulations required each licensed operator to pass a comprehensive requalification written examination and an operating test conducted by the NRC during the term of the operator's 6-year license as a prerequisite for license renewal.

Following the 1987 amendment to part 55, the NRC began conducting operator requalification examinations for the purpose of license renewal. As a result of conducting these examinations, the NRC determined that the existing regulations have established a high standard of licensee performance and that the NRC examiners were largely duplicating tasks that were already required of, and routinely performed by, the facility licensees.

The NRC revised its requalification examination procedures in 1988 to focus on performance-based evaluation criteria that closely paralleled the training and evaluation process used for a SAT based training program. This revision to the NRC requalification examination process enabled the NRC to conduct comprehensive examinations for the purpose of renewing an individual's license and, at the same time, use the results of the examinations to determine the adequacy of the facility licensee's requalification training program.

Since the NRC began conducting its requalification examination program, the facility program and individual pass rates have improved from 81 to 90 percent and from 83 to 91 percent, respectively, through fiscal year 1991. The NRC has also observed a general improvement in the quality of the facility licensees' testing materials and in the performance of their operating test evaluators. Of the first 79 program evaluations conducted, 10 programs were evaluated as unsatisfactory. The NRC issued Information Notice No. 90-54, "Summary of Requalification Program Deficiencies," dated August 28, 1990, to describe the technical deficiencies that contributed to the first 10 program failures. Since that time only 6 programs, of 120 subsequent program evaluations, have been evaluated as unsatisfactory.

Pilot requalification examinations were conducted during the period August through December 1991. The pilot test procedure directed the NRC examiners to focus on the evaluation of crews, rather than individuals, in the simulator portion of the operating test. In conducting the pilot examinations, the NRC examiners and the facility evaluators independently evaluated the crews and compared their results. The results were found to be in agreement.

Furthermore, the NRC examiners noted that the facility evaluators were competent at evaluating crews and individuals and were aggressive in finding deficiencies and recommending remedial training for operators who exhibited weaknesses. The performance of the facilities' evaluators during the pilot examinations further confirmed that the facility licensees can find deficiencies, provide remedial training, and retest their licensed operators appropriately.

In June 1992, the Commission agreed with the staff to proceed with initiation of rulemaking to eliminate the requirement for each licensed operator to pass a comprehensive requalification written examination and operating test administered by the Commission during the term of the operator's 6-year license. On December 28, 1992, proposed amendments to 10 CFR part 55 on renewal of licensees and requalification requirements for licensed operators were submitted to the Commission for approval.

On May 20, 1993 (58 FR 29366), the Commission published a proposed rule in the Federal Register to amend 10 CFR part 55. The proposed amendments were to:

1. Delete the requirement that each licensed operator pass an NRC-administered requalification examination during the term of his or her license.

2. Require that facility licensees submit to the NRC their annual requalification operating tests and comprehensive requalification written examinations at least 30 days prior to the conduct of these tests and examinations.

3. Include "Facility Licensees" in the "Scope" of part 55.

The period for public comment on the proposed amendments ended on July 20, 1993.

Summary of Public Comments

The NRC received 42 comments on the proposed rule. Based on analysis of these comments, several changes have been made in the final rule. A summary of the public comments and, where appropriate, a description of the changes that resulted from them is discussed for each of the proposed amendments to 10 CFR part 55.

1. *Proposed Amendment:* Delete the requirement that each licensed operator pass an NRC-administered requalification examination during the term of a licensed operator's 6-year license.

General Statement: Of the 42 comments received, 38 favored this proposed amendment and 8 opposed its

adoption. Most of the respondents who favored the proposed change based their support on the expectation that this change would reduce the regulatory burden on licensees and would improve operational safety at nuclear facilities. One respondent indicated that while the NRC's involvement has had a positive impact on the content and conduct of licensee requalification, utilities have proven their ability to develop and administer requalification examinations that meet the requirements of 10 CFR 55.59(a)(2)(iii). Another respondent representing the utility industry stated that, "We believe the performance-based inspection process will be an effective means for ensuring high quality operator requalification programs." This respondent further stated, "The proposed rule change will also afford better operating crew continuity. Because personnel changes occur over time, operating crews may be configured with individuals who have or have not had an NRC administered exam. In the past, it has been a common practice to reconfigure crews to accommodate the NRC-administered requalification examination by putting together individuals whose 6 years is about to end. Use of this practice to facilitate the conduct of requalification exams may not be in the best interest of crew coordination and teamwork."

The six comments in opposition to the proposed amendment to delete the NRC-conducted requalification examination varied in content. For example, two public citizen respondents were against a rule change of any kind on the basis it would give the public the perception that the NRC's authority over the operation of power and non-power reactor plants would be weakened. Two respondents, one representing a State public service department with oversight of a nuclear power plant and a second representing a State nuclear safety department, urged that from a defense-in-depth standpoint to reactor safety the proposed rule should be reconsidered. The State of Vermont, in two separate comments, indicated that it was because of the current regulation that the NRC was able to detect the unsatisfactory requalification program at Vermont Yankee and identify corrective actions to ensure safety of the plant. The State of Illinois contended that the current regulations provided incentive for licensees to maintain quality operator training programs and that the likelihood of further improving or even maintaining that quality without the periodic independent involvement by the NRC is unlikely. The State of Illinois recommended a combination of routine

NRC inspections of crew examinations on a plant simulator and a periodic independent test administered simultaneously to all licensed operators every 6 years. Finally, one respondent was opposed to this amendment, especially its application to test and research reactors and suggested the existing rule be deleted because the regulatory analysis for the 1987 rule stated that the rule would not apply to non-power reactors (NPR). This same respondent believed it important to maintain NRC staff competence in relation to NPR operator licensing and felt this could be accomplished by maintaining a nucleus of specialized qualified personnel, either as part of or in conjunction with the NPR directorate, and through specialized training and administration of initial examinations, which occur rather frequently.

Response: After reviewing the six comments opposing the proposed regulation, the Commission has concluded that the basis for this requirement remains sound and that it should be adopted. This determination is based on the following considerations:

(i) The NRC believes that since the beginning of the requalification program, experience indicates that weaknesses in implementation of facility licensee's programs are generally the root cause of deficiencies in the performance of operators.

(ii) The NRC believes if its resources were directed towards inspection and oversight of facility licensee's requalification programs rather than continuing to conduct individual operator requalification examinations, the operational safety at each facility will continue to be ensured and in fact, will be improved. A routine inspection frequency of once per SALP cycle will ensure consistency between inspection scheduling and licensee performance. A minimum routine inspection frequency of at least once every 2 years will ensure active NRC oversight of facility licensee's requalification programs. For facility licensees with good performance, consideration will be given to not performing an onsite inspection during the SALP period.

(iii) The NRC believes that the facility requalification programs have been demonstrated to be basically sound during the pilot examinations. Given the broad range of possible approaches built into the inspection process, the NRC would only conduct examinations when they are the most effective tool to evaluate and understand the programmatic issues, or if the NRC loses confidence in the facility licensee's ability to conduct its own examinations.

Examples which could result in a regional management decision for a "for cause" requalification examination include:

- a. Requalification inspection results which indicate an ineffective licensee requalification program;
- b. Operational problems for which operator error is a major contributor;
- c. A SALP Category 3 rating in plant operations attributed to operator performance; and
- d. Allegations regarding significant training program deficiencies.

When conditions such as these exist, the NRC may initiate planning to conduct requalification examinations during the next annual examination cycle scheduled by the facility.

Regarding the comments from the State of Vermont, the proposed inspection program includes reviews, observations, and parallel grading of selected operating tests and written examinations by NRC examiners, reviews of operational performance, interviews of facility personnel, and a general inspection of the facility licensee's implementation of its requalification training program. Application of the inspection program in the case of Vermont Yankee would have disclosed discrepancies in evaluation of operator performance and also would have allowed insight to other, more programmatic, deficiencies. The requalification inspection program implements routine NRC inspections as recommended by the State of Illinois as well as "for cause" examinations.

The Commission believes the existing regulation should not be deleted in the case of non-power reactors, as recommended in the public comments. A continuing need exists for the regulation to apply to operators of all types of reactors. The proposed amendment will continue to ensure operational safety at non-power reactors by inspecting facility requalification programs rather than conducting requalification examinations. The NRC will maintain examiner proficiency by conducting examinations for initial license applicants.

2. *Proposed Amendment:* Require that facility licensees submit to the NRC their annual requalification operating tests and comprehensive requalification written examinations at least 30 days prior to conducting these tests and examinations.

General Statement: Of the 42 comments received, only 1 respondent favored the amendment as proposed. This response came from a university operated research reactor, stating that submitting requalification examinations by the facility to the NRC for review

prior to administering the examination was less burdensome, by comparison, than retaining the existing regulation. On the other hand, most respondents stated that submitting all examinations and tests to the NRC 30 days before their administration would place an undue burden on facility licensees and the NRC with little return on the investment. Several respondents offered alternatives that included shortening the lead time, requiring that the examinations and tests be submitted after they are administered, submitting the question banks from which the examinations are developed, and simply having the examinations available for on-site inspection.

Response: This requirement was included in the proposed regulation so that the NRC could evaluate the proposed examination materials, in conjunction with other information already available to the NRC, to determine the scope of the on-site inspection. However, the pilot inspection program has demonstrated that a facility's proposed examinations are not an absolute necessity in preparing for the on-site activities. In addition, those facility licensees' examination and simulator scenario banks that were evaluated were found to be adequate for an effective requalification program to be managed by the licensees' staffs. Although being able to review the proposed examinations at the NRC did save some on-site inspection effort, the inspectors were still able to complete the Temporary Inspection procedures within the time allowed (i.e., two inspectors on-site for 1 week).

The NRC believes that it will be advantageous to have selected examinations available for review at NRC offices in addition to other documentation customarily provided, consistent with the Commission's inspection program needs. During the on-site inspection, the inspectors will observe the facility evaluators administer written examinations and operating tests to the crews being evaluated. Although the facility examination may last several weeks, the NRC's on-site inspection usually lasts only one week. Normally, the NRC intends to request that the facility licensee submit only those written examinations or operating tests that will be administered during the week of the NRC inspection. Obtaining this examination material in advance of the inspection will allow the inspectors to prepare for their on-site inspection activities by reviewing the examinations or tests before they travel to the facility. This advance preparation will result in

a more effective use of on-site inspection time and reduce the burden on the facility licensee by placing fewer demands on their training staff during the examination week. Therefore, the NRC will delete the amendment to § 55.59(c) as proposed from the final rulemaking and will require instead that comprehensive written examinations or operating tests be submitted upon request consistent with the Commission's inspection program needs and sustained effectiveness of the facility licensee's examination and simulator scenario banks.

3. *Proposed Amendment:* Include facility licensees in the scope of 10 CFR part 55, specifically § 55.2, will be revised to include facility licensees.

General Statement: Only 1 of the 42 respondents to the FRN addressed and endorsed this provision of the proposed rulemaking.

Response: The NRC believes the absence of comments regarding this proposal substantiates the NRC's position that this is simply an administrative correction and does not materially change the intent of the regulation. The NRC considers this amendment as an administrative addition to these regulations. The NRC proposed this change to eliminate the ambiguities between the regulations of parts 50 and 55. Section 50.54 (i) through (m) already imposes part 55 requirements on facility licensees, and part 55 already specifies requirements for facility licensees. On this basis, the NRC has determined that the requirement should be adopted.

Finding of No Significant Environmental Impact: Availability

The Commission has determined that under the National Environmental Policy Act of 1969, as amended, and the Commission's regulations in subpart A of 10 CFR part 51, that this rule is not a major Federal Action significantly affecting the quality of the human environment and therefore, an environmental impact statement is not required.

Paperwork Reduction Act Statement

This final rule amends information collection requirements that are subject to the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 *et seq.*). These requirements were approved by the Office of Management and Budget, approval number 3150-0101.

The rule will relax existing information collection requirements for the separately cleared, "Reactor Operator and Senior Reactor Operator Licensing Training and Requalification Programs." The public burden for this

collection of information is expected to be reduced by 3 hours per licensee. This reduction includes the time required for reviewing instructions, searching existing data sources, gathering and maintaining the data needed and completing and reviewing the collection of information. Send comments regarding the estimated burden reduction or any other aspect of this collection of information, including suggestions for reducing this burden, to the Information and Records Management Branch (MNBB-7714), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-3019, (3150-0101), Office of Management and Budget, Washington, DC 20503.

Regulatory Analysis

The Commission has prepared a regulatory analysis on this regulation. The analysis examines the values (benefits) and impacts (costs) of implementing the regulation for licensed operator requalification. The analysis is available for inspection in the NRC Public Document Room, 2120 L Street, NW, (Lower Level), Washington, DC. Single copies of the analysis may be obtained from Anthony DiPalo, Division of Regulatory Applications, Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission, Washington, DC 20555, telephone (301) 492-3784.

Regulatory Flexibility Certification

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission certifies that this rule will not have a significant economic impact upon a substantial number of small entities. This rule primarily affects the companies that own and operate light-water nuclear power reactors and non-power research reactors. The companies that own and operate these reactors do not fall within the scope of the definition of "small entity" set forth in the Regulatory Flexibility Act or the Small Business Size Standards set out in regulations issued by the Small Business Administration in 13 CFR part 121.

Backfit Analysis

The staff believes that it could ensure and improve operational safety at each facility by directing its resources to inspect and oversee facility requalification programs rather than conducting requalification examinations. The staff's experience since the beginning of the requalification program indicates that weaknesses in the implementation of

the facility programs are generally the root cause of significant deficiencies in the performance of licensed operators. The staff could more effectively allocate its resources to perform on-site inspections of facility requalification examination and training programs in accordance with indicated programmatic performance rather than scheduling examiners in accordance with the number of individuals requiring license renewal. By redirecting the examiner resources, the staff expects to find and correct programmatic weaknesses earlier, and thus improve operational safety.

Currently, facility licensees assist in developing and coordinating the NRC-conducted requalification examinations. The assistance includes providing to the NRC the training material used for development of the written examinations and operating tests and providing facility personnel to work with the NRC during the development and conduct of the examinations. The Commission has concluded on the basis of the analysis required by 10 CFR 50.109, that complying with the requirements of this final rule would reduce the regulatory burden on the facility licensees by reducing the effort expended by the facility licensees to assist the NRC in developing and conducting NRC requalification examinations for licensed operators. A smaller increase in regulatory burden is anticipated due to a need for the facility licensee to provide data and support for periodic requalification program inspections.

As part of the final rule, facility licensees shall have a requalification program reviewed and approved by the Commission and shall, upon request consistent with the Commission's inspection program needs, submit a copy of its comprehensive written examinations or annual operating tests to the Commission. The NRC has determined that the pilot inspection program demonstrated that the facility's proposed examinations are not an absolute necessity in preparing for the on-site activities. Therefore, the NRC would request test submittal on a case-by-case basis consistent with the Commission's test inspection program needs and review these examinations for conformance with 10 CFR 55.59(a)(2)(i&ii). The NRC would continue to expect each facility to meet all of the conditions required of a requalification program in accordance with 10 CFR 55.59(c).

Licensed operators would not have to take any additional actions. Each operator would be expected to continue to meet all the conditions of his or her

license described in 10 CFR 55.53, which includes passing the facility requalification examinations for license renewal. Each licensed operator would be expected to continue to meet the requirements of the facility requalification training program. However, the licensed operator would no longer be required to pass a requalification examination conducted by the NRC during the term of his or her license in addition to passing the facility licensee's requalification examinations, as a condition of license renewal.

The "Scope" of part 55, 10 CFR 55.2, would be revised to include facility licensees. This is an administrative addition to these regulations. It eliminates currently existing ambiguities between the regulations of parts 50 and 55. Part 50, in § 50.54(i) through (m), already imposes part 55 requirements on facility licensees, and part 55 already specifies requirements for facility licensees.

The Commission believes that licensed operators are one of the main components and possibly the most critical component of continued safe reactor operation, especially with respect to mitigating the consequences of emergency conditions. Two-thirds of the requalification programs that have been evaluated as "unsatisfactory" had significant problems in the quality or implementation of the plant's emergency operating procedures (EOPs). In some of these cases, the facility licensees did not train their operators on challenging simulator scenarios or did not retrain their operators after the EOPs were revised. The Commission believes that it could have identified these problems sooner by periodic inspection of facility requalification training and examination programs. Facility licensees could have then corrected these problems and improved overall operator job performance sooner.

This final rule will improve operational safety by providing the staff direction to find and correct weaknesses in facility licensee requalification programs. The experience gained from conducting NRC requalification examinations indicates that the NRC is largely duplicating the efforts of the facility licensees to maintain a high standard of operator performance. The NRC could now, by amending the regulations, more effectively use its resources to oversee facility licensee requalification programs rather than conducting individual operator requalification examinations. In FY92, the NRC resources committed to this program for NRC staff and contractor support were approximately 12 FTE and

\$1.3 million (equivalent to 8 FTE), respectively. The staff projects that a slightly larger average number of examinations, requiring approximately 1.5 additional staff FTE and an additional \$200,000 contractual support (equivalent to 1.25 FTE), would be conducted in future years if the NRC continues conducting requalification examinations for all licensed operators. Thus, if it is assumed that without the rule change, this program would continue into the future, the relevant baseline NRC burden would approximate \$2.85 (1.35 NRC + 1.5 contractor) million per year in 1992 dollars for FY93 through FY97. The 13.5 (12 + 1.5) NRC staff years (FTE) were converted to \$1.35 million (\$100,000 per staff year) based on allowances for composite wage rates and direct benefits.¹

Under the final rule change, NRC's analysis indicates that NRC staff could perform all necessary inspections of requalification exam programs with 11 NRC FTEs and \$300,000 in contractor support, equivalent to 1.85 contractor FTEs, per year. At \$100,000 per NRC FTE and \$182,000 per contractor FTE, this converts to an annual cost in 1992 dollars of \$1.4 million. Thus, the annual savings in NRC operating costs is estimated to be on the order of \$1.45 million (\$2.85 million less \$1.4 million). Over an assumed 25-year remaining life, based on a 5% real discount rate, the 1992 present worth savings in NRC resources is estimated at about \$20.25 million in 1992 dollars.

Each facility licensee would continue in its present manner of conducting its licensed operator requalification program. However, this final rule reduces the burden on the facility licensees because each facility licensee would have its administrative and technical staff expend fewer hours than are now needed to assist in developing and conducting the NRC requalification examinations. Facility licensees are expected to realize a combined annual operational cost savings of approximately \$1.24 million. Over an assumed 25-year remaining life, based

¹ NRC labor costs presented here differ from those developed under the NRC's license fee recovery program. For regulatory analysis purposes, labor costs are developed under strict incremental cost principles wherein only variable costs that are directly related to the development, implementation, and operation and maintenance of the proposed requirement are included. This approach is consistent with guidance set forth in NUREG/CR-3568, "A Handbook for Value Impact Assessment," and general cost benefit methodology. Alternatively, NRC labor costs for fee recovery purposes are appropriately designed for full cost recovery of the services rendered and, as such, include non-incremental costs (e.g. overhead and administrative and logistical support costs).

on a 5% real discount rate, the 1992 present worth industry savings is estimated at about \$17.48 million in 1992 dollars.

In summary, the final rule will result in improved operational safety by providing more timely identification of weaknesses in facility licensees' requalification programs. In addition, the final rule would also reduce the resources expended by both the NRC and the licensees. The Commission has, therefore, concluded that the final rule meets the requirements of 10 CFR 50.109, that there would be a substantial increase in the overall protection of public health and safety and the cost of implementation is justified.

List of Subjects in 10 CFR Part 55

Criminal penalty, Manpower training programs, Nuclear power plants and reactors, Reporting and record-keeping requirements.

For the reasons set out in the preamble and under the authority of the Atomic Energy Act of 1954, as amended; the Energy Reorganization Act of 1974, as amended; the Nuclear Waste Policy Act of 1982; and 5 U.S.C. 552 and 553; the NRC is adopting the following amendments to 10 CFR part 55.

PART 55—OPERATORS' LICENSES

1. The authority citation for 10 CFR part 55 continues to read as follows:

Authority: Secs. 107, 161, 182, 88 Stat. 939, 948, 953, as amended; sec. 234, 83 Stat. 444, as amended (42 U.S.C. 2137, 2201, 2232, 2282); secs. 201, as amended, 202, 88 Stat. 1242, as amended, 1244 (42 U.S.C. 5841, 5842).

Sections 55.41, 55.43, 55.45, and 55.59 also issued under sec. 306, Pub. L. 97-425, 96 Stat. 2262 (42 U.S.C. 10226). Section 55.61 also issued under secs. 186, 187, 68 Stat. 955 (42 U.S.C. 2236, 2237).

2. In § 55.2, paragraph (c) is added to read as follows:

§ 55.2 Scope.

(c) Any facility licensee.

§ 55.57 [Amended]

3. Section 55.57 is amended by removing paragraph (b)(2)(iv).

4. In § 55.59, the introductory text of paragraph (c) is revised to read as follows:

§ 55.59 Requalification.

(c) *Requalification program requirements.* A facility licensee shall have a requalification program reviewed and approved by the Commission and shall, upon request consistent with the Commission's inspection program

needs, submit to the Commission a copy of its comprehensive requalification written examinations or annual operating tests. The requalification program must meet the requirements of paragraphs (c) (1) through (7) of this section. In lieu of paragraphs (c) (2), (3), and (4) of this section, the Commission may approve a program developed by using a systems approach to training.

Dated at Rockville, Maryland, this 2nd day of February, 1994.

For the Nuclear Regulatory Commission,
Samuel J. Chalk,
Secretary of the Commission.

[FR Doc. 94-2927 Filed 2-8-94; 8:45 am]

BILLING CODE 7590-01-P

RESOLUTION TRUST CORPORATION

12 CFR Part 1627

RIN 3205-AA19

Service of Process Upon the Resolution Trust Corporation

AGENCY: Resolution Trust Corporation.

ACTION: Final rule.

SUMMARY: The Resolution Trust Corporation (RTC) hereby issues this final rule designating the officers upon whom service of process may be made when RTC is sued in its receivership, conservatorship, or corporate capacities. In the interest of providing prompt guidance in an area that has caused much confusion, RTC is publishing this final rule.

EFFECTIVE DATE: This final rule is effective February 9, 1994.

FOR FURTHER INFORMATION CONTACT: Gregg H. S. Golden (Counsel), telephone 202-736-3042.

SUPPLEMENTARY INFORMATION:

I. Background

Section 501(a) of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) added a new section 21A to the Federal Home Loan Bank Act, 12 U.S.C. 1441a, establishing the RTC. RTC was authorized to sue and be sued in its corporate capacity (12 U.S.C. 1441a(b)(9), as amended by the Resolution Trust Corporation Refinancing, Restructuring, and Improvement Act of 1991, Public Law No. 102-233, sections 310 and 314(2)(B)(i), 105 Stat. 1761, 1769, 1771 (1991)). The provisions of the Federal Rules of Civil Procedure establishing the method for service of process upon a government corporation contemplate

that the corporation will designate an agent for service.

By reference to section 11, 12, and 13 of the Federal Deposit Insurance Act, 12 U.S.C. 1821, 1822, and 1823, FIRREA also granted RTC the same powers as the Federal Deposit Insurance Corporation when acting in its receivership or conservatorship capacity (12 U.S.C. 1441a(b)(4)(A), as amended). Inherent among these is the power to sue and be sued in such capacity, see 12 U.S.C. 1821(d)(2).

Because of the important differences among the capacities in which RTC functions, process is frequently served upon officers, employees, or temporary agents who have little or no connection with or responsibility for the component of RTC involved in the underlying lawsuit. Both RTC and the litigants are inconvenienced by the resulting confusion, delay, and expense. In the interest of reducing these costs to the public, RTC by this rule designates the agents who will accept service of process on behalf of RTC in its conservatorship, receivership, and corporate capacities.

Because RTC acts as conservator or receiver for a large number of savings associations, and because compulsory process (such as a subpoena for production of documents) does not always clearly identify the institution in question, the regulation provides that where process is served upon RTC in its capacity as conservator or receiver for a savings association, the savings association should be clearly identified on the face of the papers. This provision is intended to facilitate a prompt and constructive response to the papers.

On April 8, 1993 (58 FR 18144), RTC issued an Interim Rule with Request for Comments, designating its agents for service of process. A printing error in the original publication was corrected by notice on April 22, 1993 (58 FR 21627). RTC has proceeded under authority of the interim rule in the succeeding months, and thus has obtained useful experience in the practicality of the rule. RTC has received one comment on its interim rule and is now issuing a final rule.

II. Comment and Discussion

In response to the April 8, 1993, interim rule and request for comment, RTC received one comment. That single comment commended RTC's express designation of agents for service of process, and asked that RTC also consider designating specific officers to receive notices under agreements with other parties.

RTC's experience with the interim rule has been generally favorable.

III. Regulatory Flexibility Act Statement

Pursuant to section 605(b) of the Regulatory Flexibility Act, RTC hereby certifies that this proposal is not expected to have a significant economic impact on a substantial number of small entities. Accordingly, a regulatory flexibility analysis is not required.

List of Subjects in 12 CFR Part 1627

Administrative practice and procedure.

For the reasons set out in the preamble, the Resolution Trust Corporation revises part 1627 of title 12, chapter XVI, of the Code of Federal Regulations to read as follows:

PART 1627—SERVICE OF PROCESS UPON THE RESOLUTION TRUST CORPORATION

Sec.

1627.1 Service of process on RTC in its corporate capacity.

1627.2 Service of process on RTC as conservator or receiver.

Authority: 12 U.S.C. 1441a(b)(4)(A), (9)(E), (11)(A), 1821(d)(2).

§ 1627.1 Service of process on RTC in its corporate capacity.

Any summons, complaint, subpoena, or other legal process issued against RTC in its corporate capacity shall be duly issued and served upon:

- (a) The Assistant General Counsel (Litigation); and
- (b) The Secretary, the address for both of whom is: 801 17th Street, NW., Washington, DC 20434-0001; and
- (c) Upon such other persons as may be required by the provisions of the Federal Rules of Civil Procedure governing service of process upon an agency of the United States.

§ 1627.2 Service of process on RTC as conservator or receiver.

(a) Any summons, complaint, subpoena, or other legal process issued against RTC in its capacity as conservator or receiver for a savings association shall be duly issued and served upon RTC's Assistant General Counsel in the field office having jurisdiction over the state, Commonwealth, possession, territory, or district in which such savings association has its principal office. The name and principal office of such savings association should be stated on the face of the summons, complaint, subpoena, or other process. In addition, a copy of such process shall be delivered to the Secretary, Resolution Trust Corporation, 801 17th Street NW., Washington, DC 20434-0001 (telephone: 202-416-7372).

Enclosure 2
Regulatory History Index

REGULATORY HISTORY INDEX FOR 10 CFR PART 55, "RENEWAL OF LICENSES AND REQUALIFICATION REQUIREMENTS FOR LICENSED OPERATORS", PUBLISHED IN FEDERAL REGISTER FEBRUARY 9, 1994 (59 FR 5934).

1. Policy Issue Paper (Notation Vote) SECY-92-100, March 19, 1992, EDO to Commissioners, Status and Direction of the licensed Operators Requalification Program.
2. Commission Public Meeting, June 2, 1992. Briefing on the status of Licensed Operator Requalification Program and Complex Simulator scenarios.
3. Staff Requirements Memorandum, on SECY-92-100, Status and Direction of the Licensed Operator Requalification Program, dated June 23, 1992.
4. Draft Issue paper to revise 10 CFR Part 55, Operator Requalification Examination Requirements, July 13, 1992.
5. Memo to Office of Nuclear Reactor Regulation and the Office of the General Counsel requesting review of the draft issue paper of July 13, 1992, on the proposed revision to Part 55 Operator Requalification Examination Requirements, dated July 23, 1992.
6. NRR Office comments on the issue paper of July 13, 1992, on revision of Part 55, Operator Requalification Examination Requirements, dated July 31, 1992.
7. Memo dated, September 11, 1992, from RES to Directors of the Offices of NRR, OE, OGC, ADMIN, IRM, ACRS, requesting office review and concurrence on a proposed rule, 10 CFR Part 55 entitled "Operators' License."
8. Memo for C. J. Heltemes dated September 28, 1992, from P. Norry, Dir ADMIN, subject, Office comments and concurrence on Part 55 proposed rule "Operators' Licenses."
9. Memo for Michael T. Lesar, Rules Review Section, Office of Admin from Brenda Jo. Shelton, Office IRM, dated 9/29/92. Subject: Request Comments & Concurrence of Proposed Rule 10 CFR Part 55, "Operator's Licenses."
10. Memo for Edward L. Jordan, Dir., AEOD dated September 29, 1992, from C.J. Heltemes, Dep. Dir. for Generic Issues and Rulemaking, RES, subject, requesting review of proposed rule Part 55 to amend Operator Requalification Examination Requirements.
11. Memo for Commissioners, dated September 29, 1992, from William C. Parler, General Counsel, subject, Legal Issues Associated with NRR's Proposal to Amend the Requalification Examination Process for Licensed Operators.
12. CRGR Briefing on Licensed Operator Requalification Requirements, October 6, 1992, presented by Paul H. Lohaus and Robert M. Gallo.

13. Memo for Stuart A. Treby, Assistant General Counsel for Rulemaking and Fuel Cycle, OGC, dated October 7, 1992, from Paul Lohaus, Acting Chief, RDB, requesting review of proposed rulemaking, Part 55, Operators' Licensed Requalification Examination Requirements to determine if the proposed rule should be subject to the backfit requirement Section 50.109.
14. ACRS briefing on Licensed Operator Requalification Requirements, dated October 9, 1992. Presented by William Russell.
15. Memo for EDO from David Ward, Chairman, ACRS, subject, Proposed Amendments, Part 55, dated October 19, 1992.
16. Receipt of handwritten comments from OGC on 10/27/92 on the proposed rule, 10 CFR Part 55 on Renewal of Licenses and Requalification.
17. Memo for Paul Lohaus, Acting Chief, RDB dated November 19, 1992, from Stuart A. Treby, Assistant General Counsel, OGC, subject, Comments on the applicability of the backfit rule to Part 55 Operator Requalification Examination requirements.
18. Memo for James M. Taylor, EDO from Edward L. Jordan, Chairman, CRGR, dated November 23, 1992 subject, Minutes of CRGR meeting Number 230 on proposed rule Part 55 Operator Licensed Requalification Examination Requirements.
19. Memo for James M. Taylor, EDO dated November 23, 1992, from E.S. Beckjord, Dir, RES., subject, Proposed amendments to Part 55 Renewal of Licensees and Requalification Requirements for Licensed Operators requesting EDO approval for submittal as a commission paper.
20. SECY-92-430, dated December 28, 1992. Proposed Rule Part 55 on Renewal of Licensees and Requalification Requirements for Licensed Operators.
21. SECY-92-432, dated December 28, 1992, provides the Status of the Licensed Operator Requalification Program - Response to the SRM M920602.
22. Commissioner Vote Sheets with comments on proposed rule Part 55, "Licensed Operator Requalification Program," Jan. & Feb. 1993.
23. Correction Notice to all Holders of SECY-92-430, dated January 6, 1993.
24. SRM dated March 29, 1993 for the Commissioners On SECY-92-430 Authorizing publication of the proposed amendments to Part 55, "Renewal of Licensees and Requalification Requirements for Licensed Operators for Public Comment."
25. SRM dated April 27, 1993 for the EDO on SECY-92-430, proposed Amendment to 10 CFR Part 55, Renewal of Licensees and Requalification Requirements for Licensed Operators.
26. "OMB Reporting and Recordkeeping Requirements for 10 CFR Part 55, Operators' Licenses," Proposed rule, dated 4/28/93.

27. Federal Register Notice, (PROPOSED RULE) dated Thursday, May 20, 1993, Vol. No. 96, pages 29366-29370.
28. NRR comments on 10 CFR Part 55, "Operators' Licenses Requalification Program Issues", dated 8/3/93.
29. Memo from B. Morris, Dir/DRA/RES to J. Larkins, ACRS, Amendments to 10 CFR Part 55, dated October 4, 1993.
30. Memo from J. Heltemes, Dep Dir RES to cognizant Offices for concurrence on 10 CFR Part 55, "Operators' Licenses," dated October 5, 1993.
31. ACRS briefing October 8, 1993 on Final Rulemaking for 10 CFR Part 55 Licensed Operator Requalification Requirements, presented by S. Bahadur and R. Gallo.
32. Memo to C. J. Heltemes, Dep Dir RES, from J. R. Gray, OE, concurrence on Final Amendment, to 10 CFR Part 55 "Renewal of Operators' Licenses and Requalification Requirements for Licensed Operators'", dated October 14, 1993.
33. Minutes of CRGR Meeting No. 251 dated 10/14/93, 10 CFR Part 55, "Requalification of Licensed Operators'."
34. Memo to Chairman of the NRC from Chairman of ACRS, dated 10/14/93, approving Proposed Final Amendments to 10 CFR Part 55, on "Renewal of Licenses and Requalification Requirements for Licensed Operators."
35. Memo to chairman CRGR from Director, RES, dated 10/15/93 requesting review of Final amendments to 10 CFR Part 55 on "Requalification Requirements for Licensed Operator's."
36. Memo to C. J. Heltemes, Dep Dir, RES, from Frank J. Miraglia, NRR, dated 10/15/93, concurring on proposed final rulemaking on "Requalification Requirements for Licensed Operator's," 10 CFR Part 55.
37. Memo for Eric S Beckjord, Dir RES, from P. Norry, Dir Admin, dated 10/25/1993, concurring on final amendments on Part 55, Renewal of Licenses and Requalification Requirements for Licensed Operators.
38. Briefing for CRGR on Licensed Operator Requalification, 10/26/93, presented by B. Morris/RES and R. Aluck/RES.
39. Memo for S. Bahadur, Chief, RDB/DRA/RES from B. J. Shelton, Chief, IRM, dated 11/1/93, subject, concurrence on 10 CFR 55 Final amendments on Renewal of Licenses and Requalification Requirements for Licensed Operators.
40. Memo to M. T. Lesar, Chief, Rules Review Section, from B. J. Shelton, IRM branch, dated 11/2/93, requesting comment and concurrence on final rule 10 CFR Part 55, Amendments on Renewal of Licenses and the Requalification Requirements Licensed Operators.

41. SECY-93-333, dated 12/7/93, Final Amendments to 10 CFR Part 55, On Renewal of Licenses and Requalification Requirements for Licensed Operators.
42. Memo to B.J.Shelton, Chief, IRM branch from S.Bahadur, Chief RDB/DRA/RES dated 12/13/93, FRN and Supporting Statement for OMB approval of information collection requirements for final amendments for 10 CFR Part 55, " On Renewal of Licenses and Requalification Requirements for Licensed Operators".
43. Memo to A. DiPalo (RES) from M.T.Lessar, Chief Rules Review Section, dated 12/30/93, subject, Review of SECY-93-333, with coments on final 10 CFR Part 55 rule, "Renewal of Licenses and Requalification Requirements for Licensed Operators".
44. Commission Vote Sheets, dated December 1993, on SECY-93-333.
45. SRM dated January 19,1994, affirmatiom of 10 CFR Part 55 amendments in SECY-93-333.
46. Memo S.Bahadur RES/DRA to D.Meyer, ADM dated 1/25/94, transmitting final FRN on amendments to 10 CFR Part 55 described in SECY-93-333.
47. Approval of OMB Clearance package by Gerald F. Cranford, dated 1/26/94.
48. Final Rule 10 CFR Part 55, Renewal of Licenses and Requalification Requirements for Licensed Operators, Federal Register Notice, February 9, 1994 (59 FR 5934).
49. Public comments on amendments to Part 55 final rulemaking.

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Enclosure 3
10 CFR Part 55 Documents

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON STATUS OF LICENSED OPERATOR REQUALIFICATION
PROGRAM AND COMPLEX SIMULATOR SCENARIOS

Location: ROCKVILLE, MARYLAND

Date: JUNE 2, 1992

Pages: 97 PAGES

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The transcript is intended solely for general informational purposes. As provided by 10 CFR 9.103, it is not part of the formal or informal record of decision of the matters discussed. Expressions of opinion in this transcript do not necessarily reflect final determination or beliefs. No pleading or other paper may be filed with the Commission in any proceeding as the result of, or addressed to, any statement or argument contained herein, except as the Commission may authorize.

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This is an unofficial transcript of a meeting of the United States Nuclear Regulatory Commission held on June 2, 1992, in the Commission's office at One White Flint North, Rockville, Maryland. The meeting was open to public attendance and observation. This transcript has not been reviewed, corrected or edited, and it may contain inaccuracies.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

- - - -

BRIEFING ON STATUS OF LICENSED OPERATOR
REQUALIFICATION PROGRAM AND
COMPLEX SIMULATOR SCENARIOS

- - - -

PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Tuesday, June 2, 1992

The Commission met in open session,
pursuant to notice, at 10:30 a.m., Ivan Selin,
Chairman, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
FORREST J. REMICK, Commissioner
JAMES R. CURTISS, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

SAMUEL J. CHILK, Secretary

WILLIAM C. PARLER, General Counsel

DR. ANDREW BATES, Office of the Secretary

JAMES TAYLOR, Executive Director for Operations

THOMAS MURLEY, Director, NRR

WILLIAM RUSSELL, Associate Director for Inspections
and Technical Assessment, NRR

JACK ROE, Director, Division of Lic. Perf. & Qual.
Eval., NRR

ROBERT GALLO, Chief, Operator Licensing Branch, DLPQ,
NRR

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P-R-O-C-E-E-D-I-N-G-S

10:30 a.m.

1
2
3 CHAIRMAN SELIN: Good morning. We're
4 looking forward to an interesting session this
5 morning. This is a topic that my fellow Commissioners
6 and I hear about just about every time we go to a
7 utility. So, when I hear the people in the utilities
8 talk, I come out on the other way. But then when I
9 hear the other people talk, I get more sympathetic to
10 the utility's point of view. So, I hope for some
11 elucidation today.

12 Although today's program has to do with
13 the operator requal program and the initiatives that
14 have been made with regard to improving it, there are
15 also recommendations on another similar issue which is
16 the guidance for the development of simulator
17 scenarios used in conjunction with initial and requal
18 exams.

19 We've heard a lot about this on our trips.
20 It seems to me that actually there are several issues
21 and although they're interconnected, they are separate
22 issues. One has to do with the relative role of the
23 NRC compared to the utilities in determining the
24 qualifications of individual operators. The second
25 has to do with, related to the first, the efficiency

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1 of examining the programs as opposed to the
2 individuals who come out of the programs. The third
3 has to do with whether it's the ability to do
4 individual task orders performed successfully within
5 a team and then the fourth has to do with the
6 generation of simulator scenarios and equipment, and
7 within that the relative stress on normal operations
8 versus emergency operations. There may be a couple of
9 other issues that I've missed along the way, but these
10 are all interesting topics.

11 Commissioners?

12 Okay. Mr. Taylor?

13 MR. TAYLOR: Good morning. With me at the
14 table are Doctor Murley and Bill Russell on my right
15 and Jack Roe and Bob Gallo. They're in the division
16 responsible, Jack and Bob, for this area.

17 The staff has been active in this whole
18 subject of requal exams and the problems, of course
19 some of which the staff has heard as well as
20 Commissioners in the staff's travels. I believe we're
21 trying to, and you'll hear today, do a number of
22 things that we believe are continuing improvements in
23 steps with regard to this whole program.

24 So, with those thoughts, I'll ask Tom
25 Murley to continue.

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1 DOCTOR MURLEY: Thank you.

2 Mr. Chairman and Commissioners, this
3 program is very important to the NRR staff. I spend
4 a fair amount of time on it. Bill Russell and Jack
5 Roe spend a lot of time on it.

6 We carried out a major restructuring of
7 the requalification program in late 1987, early 1988,
8 changing it from a more theoretical examination of
9 operators to an examination of their operational
10 knowledge and skills. There have been some changes in
11 subsequent years and we are proposing further changes
12 today. These changes are not to mend a broken
13 program, we believe, but are viewed as further
14 refinements to a basically sound program as we gain
15 more experience in its implementation.

16 The staff believes it is essential to safe
17 operation of nuclear plants that operators be examined
18 periodically to assure they maintain their knowledge
19 and skills. In fact, we believe this is one of the
20 most important safety tasks we carry out.

21 As the Chairman mentioned, over the last
22 year or so, we have heard many complaints from
23 licensees on the difficulty of the simulator scenarios
24 in the exams. I'm sure you've heard these same things
25 with colorful language like crash and burn scenarios

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1 and doomsday scenarios and that sort of thing.

2 Staff has carefully examined this issue in
3 recent months and indeed we have found some areas
4 where improvements were needed. For example, more
5 guidance to improve the consistency of the exams and
6 this will be discussed later by Jack Roe. But there's
7 a fundamental concept that we believe must be
8 maintained and that is that the operators must be
9 thoroughly tested on their ability to carry out
10 emergency operating procedures during an accident.
11 This need to test the operators on the EOP means in
12 turn that the simulator scenarios must be complex
13 enough to challenge the EOPs.

14 Let me illustrate by an example. I asked
15 the staff to diagram the event tree for the TMI-2 core
16 melt accident and estimate its probability of
17 occurrence, assuming our state of knowledge before the
18 event. As you know, this was a very complex accident
19 with multiple equipment failures and multiple human
20 errors. The staff would have estimated the frequency
21 of occurrence of the precise TMI sequence of events
22 somewhere in the vicinity of once in 100 million
23 reactor years. That is 10^{-8} .

24 The significance of these findings for
25 today's topic is that any serious accident is certain

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1 to involve multiple equipment failures and multiple
2 human errors. It will involve a sequence of events
3 that almost certainly would not have been predicted
4 likely in advance, although the sequence would have
5 generic similarities to the types of accidents that we
6 commonly study and train for.

7 The point of this discussion is that it is
8 necessary, we believe, to use complex scenarios to
9 challenge the EOPs during simulator tests. And even
10 though the predicted frequency for that particular
11 scenario may be very low, it is an appropriate
12 surrogate for hundreds of other scenarios whose
13 collective frequency is substantially higher. For
14 that reason, we intend to continue using complex
15 scenarios that challenge the EOPs in our
16 requalification program.

17 I'll turn it over to Bill Russell.

18 CHAIRMAN SELIN: Before you go, Doctor
19 Murley --

20 DOCTOR MURLEY: Yes.

21 CHAIRMAN SELIN: -- let me see if I
22 understand this correctly. A complex scenario is made
23 up of a number of components which obviously aren't as
24 complex as the whole scenario. I could see three
25 different arguments. One is that the scenario itself

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1 is typical enough of a number of scenarios that if the
2 operators could handle that scenario they should be
3 able to handle related scenarios of the sum of whose
4 weight is not so unlikely as any individual scenario.

5 The second is that it's a good way of
6 testing the individual components and that a very wide
7 range of scenarios, even though they wouldn't look
8 like that one, would have those components in them and
9 you can only test the components under game
10 conditions. You know, shooting from around the ring
11 isn't as good as playing one on one even though it's
12 not the same game.

13 The third is just you need experience in
14 handling complexity. Not because the scenario is
15 similar, but the stress and the fact that you don't
16 know what's going to happen next even though nobody
17 pretends that that's the scenario.

18 DOCTOR MURLEY: I would say it slightly
19 different, Mr. Chairman, that the scenario in my view
20 is just a means to get into the emergency operating
21 procedures with a number of complex confounding things
22 happening and to test the ability of the operator to
23 deal with that situation and to follow the procedures
24 and to get out of it. The scenario itself is a
25 secondary importance as far as I'm concerned. That

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1 is, I don't care particularly whether an operator can
2 handle an ATWS combined with a loss of off-site power
3 or something, but can he handle a difficult
4 circumstance with, as I said, confounding events like
5 had happened at TMI. There were some events that went
6 on there that had nothing really to do with the fact
7 that the core melted, but it was extremely confusing
8 at the time.

9 COMMISSIONER REMICK: Tom, I don't differ
10 with what you say, but where I get confused is what do
11 we conclude. Let's say you do that and the operator
12 fails. Do we conclude that that operator is not
13 qualified to continue his license, which I thought was
14 the purpose of requalification exams, to determine is
15 the person qualified to have the license continued by
16 the NRC? Do we conclude that it should not be? Do we
17 conclude that the EOPS are no good? Do we conclude
18 that the man hasn't been adequately trained on the
19 EOPs and therefore doesn't know the EOPs, but still is
20 a qualified operator perhaps, or do we conclude that
21 the requalification training program at the plant is
22 no good?

23 Where I get confused, I think we've put
24 all of these together and what one time was an
25 examination of the qualifications of an operator to

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1 have that license continue for another six years has
2 become one of an inspection of the adequacy of EOPs
3 and the adequacy of training programs to train people
4 in EOPs. I think they all got wrapped together, which
5 has placed a considerable stress on those individual
6 operators --

7 DOCTOR MURLEY: Yes.

8 COMMISSIONER REMICK: -- and has forced
9 them in several cases to -- the old arguments have
10 always existed that they've got to train them to pass
11 the exam and then train them to operate the plant for
12 the multitude of other things that operators have to
13 do. The argument that I hear recently is that we're
14 distorting the retraining programs toward adequacy on
15 the simulator of handling EOPs and not around the
16 balanced operator. As I say, I completely agree with
17 what you said, but I get confused then at how we use
18 the information we get.

19 DOCTOR MURLEY: Well, any one of those
20 reasons that you mentioned could be --

21 COMMISSIONER REMICK: Could be.

22 DOCTOR MURLEY: -- a reason for failure.
23 We try to -- for example, we try to rule out the EOPs
24 themselves by separately validating the EOPs. I
25 believe we've tested every plant and looked at their

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1 EOPs separately in an inspection to straighten that
2 out. So, that removes that weakness, we believe. But
3 it could be anyone, either the program or the
4 individual, and Bill and Jack are going to talk about
5 that in a minute.

6 MR. RUSSELL: If I could go back though to
7 just supplement with a more pragmatic rationale as it
8 relates to probabilities of scenarios, we don't think
9 it's appropriate to use the probability of a scenario
10 as a basis for concluding whether that scenario would
11 be meaningful from the standpoint of testing the
12 operators and EOPs. We just don't think that you
13 should have a criteria of that type. Rather, you
14 should have objectives, which we will discuss in some
15 detail. We have proposed some speed limits on numbers
16 of failures and complexity and some guidelines and
17 then have identified some model simulator scenarios
18 that we think are appropriate and degree of difficulty
19 and we're proposing other vehicles, including senior
20 management review in advance by signing onto the
21 security agreement during the exam prep. week so they
22 can judge whether the proposed scenario meets those
23 objectives or not and resolve that issue prior to
24 administering the exam. So, we will be addressing
25 these in some detail in the briefing.

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1 (Slide) In fact, what I'd like to do, if
2 I could have the first slide, please.

3 Mr. Chairman, you identified four points
4 in your opening remarks. We are going to be
5 addressing those, not quite in the same order. What
6 we propose to do is have Bob Gallo first discuss the
7 results of the pilot program. This was a program that
8 we brought to the Commission earlier which would be a
9 shift from individual evaluation during the simulator
10 portion of the exam to a crew evaluation. Following
11 that, I will discuss some proposed rulemaking and
12 program enhancements and some important lessons
13 learned from the evaluation of programs which were
14 unsatisfactory, basically the results of 15 reviews.
15 Then we will talk in some detail about this issue
16 regarding the degree of difficulty of simulator
17 scenarios.

18 I'd like to have Bob Gallo start the
19 presentation.

20 MR. GALLO: Thank you, Bill.

21 Mr. Chairman, Commissioners, the pilot
22 program was introduced in February of 1991 in SECY-91-
23 034 and in a briefing to the Commission in that same
24 month and introduced our proposal to conduct a pilot
25 requalification program. The bases for proposing the

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1 pilot program were the improved individual and
2 facility pass rates on our requalification exams, as
3 well as the general improvements in facility testing
4 materials and test evaluators.

5 The staff proposed to revise the simulator
6 test grading to encourage better teamwork,
7 communications, command and control among the control
8 room operators. During the pilot exams, the NRC
9 focused on crew evaluations on the simulator in
10 parallel with the facility evaluators. The 1987
11 change to the Part 55 rule incorporated operation as
12 part of the control room team as one of the 13 items
13 to be evaluated during operating tests. That same
14 rule included a requirement for facilities to certify
15 a plant reference simulator and that made the teamwork
16 testing more feasible.

17 What we did in the pilot program is that
18 we replaced what had been called individual critical
19 task with something called a crew critical task. The
20 facilities continued to conduct individual evaluations
21 and prescribed remedial training as a result of the
22 individual problems that they identified and were also
23 observed by NRC examiners.

24 The significant individual weaknesses that
25 were identified during the simulator test were further

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1 evaluated during the walk through portion of the test
2 and I'll talk a little bit more about that in a few
3 minutes. We tried to take the dynamic simulator test
4 and translate it into further follow-up during the
5 walk through portion of the test and that's one of the
6 things that the Commission paper and the appendix
7 discusses, that we were going to make a modification.

8 The results of the pilot exams, we did
9 these at six facilities. All the facilities had
10 previously satisfactory programs and we did get at
11 least one facility from each NRC regional office.
12 There were 27 crews that were tested and all crews
13 passed. The overall pass rate on the individual
14 portion of the exam was 96 percent, which is better
15 than what we had been historically running. There
16 were four individuals failed either on the written
17 portion of the exam or in the walk through.

18 The facility licensees identified six
19 additional operators during the simulator test for
20 further training and remediation. Those individuals
21 were removed from shift duties and had remedial
22 training conducted and pretested prior to returning to
23 license duties.

24 As noted in the Commission paper 92-100,
25 the pilot tests identified a need to improve the

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1 follow-up method for individual weaknesses. What our
2 current proposal is in the examiner standards, we're
3 going to revise it to follow up on the individual
4 deficiencies in a manner compatible with the
5 deficiency. Right now we've indicated two choices in
6 there which will be really up to the examination team.
7 The first choice will be either oral questioning
8 following the individual simulator scenario, or if
9 necessary another simulator scenario will be run for
10 that individual.

11 CHAIRMAN SELIN: Could you just stop for
12 a minute, Mr. Gallo?

13 MR. GALLO: Yes, sir.

14 CHAIRMAN SELIN: You said that 96 percent
15 passed the individual part of the exam.

16 MR. GALLO: Yes, sir.

17 CHAIRMAN SELIN: The numbers are
18 different, but is that comparable in difficulty to the
19 kind of exams that individuals take or is that less
20 demanding? Because then another six percent in some
21 sense didn't pass the crew exam. I mean the crew
22 passed, but the individual weaknesses were bad enough
23 to be pulled out as --

24 MR. GALLO: We required remedial training
25 by the facility at least.

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1 CHAIRMAN SELIN: So, would the comparable
2 figure to what you do outside the pilot test be 96
3 percent or 90 percent?

4 MR. GALLO: I think if we were not doing
5 the pilot exam, we potentially would have had
6 additional six failures.

7 CHAIRMAN SELIN: So, it would be ten
8 percent?

9 MR. GALLO: That it would probably be
10 around 90 percent pass rate.

11 CHAIRMAN SELIN: Is that comparable to
12 what you'd get outside the pilot test, a 90 percent
13 pass rate?

14 MR. GALLO: Yes, sir. The 1991 overall
15 rate was 91 percent passed for individuals. In 1992,
16 it's running around 95 percent pass rate right now.
17 So, it's in the ball park.

18 COMMISSIONER REMICK: Bob, to make sure I
19 understand looking at the slides, but I should
20 remember the SECY paper differently, but your follow-
21 up is not on remediation weaknesses, it's follow-up
22 from an examining standpoint. Is that correct?

23 MR. GALLO: Yes, sir. It's something
24 during the dynamic simulator exam that stands out so
25 much that the examiners believed, and the regional

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1 administrators agreed, that they need to follow up on
2 it immediately.

3 COMMISSIONER REMICK: How about the
4 remediation programs in general, have you found those
5 to be adequate when people find weaknesses that those
6 are --

7 MR. GALLO: Yes, sir. Yes, sir. There
8 have been very few second failures.

9 COMMISSIONER REMICK: And everybody has an
10 identified remediation program, I assume?

11 MR. GALLO: Yes, sir, that's required.

12 COMMISSIONER REMICK: It's required.

13 MR. GALLO: (Slide) Okay. Slide number
14 4 we talk about the benefits.

15 CHAIRMAN SELIN: Wait a minute. Go back
16 to the previous slide. I'm a little confused. Your
17 conclusion was you need to improve the follow-up
18 method for individual weaknesses. How does that
19 square with the remediation being satisfactory?

20 MR. GALLO: It's more in our method what
21 the NRC is doing. During the pilot exam we were
22 taking individual walk through and trying to follow up
23 on deficiencies identified in the simulator. Some of
24 those deficiencies weren't easily translatable into an
25 individual walk through type of task.

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1 CHAIRMAN SELIN: So, the technique needs
2 improvement.

3 MR. GALLO: The technique that we were
4 using was able to follow up if there were control
5 board manipulation skills or individual skills, we
6 could follow up on those. But things like
7 communication, command and control really aren't
8 easily followed up on by an individual method. So, we
9 do have those kind of problems. We may have to run
10 another scenario to specifically focus on that problem
11 in that individual.

12 MR. RUSSELL: I'll also cover this because
13 part of the reason for having the follow up in this
14 area, even though we found the licensees are indeed
15 conducting adequate remediation and making those
16 judgments, is the requirement to be able to renew a
17 license having concluded that they had passed an NRC
18 exam. So, if there are individual weaknesses, we need
19 to follow up on those weaknesses to make an individual
20 finding for the purposes of license renewal under the
21 terms of the regulation and I'll explain that some
22 more in just a moment.

23 COMMISSIONER REMICK: Am I correct that a
24 remediation programs come about after either the NRC
25 or the licensee has determined somebody has

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1 inadequacies? What you're talking about here is
2 efforts to determine whether the person fails or
3 passes the exam by, if he has apparent weaknesses,
4 methods of pursuing to see if that is a true weakness
5 or that it was just something --

6 MR. GALLO: Yes, sir. And if it's really
7 an egregious case, the NRC is going to follow up on
8 it. Those are the ones we're trying to focus on.

9 Okay. Some of the benefits that we see
10 from the pilot method are that the crew grading method
11 encourages control room teamwork and therefore
12 enhances reactor safety. The operator actions are no
13 longer constrained by our grading method. The
14 operators can function as a team to ensure reactor
15 safety without concern about who may be graded on a
16 critical task. And the individual critical task, the
17 way we've done it before, the operators tended to
18 separate and do their tasks and didn't necessarily
19 want to get involved in another person's task because
20 they may end up failing an exam along with the other
21 individual.

22 The facility licensees can train their
23 operators as they would have them operate rather than
24 training to pass the NRC's examination. The crew
25 grading method provides a more realistic measure of

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1 operator performance in that it does not constrain
2 operator initiative by imposing the artificial grading
3 method. Crew grading methods also reduces examination
4 stress. That was our conclusion based on the results
5 of the questionnaires that we provided to the
6 operators who took the examination. They believed it
7 was a less stressful environment.

8 CHAIRMAN SELIN: I would just like to
9 say --

10 MR. GALLO: Yes, sir.

11 CHAIRMAN SELIN: Not now, but I'd like to
12 come back to the question of stress later because
13 there's good stress and there's bad stress and
14 reducing stress is not an objective in itself.

15 MR. GALLO: We've tried to reduce undue
16 stress or unnecessary --

17 CHAIRMAN SELIN: We can talk about that
18 later.

19 MR. GALLO: Yes, sir.

20 CHAIRMAN SELIN: The fact that I passed
21 this page doesn't mean that it's not a topic, but I do
22 have a question. What I seem to be hearing is that
23 you test people in a team -- I'm sorry, you evaluate
24 people in a team for realistic measures of
25 performance, but we still have an individual test

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1 every six years. In other words, if you happen to
2 have five real superstars on the team and the sixth
3 person is quite weak, somehow that sixth person will
4 still have to pass an individual test at some point.
5 Is that right or not?

6 MR. GALLO: If he passes the pilot method,
7 he passes a written exam and a walk through exam and
8 his performance is satisfactory on that crew, then he
9 passes the NRC relicensing exam, the renewal.

10 CHAIRMAN SELIN: If his performance is
11 satisfactory?

12 MR. GALLO: Yes, sir.

13 CHAIRMAN SELIN: But if the crew's
14 performance is satisfactory and his wasn't?

15 MR. GALLO: They are the ones that we're
16 going to have to herd out and if there is a critical
17 task that is missed because of that individual --

18 CHAIRMAN SELIN: That's the one I'd like
19 to talk about at some point.

20 MR. GALLO: They're the ones we're going
21 to have to pick out.

22 CHAIRMAN SELIN: Those crews don't always
23 operate as crews. The idea of testing people's
24 performance in a crew is terrific because that's what
25 their job is. But the idea of passing and failing a

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1 crew, which I don't think you've proposed, is not
2 terrific because people don't always operate a crew,
3 they mix and match on different situations.

4 COMMISSIONER CURTISS: I have two
5 questions before you go on, picking up first on the
6 Chairman's question and then I have a legal question
7 about Part 55.

8 Under an approach like this where you
9 focus on the capability of the crew, is it important
10 for our purposes how much flexibility a licensee has
11 in crew makeup? Let's assume there are two or three
12 or four or five very strong individuals. Do we
13 envision a situation where a licensee would have
14 unlimited latitude in reconstituting crews which in
15 turn are the basis for our evaluation?

16 MR. RUSSELL: Let me address that from two
17 perspectives. One, I think that there is likely to be
18 positive peer pressure from within the utility
19 organization to take appropriate action for a weak
20 performer from the standpoint that a weak performer
21 could drag down the crew's performance so that that
22 could have a positive effect. We believe that
23 demonstration of the capability to perform in a
24 dynamic environment as a part of a team is sufficient.

25 We have originally licensed these

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1 individuals based upon their individual performance
2 and they're in a continuing requalification program
3 where they're examined six times in six years by the
4 licensee and the requirement at this point is that
5 once during that six years they would also be examined
6 by the NRC. That examination, for the operating
7 test, has two portions. He must pass both portions to
8 pass the operating test, the dynamic portion of the
9 simulator and the walk through portion.

10 The modification that we're looking at is
11 if there is an individual weakness observed on the
12 simulator, rather than making a pass/fail judgment on
13 the individual during the crew portion of the
14 examination, you would follow up on that weakness and
15 make a judgment as to whether that individual indeed
16 passed or did not pass the total operating test, but
17 it would be in a second phase. So, you would do the
18 crew portion first and then follow up on the weakness.
19 We're proposing that the setting for that weakness
20 could be the simulator, if you saw problems, for
21 example, in manipulating controls, or if it's a
22 knowledge-related issue that you observed on the
23 simulator, you could follow up with it orally.

24 So, we would continue to make a
25 determination on an individual basis on the operating

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1 test for the individual as the regulation is currently
2 structured. So, we believe that it is consistent with
3 the Waste Policy Act Amendment and Part 55. What
4 we're doing is we're just using the operating tests in
5 two portions and rather than a strict simulator and
6 then walk through for practical factors out in the
7 plant that supports the operating test, we are
8 modifying the approach to the operating test.

9 COMMISSIONER CURTISS: Yes. I want to
10 come back to the legal question in a minute because
11 that was my second question.

12 But to take a hypothetical, if a licensee
13 has five crews made up under the tech specs of five
14 licensed operators and let's just say for the sake of
15 discussion five staff licenses that are not normally
16 on the board or on a crew, if they take each of those
17 staff licensees and put them on one of the operating
18 crews, one on each, and if, as I guess hypothetically
19 could turn out, the staff licensees turned out to be
20 the weakest performers and they turned out to be the
21 ones that couldn't perform the critical task but their
22 crew did, to take this example perhaps to an extreme,
23 we would be satisfied. We would not object to a
24 situation where they put their five staff licenses
25 together on a single crew so long as we are

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1 comfortable with the remediation program for the
2 individual deficiencies that are identified in the
3 crew evaluations, first, and secondly with the
4 understanding, of course, that they'd have to pass the
5 JPMs and the written exam.

6 MR. RUSSELL: The question as it relates
7 to the current regulations which I'm going to be
8 making a recommendation on how to change it, so I'm
9 going to focus on how it's structured today. In the
10 case where the crew passed but there was an individual
11 weakness, that individual weakness would be followed
12 up on and we would make a determination as to whether
13 that individual passed or did not. So, the burden is
14 now on the NRC to make determinations now on
15 individual performance and that's what's built in the
16 regulations. That has indeed occurred in one of the
17 programs that was unsatisfactory, did exactly follow
18 that scenario. It was Nine Mile Point Unit 2, you
19 recall an earlier Commission briefing, and they did
20 mix and match. They took their operating crews that
21 trained together, split them into two crews and then
22 supplemented them with staff engineers and then
23 performed very poorly and we found their program was
24 unsatisfactory.

25 So, I think the emphasis will be more on

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1 training together and what we are seeing today is that
2 the staff licensees train together because that's an
3 easy way to do it, and the crews train together on
4 their normal rotation. So, we believe that this
5 approach would foster training together, would foster
6 peer pressure from the standpoint that if there is a
7 weak individual you would have both the pressure of
8 the crew trying to remediate that individual and the
9 responsibility of a licensee to make that judgment
10 such that an individual failure does not result in a
11 crew failure because a crew failure with one more crew
12 failure raises the risk of not continuing to operate
13 the facility.

14 COMMISSIONER CURTISS: In some you're
15 satisfied that there are sufficient safeguards in
16 place in the process that any concern about the way
17 crews are constituted would be addressed via those
18 safeguards?

19 MR. RUSSELL: That's correct.

20 DOCTOR MURLEY: Could I just address a
21 little further, Commission, because I think the
22 scenario that you postulate is not impossible. It
23 could happen. We would rely, I think, on the resident
24 inspectors to let us know if something like that is
25 happening. The one time it could happen, that is

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1 where they take staff licensees who normally don't
2 stand watch and had put them together could be like
3 during a strike situation and we've had that.

4 Now, we've got special inspection
5 instructions out for the regions and the residents, if
6 there is that kind of a situation. I think we'd have
7 to address it on its own. It's not inconceivable that
8 we might make them do some special training, for
9 example, before they went into such a mode. But if
10 your question was could this happen when you have five
11 individual fairly weak staff license holders, the
12 answer is it could happen and we would just have to
13 rely, I think, on our resident inspectors.

14 COMMISSIONER CURTISS: I should say I'm
15 generally enamored of the crew concept. The report
16 that you've attached to the SECY paper points to some
17 significant benefits of crew-based evaluations of
18 critical tasks and I was at least preliminarily
19 favorable when we were briefed on it some time ago and
20 the results of what you've come up with, I think, make
21 a compelling case to go forward. But it does seem to
22 me this is the one area where given the focus on crews
23 rather than individuals, we need to ensure that we are
24 comfortable with the process for how crews can be
25 constituted to address what I acknowledge may be rare

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1 cases but not impossible.

2 CHAIRMAN SELIN: You said that's today's
3 situation.

4 MR. RUSSELL: Yes, sir.

5 CHAIRMAN SELIN: Would you go through what
6 would happen under --

7 MR. RUSSELL: I'm going to discuss in just
8 a moment when I talk about some of the program
9 enhancements and I will cover that point in some
10 detail.

11 CHAIRMAN SELIN: Okay.

12 COMMISSIONER REMICK: Could I ask a
13 follow-up before you ask your legal question?

14 COMMISSIONER CURTISS: Go ahead.

15 COMMISSIONER REMICK: Tom, in the example
16 you gave, were you thinking that those staff engineers
17 were active or inactive licensees because if they were
18 inactive there's a requirement they have, what, 40
19 hours of training before they be put on the board?

20 MR. RUSSELL: In parallel watch standing
21 with licensed operators, so that they have to be
22 current --

23 DOCTOR MURLEY: No, my point was clearly
24 they have to meet our requirements and regulations.
25 But nonetheless, it is conceivable that you could have

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1 five weak --

2 COMMISSIONER REMICK: Sure.

3 DOCTOR MURLEY: Even having met that, you
4 could have five weak operators on a crew and we would
5 simply rely on our residents to know that and to tell
6 us and come up with some recommendations. It's not
7 inconceivable that we could make them, if that were
8 the case, and they were needed, let's say, in a strike
9 situation, it's not inconceivable that we would make
10 them go through some special training.

11 COMMISSIONER REMICK: Just out of
12 curiosity, are most of those staff engineers holding
13 inactive license so they would require that additional
14 training or is there a mix?

15 MR. GALLO: It's my understanding that
16 that's the case, that most of them do not stand shift
17 watches regularly. There's a few facilities that do
18 rotate their staff people, but I think they're in the
19 minority.

20 COMMISSIONER REMICK: Okay. Thank you.

21 MR. RUSSELL: But let me comment,
22 particularly to the Chairman's question and
23 Commissioner Curtiss'. The situation as it exists
24 today absent a rule change would be that the staff
25 would do both a crew evaluation and follow up on

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1 individual weaknesses and make a judgment on
2 individuals pass/fail. Under the proposal to continue
3 with the pilot program, we would modify the mechanism
4 that we use to follow up on weaknesses such that the
5 six weaknesses that were identified on the simulator
6 exam would be called pass or fail and then you would
7 be into the same process you have today, so that you
8 would follow up with that remediation. So, that is
9 currently the requirement for the NRC to administer a
10 complete operating test. Not just the simulator
11 portion, but also to make a judgment on individual
12 performance so that the pilot program that Bob is
13 discussing is one that is fully consistent with the
14 regulation and making a determination both on crew
15 performance and individual performance with a
16 pass/fail decision by the NRC.

17 COMMISSIONER CURTISS: All right.

18 MR. RUSSELL: The only difference is how
19 we structure it.

20 COMMISSIONER CURTISS: Yes.

21 MR. RUSSELL: I will be covering in just
22 a moment a proposal which addresses eliminating the
23 requirement for NRC to examine for the purposes of
24 license renewal.

25 COMMISSIONER CURTISS: Okay. Actually I

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1 have two questions here, one a factual question. Have
2 we seen over the past several years any trend in the
3 number of staff licenses? I know some utilities like
4 to retain those licenses for the purpose of making
5 sure that their upper level management is tuned into
6 that process. Is there a trend one way or the other
7 more or less or is it a mixed bag?

8 MR. ROE: We have an assumption by
9 discussions with utilities is that there's a slight
10 trend downward where they have reevaluated the need
11 for staff licenses because of the commitment of the
12 individual's time to the requalification program and
13 may diminish the amount of time that they can spend on
14 their principal responsibilities as a staff engineer
15 and people have not renewed those particular licenses.

16 COMMISSIONER CURTISS: Okay. Now could I
17 ask Bill Parler if he agrees with Bill Russell's legal
18 analysis? Is the approach that the staff has in mind,
19 just on this question of crew-based evaluations, can
20 it be done in the context of current Part 55 and
21 consistent with 306?

22 MR. PARLER: I will tell you what Parler's
23 understanding is. I first asked myself whether the
24 approach is compatible with the basic licensing
25 section for operators in Section 107 of the Atomic

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1 Energy Act which talks about licensing individuals.
2 However, that section, as is the case for other
3 sections of the Atomic Energy Act, has general
4 language in it so that the concepts that Mr. Russell
5 is talking about probably more likely than not could
6 be accommodated.

7 In addition to Section 106, as you know,
8 we have very broad rulemaking authority which has been
9 upheld. We also have, as the paper points out,
10 Section 306 of the Nuclear Waste Policy Act, the so-
11 called Weicker Amendment, to reflect on. Although
12 that work has not been done, I have looked at that
13 section while I was awaiting the unknown legal
14 question to be propounded and it also, like the
15 Section 107, has very general language in it.

16 There is a section in Part 55 which is
17 referred to in the staff paper, 55(b)(2)(iv), which
18 does call for something specific. As Mr. Russell has
19 pointed out, if they shift over to the new concept,
20 that will have to be changed because you don't want a
21 regulation that says one thing and have us do
22 something else. That was pointed out yesterday. If
23 we have a policy statement that is not in accord with
24 the regulations, that gives one pause to reflect. But
25 if you have a regulation which we are ignoring, that's

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1 a legal problem.

2 Now, that is the legal background. The
3 question that I have is this, if under the new
4 approach the fate of an individual depends upon the
5 performance of the group or any individual in the
6 group, what I'm suggesting probably would pass muster
7 under the legal authority that we have which is very
8 broad, the statutory authority we have which is very
9 broad. But, I would think that in the interest of
10 fairness if nothing else, that the approach should be
11 clearly articulated so that all of the operators and
12 future operators that would be subject to this system
13 would understand clearly what their future fate might
14 depend upon.

15 All that I can tell you, if I had to put
16 myself in a group with my fellow professionals and my
17 fate would depend on some of those, I would want the
18 system clearly spelled out for me and I would want to
19 know what my rights were, what the criteria were, et
20 cetera.

21 COMMISSIONER ROGERS: Just before we leave
22 this, on this follow-up exam, of the people that
23 appear to be weak on the simulator exam, do you
24 propose to use the same kind of examination process as
25 the past if you do it on a simulator? If that part of

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1 the follow-up involves a simulator portion, would the
2 same criteria as have been employed now be used or
3 would there be something different?

4 MR. RUSSELL: The approach and the
5 standards would be the same. We would choose the
6 setting and the scope of the evaluation to match what
7 the deficiency was. I think the most straightforward
8 one is control board manipulations. If it's a boiling
9 water reactor and he's demonstrated difficulty during
10 an ATWS in inserting control rods one at a time, you
11 may want to have him do some rod pulls and demonstrate
12 that he can manipulate the control boards to do that.
13 That type of review would be evaluated. So the basis
14 for making a decision was whether he had sufficient
15 familiarity with the boards or not. If it were a
16 staff licensee who didn't normally stand watch and
17 perform those types of functions, that may be the kind
18 of weakness that you would observe.

19 COMMISSIONER ROGERS: Would the criteria
20 though for passing or failing be what they are right
21 now? For example, there are certain errors if one
22 makes that you automatically fail if you make -- there
23 are some automatic fail errors. Would you retain that
24 same approach?

25 MR. RUSSELL: We would retain the

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1 judgmental factors identically to the way they are
2 now. We would not use individual critical tasks which
3 are the basis now we're proposing to change from
4 individual critical tasks to crew critical tasks. You
5 may still have knowledge-based failures and that he
6 doesn't understand or demonstrate an ability to use
7 the emergency operating procedures or he has
8 weaknesses in control board manipulations, and the
9 standards for making those judgments are described,
10 but they still do involve examiner judgment based upon
11 the performance or the information that was
12 transferred.

13 COMMISSIONER ROGERS: I guess I'm still
14 not hearing an answer quite to what I'm asking.

15 MR. RUSSELL: It's not objective from the
16 standpoint of yes or no, he did a critical task. The
17 critical task is in the context of a scenario which is
18 in the dynamic portion of the event. But if an
19 individual would normally perform a crew critical task
20 and did not and some other member of the crew
21 performed that task for him, while the crew would not
22 fail because he had been backed up, that would be an
23 area where you would explore, "Why didn't you do this?
24 Is there a knowledge deficiency or something else?"

25 COMMISSIONER ROGERS: At the present time

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1 there are certain tasks, it's my understanding, that
2 if you don't carry out correctly you fail.

3 MR. RUSSELL: That's correct. That's
4 current examiner standard revision 6.

5 COMMISSIONER ROGERS: I mean just any one
6 of those, you will fail, if you fail.

7 MR. RUSSELL: That's correct.

8 COMMISSIONER ROGERS: Now, are those the
9 same criteria that are going to be applied in the
10 follow-up exam?

11 MR. RUSSELL: No.

12 COMMISSIONER ROGERS: No.

13 MR. RUSSELL: That is correct.

14 COMMISSIONER ROGERS: You'll have somewhat
15 different approaches.

16 MR. RUSSELL: Right. In the current
17 Revision 6 of the examiner standards, we do have
18 individual critical tasks and they are of the
19 character that you just described. That is a failure
20 of a critical task constitutes a basis for the
21 operator failing the simulator portion of the
22 examination. We are proposing to eliminate those and
23 go to crew critical tasks, so that they back each
24 other up, they communicate.

25 COMMISSIONER ROGERS: But even in the

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1 follow-up.

2 MR. RUSSELL: But even in the follow-up,
3 we would evaluate the individual's knowledge of why
4 didn't he do that and still make a judgment. But that
5 would be more an individual knowledge or performance
6 rather than a crew critical task performance.

7 COMMISSIONER ROGERS: Okay. All right.
8 Thank you.

9 MR. RUSSELL: Bob, you want to finish with
10 the --

11 MR. GALLO: Yes. I'd like to finish with
12 the bottom of the slide on page 4, proposal. The
13 staff has recommended that the Commission approve the
14 continued use of the modified pilot program on a
15 volunteer basis. The reason for the volunteer is that
16 several pilot participants have requested to use the
17 pilot method that we did in the exams in 1991. What
18 we'd like to do as soon as the standards are published
19 for comment, to allow those facilities or any
20 facility, if they desire, to transfer over to the
21 pilot methodology as soon as the standards are made
22 publicly available.

23 COMMISSIONER CURTISS: The standards would
24 permit the option? I'm assuming most people won't go
25 to the crew evaluation, but they could retain the old

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1 approach.

2 MR. GALLO: Yes sir, that's our
3 understanding.

4 MR. ROE: I don't know if we gave you the
5 right answer. When the standard becomes effective,
6 everyone will take the crew.

7 MR. GALLO: Oh, I'm sorry.

8 COMMISSIONER CURTISS: They'll be required
9 to?

10 MR. ROE: They'll be required. In the
11 interim, those who volunteer will be allowed to the
12 crew. Those who wish to continue with the individual
13 focused can also have that. But once the standard is
14 effective, they will all have the crew.

15 COMMISSIONER CURTISS: Just so I make sure
16 I understand the legal posture that we're in, setting
17 aside the broader changes that the staff is proposing
18 for the longer term, in order to do that, to implement
19 the crew-based approach, we don't need to modify Part
20 55 in any respect but simply focus on the examiner
21 standards?

22 MR. GALLO: That's correct. That's our
23 position.

24 MR. ROE: That's our understanding.

25 COMMISSIONER CURTISS: Okay.

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1 CHAIRMAN SELIN: That's to use the crew --
2 embedded in crew concept.

3 MR. RUSSELL: With the specific follow-up
4 on individual weakness.

5 CHAIRMAN SELIN: But it's still the
6 Commission doing the --

7 MR. RUSSELL: Yes, sir. It would still be
8 an NRC examination with an NRC determination both on
9 crew and individual performance.

10 CHAIRMAN SELIN: Okay.

11 MR. GALLO: Each individual will get a
12 letter from the NRC telling them their status based on
13 that examination.

14 COMMISSIONER CURTISS: One of the concerns
15 I guess that we've had in the past, Bob, is with the
16 examiner standards changing as frequently as they
17 have, the training programs have had a difficult time
18 assimilating that information given the lead time
19 that's required for the training programs to get up to
20 speed. This is obviously something that I think a lot
21 of licensees want to do and perhaps would pose the
22 same kind of problem. But from the standpoint of
23 timing here, and since we are talking about changing
24 the examiner standards, can you speak to when this
25 approach might be implemented on a mandatory basis?

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1 MR. RUSSELL: We expect that if we were to
2 get a Commission decision on going ahead with the
3 pilot program approach, that we would shortly, within
4 30 days, be able to issue for comment the examiner
5 standards that could implement that. At that point in
6 time we'd make it available on a voluntary basis for
7 those licensees that wish to follow the pilot program
8 approach.

9 Once the examiner standards are issued for
10 comment and we go through the discussion with
11 industry, PROS and others, we then have a 90 day
12 comment period. Following that 90 day comment period,
13 there's a 30 day period for implementation. So, from
14 the time it's promulgated until it's actually required
15 for use for implementation, it's on the order of six
16 months.

17 COMMISSIONER CURTISS: Okay. And this
18 would be the only change that you'd be making in
19 examiner standards at this point in time?

20 MR. RUSSELL: There are other changes.

21 MR. ROE: Other changes that are not as
22 significant. The only other significant change is the
23 incorporation of the proposed guidance on the
24 complexity of the dynamic simulators, which I'll
25 address later.

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1 COMMISSIONER CURTISS: Okay.

2 MR. GALLO: The last thing I wanted to say
3 was that the -- Bill has said most of it -- the
4 Revision 7 is now in progress and there is a draft
5 Revision 7 that has been sent out to the regional
6 offices for comment, so they have it for comment now.
7 We'll be collecting their comments for the next two
8 weeks or so here.

9 COMMISSIONER CURTISS: Okay.

10 MR. RUSSELL: (Slide) I'd like to have
11 slide 5, please.

12 I want to shift gears now. We've talked
13 a little bit about some of these points and what I'd
14 really like to do is focus on what are the significant
15 findings from the requalification program from a
16 safety standpoint and what are the lessons learned
17 from the programs which have been unsatisfactory.

18 First, as Tom mentioned, the
19 requalification program has been a very important tool
20 for assessing the capability of licensees and their
21 operators to use the emergency operating procedures.
22 What we found with the unsatisfactory programs was
23 significant licensee weaknesses rather than individual
24 performance problems. It was really a failure of the
25 licensee to maintain the capabilities of the

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1 individuals, rather than individual failures. And
2 yet, I'm sure you're aware most of the stigma was
3 often transferred to the individuals rather than to
4 the facility licensee.

5 Of the 15 programs that were
6 unsatisfactory, ten had significant failure root
7 causes in EOP usage or understanding. This is
8 notwithstanding the fact that some had recently had
9 emergency operating procedure team inspections prior
10 to this period of time.

11 Some licensees, those in '91, were
12 evaluated as SALP category 1 in operations and yet we
13 still found that their programs were unsatisfactory.
14 This caused questions in my mind and resulted in the
15 staff conducting an in-depth lessons learned
16 evaluation of the unsatisfactory programs which had
17 been identified with particular focus on those in
18 1991, specifically in Regions I and V. I personally
19 followed up with two of those facilities, including
20 interviews on-site with operators through senior
21 managers as well as meetings in the region to discuss
22 this and had formal lesson learned evaluation reports
23 that were received from the regions and reviewed.

24 What I'd like to do is characterize in two
25 aspects what were the root causes we saw with the

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1 licensee performance problems and what were some of
2 the lessons learned for the NRC from the standpoint of
3 how these were administered.

4 First, we found that there was
5 insufficient emphasis by the licensees on emergency
6 operating procedures. There was a lack of challenging
7 scenarios in many cases. The small scenario bank had
8 been learned by the operators. There were prior EOP
9 inspection weaknesses that had not been completely
10 followed up on or incorporated. And more importantly,
11 there were significant changes to the EOPs. That is,
12 they may have been on an earlier revision and, in the
13 case of the boiling water reactors, moved to Revision
14 4 and that had not been fully integrated.

15 CHAIRMAN SELIN: Into the simulator?

16 MR. RUSSELL: Either into the scenarios
17 or, in one case, they made changes to the simulator
18 which improved the capability of the simulator to
19 represent the plant and what its response was and that
20 surprised the operators. They had not been adequately
21 trained.

22 COMMISSIONER CURTISS: Bill, can I pick up
23 on that point? This is an issue that has been
24 discussed before and I guess I have a number of
25 questions about what's going on.

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1 If you take a look at the last couple of
2 years, '90 and '91, and recognizing that you focused
3 on the last year in particular, seven of the eight
4 unsat programs have been BWRs and, as you pointed out,
5 a significant number of those, five of the seven BWR
6 failures, have involved EOPs. You quickly alluded to
7 the fact that they're going through Rev. 4 with the
8 EOPs on the BWRs.

9 I guess the question I have here is, is
10 that fact that we're seeing a large majority of BWR
11 unsat programs an anomaly that's related to the Rev.
12 4 that they're going through in terms of incorporating
13 now into their programs or is it a function of the
14 fact that with the BWRs you have greater reliance on
15 contingency procedures in EOPs, greater sequential
16 activity going on, parallel activity going on rather
17 than sequential? Is it something that's inherent to
18 the BWR EOPs that we're seeing manifested here in the
19 results?

20 MR. RUSSELL: Let me -- I anticipated your
21 question a little bit, because it's one we've also
22 asked ourselves. In fact, there have been no PWR
23 failures since 1990 and the early trends in 1989 were
24 that the bulk of the failures were PWR with few BWR
25 failures and in 1991 they were all BWR failures with

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1 no PWR failures. And on a percentage basis, we are
2 seeing a higher failure rate on BWRs than we are on
3 PWRs. Let me give you some differences between the
4 two which we think account for this somewhat.

5 First, the BWR EOPs are more involved and
6 require a greater degree of operator prioritization.

7 Secondly, they're required to be in
8 multiple flow paths at the same time. They must
9 control pressure and level and power so that they are
10 in parallel portions of the EOPs.

11 There's also very close coupling between
12 the BWR reactor coolant system and containment, so
13 essentially any LOCA puts you into a containment
14 management activity at the same time so that you are
15 into containment kinds of issues.

16 These features, along with what I will
17 characterize as questions about earlier emphasis on
18 the ability to use EOPs and training, a limited
19 scenario bank, are the things which I think have
20 contributed to the higher failure rates that we've
21 been observing. However, thus far in 1992, the
22 message seems to be getting out and I have met with
23 the BWR owners group executives and we've discussed
24 this point. I don't think it's a fundamental issue.
25 I think it is one that just does require more

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1 attention and training and, by going to the later
2 versions of the BWR EOPs, it is something which must
3 be done in a methodical way. It's not something you
4 just do without training feedback and evaluation.

5 Another item which was identified at one
6 facility was that there was not good training on when
7 it's appropriate to deviate from procedures or when
8 you should follow procedures and there was very much
9 a process of what I will characterize as ad hoc
10 judgments being made in the course of an event rather
11 than following the procedures, a very high confidence
12 level that the operators knew what they were supposed
13 to do but did not in fact follow the procedures.

14 We also found that there was a lack of
15 management oversight. In one case, the examination
16 materials that were submitted to the NRC to prepare
17 the examination were inadequate and not consistent
18 with the examiner standards. When this was pointed
19 out, the utility went into a maximum effort to correct
20 those deficiencies, get the examination up to speed,
21 but they did not focus on what implication this had
22 from the standpoint of what they had been training to
23 before. And so, then when the operators took the exam
24 they found that the examination was not consistent
25 with what they had been trained on and was not even

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1 consistent with the training and the program at other
2 plants within this particular licensee organization,
3 some of which had also experienced unsatisfactory
4 programs and the lessons learned had not been
5 transferred.

6 There were a number of lessons learned for
7 the NRC as well, the principal one being that you need
8 to have both Headquarters and other region involvement
9 in requalification examinations, that we need to not
10 do this on an isolated basis. You need to understand
11 the root causes of why the programs are satisfactory
12 and fix them. There needs to be more management
13 involvement and oversight in the process, and those
14 are changes which we will be putting in place also
15 with the revision to the examiner standards along with
16 the policies for more on-site involvement by NRC
17 managers.

18 COMMISSIONER ROGERS: Just before you move
19 on, Bill, on this question of the need for more
20 Headquarters involvement, what does that really mean?
21 What's missing in the regions?

22 MR. RUSSELL: In the cases that we were
23 involved with in this root cause analysis, often this
24 came as a surprise to Headquarters and, in one
25 instance, it was a surprise to the region and yet

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1 there were signs that things were going awry.

2 I mean, the examination is conducted over
3 a period of time. You're on site typically a week
4 prior to the examination. Then you're on site for a
5 week, sometimes a little bit longer, for
6 administration of the examination and you can tell
7 when things are not going right and there are signals
8 when you start getting confrontations. That's the
9 time that you need to bring management in from both
10 the region and Headquarters so that these kinds of
11 issues can be addressed.

12 We're also proposing to do this more
13 formally at the beginning of the process during the
14 preparation week and not allow it to wait until the
15 end when the examination is starting to go in a
16 direction that would be unsatisfactory.

17 DOCTOR MURLEY: I could give a for
18 instance. Region V only has one boiling water
19 reactor, for example. I think Region IV only has one,
20 don't they? So they can't have the broad experience
21 in BWR scenarios, so they frequently need some help
22 and we need to pay attention.

23 MR. RUSSELL: For the four programs that
24 we reviewed in detail in 1991, we also found or
25 reached a conclusion that had we looked we would have

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1 been able to find these problems without waiting for
2 a requalification program examination and an
3 unsatisfactory result. The resources in the regions
4 were directed more to doing the mandatory
5 requalification examination for all of the operators,
6 some 6,000, just the numbers and the resources that
7 were going into that, and we prioritized our
8 activities and what were perceived to be better
9 performers may not have been contacted by NRC.

10 We also saw significant differences in
11 their initial licensing program results, from their
12 requalification program results, and it wasn't getting
13 much attention from the licensee nor from the NRC. In
14 fact, in some instances we had not really looked into
15 this area in well over a year.

16 COMMISSIONER CURTISS: Bill, could I
17 follow up on that point? Because, when you get to the
18 recommendations for where we go with this program
19 long-term, one of the points that I think you're going
20 to emphasize, as I understand it, is that you rely on
21 the inspection program to do some of the heavy lifting
22 under the new approach that you propose to take. A
23 comment that you've made and an observation that I've
24 made, I guess, prompt me to ask this question. In the
25 four that you looked at in 1991 in terms of our

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1 ability to identify through the inspection program
2 what's happening in the requal program as opposed to
3 the requal tests themselves, a couple of things are I
4 think worth observing.

5 First, as you've noted, there have been
6 previous EOP inspections for some of these plants and
7 one in particular that I'm familiar with where the EOP
8 inspection identified some problems that might have
9 led to less of a concern when the program was
10 ultimately declared unsat. And I guess my question in
11 that context is, is it something that we're not doing
12 or something that the licensees aren't doing or what
13 in terms of the integration of the inspection results
14 of the EOP inspections into the program?

15 Secondly, as I looked at the SALP process,
16 which is another vehicle for us to be able to evaluate
17 and anticipate some of these problems, I noted that
18 for the four plants that came up unsat in 1991 in the
19 cycle previous to when the requal exam was
20 administered three of those four plants had SALP 1s in
21 the ops arena. And I guess the question that those
22 two observations begs is to what extent is our
23 inspection program, can our inspection program carry
24 the freight that you envision in the broader proposal
25 and are we effective in terms of identifying problems

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1 and anticipating them early and ensuring that they get
2 solved?

3 MR. RUSSELL: I think the simple answer is
4 that the inspection program as we conduct it was not
5 effective in identifying these problems.

6 DOCTOR MURLEY: It's got to change.

7 MR. RUSSELL: And we are proposing some
8 significant changes to that program and what we're
9 suggesting is that the resources that are currently
10 going into administering examinations for every
11 operator be redirected and put into this inspection
12 activity to find the problems and address them early
13 before you get to the point where you have an
14 unsatisfactory program and I'll develop that some
15 more.

16 COMMISSIONER CURTISS: When you get to the
17 point of talking about that, I'd like to pursue that
18 in more detail.

19 MR. RUSSELL: The other observation you
20 made regarding the EOPs, at least for two of the
21 facilities that were evaluated in '91, there were
22 significant changes to the EOPs between the time of
23 the inspections regarding the EOPs and what they were
24 administering and that was not factored in in an
25 effective way into the training programs.

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1 COMMISSIONER ROGERS: Could you just say
2 very briefly what those EOP inspections involved?
3 Were they just looking at --

4 MR. RUSSELL: The mandatory team
5 inspections looked at both -- there were a number of
6 elements. First was the technical quality of the EOPs
7 in the facility and how they compared to the approved
8 generic technical guidelines. The second was related
9 to training. The third was related to human factors
10 and how they portrayed the EOPs and whether they
11 followed their own writers guide. And the fourth was
12 what I will characterize as validation verification
13 kinds of activities to ensure that the EOPs once
14 you're through that process can be used.

15 So, we did observe crews on simulators,
16 not from the standpoint of evaluating their
17 performance, but simulator performance was an
18 important feature of the EOPs. The focus was then to
19 test the EOPs rather than to test the crew's ability
20 to use the EOPs. That slight different focus did
21 raise a number of issues, some of which were addressed
22 and remediated. In other cases, the issues were
23 missed.

24 I'd like to go back to a point that Bob
25 made and that's the third bullet on slide 5, and that

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1 is that we have concluded that licensees can evaluate
2 and remediate individual weaknesses, that this is not
3 an issue that we're seeing actual problems with in the
4 field. But what we are seeing is that there have been
5 some cases where facility licensees haven't been doing
6 the job that we expected of them, and so our approach
7 is to shift the focus of our activities from
8 evaluating individuals to evaluating licensees and how
9 well they maintain the individual performance of their
10 operators.

11 And our experience has shown that we are
12 not having difficulties or disagreements in grading of
13 performance. That has not been an issue in more than
14 two years. The grading by NRC examiners and facility
15 examiners is essentially right on. That's not been an
16 issue at all.

17 COMMISSIONER CURTISS: Bill, that's one of
18 the two questions that I was going to ask when we get
19 to the broader recommendations, to what extent
20 quantitatively there's been any variation between our
21 grades and the licensees' evaluations of performance,
22 and I gather from what you've said that there's very
23 little?

24 MR. RUSSELL: There's very little. In no
25 case has it made a difference in judging whether the

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1 program is satisfactory or unsatisfactory. There are
2 sometimes differences in calls on an operator and the
3 approach that we're proposing in the revised examiner
4 standard is to go with whomever is most conservative
5 and have the licensee make the judgment first as to
6 whether the individual passed or failed and, if the
7 NRC disagrees with that, identify the rationale of why
8 we would conclude that the individual failed.

9 COMMISSIONER CURTISS: Okay.

10 MR. RUSSELL: So, we're going to go a two-
11 step process, but we have not seen a need to have a
12 standard of comparison in grading as the basis for
13 judging whether the program is satisfactory or not.

14 COMMISSIONER CURTISS: Is there a similar
15 congruence in terms of the formulation of the exams
16 and the questions in the exam bank?

17 MR. RUSSELL: On the process we're under
18 now, yes, there is, and there are facility examiners
19 that work on that process. The one exception has been
20 the degree of difficulty of the simulator scenario,
21 which Jack will address in just a moment, and we're
22 proposing a safeguard to provide a vehicle to ensure
23 that that is resolved prior to administering an exam.

24 (Slide) If I can have the next slide,
25 please, we've indicated that we believe that we can

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1 find and identify the weaknesses through inspection
2 activities. There are a number of limitations and
3 constraints on this and some program direction change.

4 First, we would propose that we would do
5 this at a minimum each SALP cycle such that there is
6 significant interaction between the NRC and the
7 facility licensee regarding requalification and the
8 implications of their performance as it may relate to
9 emergency operating procedures.

10 We would also propose only to use this
11 approach of an inspection-directed approach where the
12 program was previously deemed to be satisfactory. If
13 we had concerns about the performance of the program,
14 if it were unsatisfactory, we would continue with the
15 program as it is now with the NRC administering
16 conducting the examinations.

17 We would also propose that there be two
18 amendments to the regulations which I'll cover, but
19 essentially the examinations which the facility is
20 required to administer annually on the operating test
21 to all their crews, which may involve six or more
22 operating tests with the scenarios, as well as the
23 written examinations and the job performance measures
24 be submitted to the NRC in advance of the exam such
25 that we could do an in-house evaluation and make a

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1 determination as to whether we wish to observe the
2 actual administration of that examination or not.

3 We would also look at, if we had not
4 observed in detail, including parallel grading, we
5 would then look at whether we had conducted an in-
6 depth training inspection using the systems approach
7 to training which is described in the present training
8 inspection procedures which relies on the NUREG-1220,
9 which we discussed with the Commission when we briefed
10 it on the training rule last June. This was developed
11 in the mid-'80s. It has been used as a reactive type
12 inspection, that is where there have been problems or
13 an unsatisfactory program to find the reasons why the
14 program has gone unsatisfactory. This would be a
15 change in that guidance to make this more proactive
16 where you have a concern and you want to follow up on
17 training weaknesses.

18 The third option would be to administer
19 the examination as we do today.

20 To implement this, we need to eliminate
21 the requirement for NRC to examine each operator
22 during the six year license. This is needed in order
23 to make the resources available to redirect into the
24 inspection program and to make sure that we have the
25 individuals who have the capability to do this type of

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1 inspection, that is the examiners, to shift their role
2 from one of evaluating individuals to evaluating
3 facility programs.

4 We believe that currently about half of
5 the staff resources are going into requalification
6 activities with about half going into initial
7 licensing. That's both for staff FTE and contractor
8 resources. We believe that the redirected inspection
9 program is going to be much more heavily weighted
10 toward staff, NRC involvement rather than contractor
11 involvement and we do see that there would be some
12 overall savings if this were adopted.

13 COMMISSIONER CURTISS: Can you speak to
14 that question in terms of --

15 MR. RUSSELL: In the FY '94 budget
16 submittal, we have proposed reducing the equivalent of
17 approximately 10 FTE for about \$1.7 million,
18 essentially in anticipation of this program approval.

19 CHAIRMAN SELIN: Ten out of --

20 MR. RUSSELL: Ten out of approximately 80.
21 It would be about a quarter reduction in the
22 contractor support for this examination effort.

23 DOCTOR MURLEY: Before you move on to the
24 proposed changes, I want to come back to a question
25 that Commissioner Remick had.

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1 As I recall, the question was today if
2 there's a failure, if a person fails on a test, you
3 said, as I recall, that it's not clear if the
4 individual just wasn't capable or he was poor, if the
5 EOPs were poor, if the requal program was poor or
6 maybe the exam was poor. What we're going to try to
7 do is to eliminate all but the requal program as the
8 reason, if we can. That is we continue to validate
9 our exams and review our exams.

10 The EOPs, as I said, we've looked at and
11 the individual we believe because of the initial
12 licensing that he goes through, there's a presumption
13 that he has the capability to do this. So, we try to
14 focus in on the requal program.

15 Is that an answer to what you were getting
16 at?

17 COMMISSIONER REMICK: Yes. I had the
18 feeling, and partly I say it's confusion, on what is
19 the intent that we had mixed together a lot of things
20 under something called requal exam and that perhaps we
21 forgot what requal exam, at least originally, was
22 intended to do. It was a perception I had and some
23 confusion on my part. Jack and I have talked about on
24 a number of occasions.

25 DOCTOR MURLEY: The intent is to make this

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1 to focus in on the requal program of the utility.

2 MR. RUSSELL: Back in an earlier life,
3 when I was responsible for the rulemaking that we are
4 now talking about changing, the staff did not propose
5 at that time to evaluate individuals and programs at
6 the same time using the same tools. We received
7 direction from the Commission to change that. Some of
8 the Commissioners who gave us that direction
9 subsequently were involved in the briefings in 1991
10 and indicated that it was time to revisit and that was
11 part of the discussion when the pilot program was
12 approved.

13 CHAIRMAN SELIN: Before you go on, are we
14 up to the change in the rules?

15 MR. RUSSELL: Yes, sir.

16 CHAIRMAN SELIN: Mr. Parler, in the Waste
17 Policy Act, is there any requirement that we actually
18 certify the individual operators?

19 MR. PARLER: There is the requirement that
20 they be licensed, but who actually does it is not
21 there. But the operators have to be licensed by the
22 NRC. How the NRC becomes satisfied that these people
23 have passed all of the qualifications to receive the
24 license is not spelled out.

25 CHAIRMAN SELIN: So we could legally

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1 accept that we understand the program and we do some
2 quality control and accept the results of the
3 licensee's programs?

4 MR. PARLER: Yes, I think so, Mr.
5 Chairman. That certainly was what I was trying to say
6 earlier. It would be prudent on my part also to say
7 that I would like to see the details of how the thing
8 would work.

9 CHAIRMAN SELIN: The argument that you
10 haven't made, which actually I find fairly compelling
11 in addition to -- well I've heard you make two
12 arguments. The first is we shouldn't use the results
13 of an examination to figure out if the program is any
14 good. That's a very inefficient way. Let's go
15 directly to the algorithm and not just look at the
16 calculations and that takes a lot of resources. The
17 resources would be more effectively spent there than
18 afterwards.

19 The second is that, in fact, the kind of
20 test that we do are so mixed up with so many other
21 things that in spite of the fact that we conduct the
22 test or the exams -- following up on Commissioner
23 Remick's point, when somebody doesn't do well in the
24 exam, it's not clear what the root cause is.

25 The third thing is that we really only

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1 license operators to work at that particular facility.
2 It would be very different if this were a portable
3 license like the 727 pilot, to go from facility to
4 facility. So, what we're really doing is not so much
5 licensing operators but saying that facility,
6 including its equipment and its people, et cetera, is
7 fit to operate. So, once you look at the licensing of
8 operators in the context of everything else that goes
9 with that facility, because the ultimate judgment is
10 not is this operator licensable really, but is that
11 facility properly staffed as well as maintained, et
12 cetera, et cetera.

13 The licenses says you are fit to be part
14 of the complement that operates this facility, just as
15 we permit a lot of other things to happen at that
16 facility. At least in my mind that's a critical
17 difference between giving people a portable license to
18 go anyplace in the industry.

19 COMMISSIONER REMICK: Going back to your
20 earlier question, Mr. Chairman, this is not an answer
21 to it because it's not an answer to Section 306, but
22 it is a little bit of history. Until about 1984, the
23 NRC did not administer the requal exams, licensees
24 did. About 1984, the Commission decided, if I recall,
25 that 20 percent of the operators would be examined by

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1 the NRC during the two year license renewal period in
2 effect at that time. So, it was about ten percent per
3 year. I know the staff had a terrible time meeting
4 that ten percent with resources. Then, about 1987,
5 the Commission decided that they would extend the
6 license period to six years and during that six year
7 period 100 percent of the operators be licensed by the
8 NRC.

9 My impression has been it's always been a
10 difficult task for us to provide the resources to do
11 a thorough job in that area.

12 DOCTOR MURLEY: The responsibility was
13 given to the regions in about 1983 or '84. And you're
14 right, it was very difficult to staff up and --

15 MR. TAYLOR: We've had to use contractors

16 COMMISSIONER REMICK: Yes.

17 MR. RUSSELL: Another point I'd like to
18 make is that with 6,000 candidates out there, unless
19 we put them on crews to make it efficient for our
20 administration of the exam, you're probably talking
21 about a few thousand more examinations because they
22 train together and are in crews. So, you may end up
23 examining some individuals more than once just in
24 order to be able to go through the process.

25 MR. PARLER: Mr. Chairman, the specific

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1 questions you asked me that was addressed to Section
2 306, I'm not going to change my answer, but I just
3 want to elaborate briefly. Section 306 does talk
4 about the NRC's requirements for the administration of
5 requalification exams, et cetera, but it doesn't say
6 that that is the only way that the NRC can go about
7 licensing operators. So, I would like for the record
8 to show that also.

9 COMMISSIONER CURTISS: Could I just follow
10 up on that question because this provision has been
11 the subject, of course, of a lot of litigation over
12 the last several years and, of course, just recently
13 with the decision of the court. I agree that 306
14 itself would permit the kind of approach that you have
15 in mind here subject, of course, as Mr. Parler
16 indicated, to seeing the details of what it looks
17 like. It might be worthwhile given the litigation
18 that's gone on and the arguments that we've made in
19 the court and the assurances that we provided in the
20 context of the challenge to the training aspect of
21 that provision, for there to be a review of the record
22 to just ensure that in the assurances that we have
23 provided to the court on what we do in areas other
24 than the training that was directly challenged, like
25 requal. exams and simulator exams --

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1 MR. PARLER: No, we would do that as a
2 part of our thorough review. The focus of the earlier
3 litigation was, of course, on the agency relying on a
4 policy statement, I believe, rather than putting out
5 a regulation. But we will indeed take that suggestion
6 as a very good one and we'll do just what you suggest.

7 MR. RUSSELL: We're also identifying
8 conceptually what a rule would look like. We need to
9 go through the proposed rule, rulemaking, public
10 comment process as well and that's the only approval
11 we're looking for today is essentially -- it's to
12 inform you that this is something we're embarking on
13 and to give you a feel for what kind of a schedule we
14 may be on.

15 There would be two sections that we would
16 propose to amend, the one which requires the passing
17 of an NRC-administered exam in order to renew a
18 license. That would be amended to make that an option
19 on the part of the NRC essentially for cause based
20 upon either inspection results or the program being
21 unsatisfactory. The second point is that we would
22 propose to amend the regulations such that the utility
23 would submit the operating test and the biannual
24 written examinations to the NRC. This, we believe, is
25 necessary to provide oversight of the examination

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1 process as it's conducted by the facility licensee, to
2 improve the quality of the exam banks that the
3 licensees maintained, to see if scenarios that are
4 being used are consistent with the policy statements
5 that we -- excuse me, the guidance which we are going
6 to put out in the examiner standards, and to see if
7 the examination scenarios are being repeated.

8 We would expect that these would be
9 submitted to the regions with appropriate protection
10 such that there would not be disclosure prior to the
11 examination. So there would be a limited number of
12 copies provided to the region.

13 COMMISSIONER REMICK: And this would be
14 prior to the examination, not the individual exam
15 results? In other words --

16 MR. RUSSELL: No, that is correct. This
17 would be the examination which the utility would
18 propose to administer which is required under the
19 regulations that they do for each licensed operator
20 annually for an operating test and biannually for a
21 comprehensive written examination. So, this would be
22 our oversight of how they are conducting that portion
23 of it and this would be the trigger that would allow
24 us to go into our revised inspection program.

25 COMMISSIONER REMICK: Are you going to

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1 address --

2 MR. RUSSELL: That's what I'm going to
3 cover next.

4 COMMISSIONER REMICK: -- somewhere then
5 the checking on the grading that you would do
6 occasionally?

7 MR. RUSSELL: Yes. I will cover that in
8 just a moment.

9 COMMISSIONER REMICK: All right.

10 MR. RUSSELL: (Slide) Slide number 8,
11 please.

12 I'd like to address eligibility and scope
13 of the inspection program. First, eligibility. We
14 would require that the program status be satisfactory
15 so that we would use this process to make judgments as
16 to whether the facility had a satisfactory or did not
17 have a satisfactory requalification program. In
18 addition, we would consider past experience, SALP
19 results, operating events or related inspection
20 findings in determining the scope of the actual
21 inspection activities to be conducted.

22 We would propose a phased review with the
23 first portion being in-office review, as I had
24 mentioned. That is the audit of selected
25 examinations. We review those examinations against

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1 the criteria in the examiner standards and we would
2 provide feedback to the licensees based upon those
3 which we had reviewed or where we had found
4 weaknesses. It would also include field observations
5 of the conduct of the program at least once each SALP
6 cycle with observation of the examinations being
7 administered by the facility with parallel grading as
8 is currently called for in the examiner standards.

9 There would also be a review on a case by
10 case basis of the training which is done as a part of
11 the requalification program prior to the
12 administration of the examinations. Where that
13 training evaluation is done, we would use the systems
14 approach to training which we discussed before.

15 We would also monitor the results with
16 time. In other words, if we do observations and we
17 see that the programs are declining or if there is a
18 question about the quality of the requalification
19 training program, we would maintain as an option to go
20 in on short notice to conduct an operational
21 evaluation. This is very similar to the type of
22 evaluation that's done if a program is deemed to be
23 unsatisfactory which is used by the regional
24 administrator to make a judgment as to whether the
25 facility should be permitted to continue to operate

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1 while they remediate the program or not.

2 If we observe declining performance or for
3 other reasons that we would lay out in the examiner
4 standards and the inspection programs we chose to, we
5 would administer for cause NRC examinations in a
6 manner similar to what we do today. We would also, in
7 that case, follow the Commission guidance which we had
8 received to document the weaknesses, confirm that with
9 a confirmation of action letter and conclude that the
10 program was unsatisfactory until those actions had
11 been completed and the CAL released by the regional
12 administrator, at which time the program would be
13 deemed provisionally satisfactory.

14 The major advantage of this program, we
15 believe, is that we can inspect more exams being
16 administered than we can administer ourselves. That
17 is, it's easier to observe someone else doing it than
18 it is to conduct the exam. We believe that the staff
19 can be proactive and we can find the problems earlier.
20 We believe that this shifts the responsibility for
21 evaluating individuals to licensees where we believe
22 it belongs as they evaluate other employees that are
23 responsible for carrying out activities under the
24 terms of the facility license.

25 We feel that this gives the focus of the

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1 staff efforts on evaluating facility licensee
2 performance rather than individual performance. And
3 as I mentioned, we believe that this will have overall
4 resource savings in a budget context.

5 COMMISSIONER ROGERS: Before you move on,
6 Bill, in SECY-92-100, you described the inspection
7 plan and said that it would include three actions and
8 now you've talked about those. But it seemed to me
9 that what you were saying with respect to the review
10 of the operational performance by conducting an
11 inspection of the facility or administering an NRC-
12 developed requal exam, you would only do that if you
13 saw some problems with --

14 MR. RUSSELL: We would expect --

15 COMMISSIONER ROGERS: Those three points
16 would not always be followed.

17 MR. RUSSELL: They would be hierarchically
18 related. That is, we would do audits of all exams.
19 We would, as a minimum, observe the administration of
20 exams at the facility. We may choose to increase that
21 to doing a training inspection or we may choose to
22 increase that to conducting our own examination. But
23 our own examination would be for cause based upon
24 something we had observed.

25 COMMISSIONER ROGERS: Good.

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1 MR. RUSSELL: So, it would escalate based
2 upon what we had found.

3 COMMISSIONER ROGERS: I didn't pick that
4 up in the SECY part.

5 COMMISSIONER CURTISS: Just to clarify,
6 you'll audit all the exams or you will receive all the
7 exams and audit --

8 MR. RUSSELL: We will receive all the
9 exams and audit selected ones on a sample basis such
10 that we have at least audited some for each facility
11 each cycle, but not necessarily review all.

12 That completes the discussion on the
13 proposed rulemaking activities and the direction of
14 the program. What I'd like to do now is have Jack Roe
15 discuss what was done to review simulator scenario
16 complexity.

17 MR. ROE: The complexity of simulator
18 scenarios has been a concern of the industries for
19 several years. The industry has, as you're aware,
20 called some of our scenarios crash and burn or
21 doomsday scenarios. As Doctor Murley has discussed,
22 the focus of this issue is in the use of the emergency
23 operating procedures during the simulator examination.
24 To address the concern of the industry, we have done
25 two major things. First, we have taken and developed

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1 improved guidance on the construction of the
2 scenarios, including specific guidance on the use of
3 EOPs. Second, we have obtained agreement from senior
4 NRC management that the guidance is reasonable. We
5 did that by running several scenarios at the technical
6 training center.

7 Our current guidance that is in place now,
8 what we propose to replace, is contained in our
9 examiner standard 604. It provides qualitative
10 guidelines for the development of these scenarios. It
11 has a checklist which prompts the reviewer to check
12 attributes such as the complexity and adequate
13 procedure use. The reviewer's conclusions are based
14 largely on the professional judgment since the
15 guidance lacks sufficient detail.

16 While the current guidance gives several
17 qualitative attributes that should be presented in a
18 good scenario, it does not give quantitative measures
19 of these attributes to promote consistency among
20 examiners. Also, consistency among the developers of
21 scenarios which would be from utility to utility.

22 The checklist addressed the critical tasks
23 that should be conducted and certain attributes of
24 those critical tasks and they also address the
25 technical specifications and procedures that should be

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1 used. This guidance has been in place since June of
2 1990.

3 (Slide) Let me have the next viewgraph.

4 The NRC staff, our examiners and facility
5 licensees have expressed concerns regarding the
6 consistency of scenario examinations. In '91, our
7 operator licensing branch responded to these
8 criticisms by conducting the study of selected
9 simulator scenarios for their content, their adherence
10 to the examiner standards and their consistency across
11 the regions. The results were presented to the
12 Commission in SECY-91-279. The panel of six certified
13 examiners reviewed these 66 scenarios selected. They
14 were administered from June of '90 to '91 for
15 consistency in the areas of the individual scenario
16 critical tasks that would meet the standards, the
17 number and sequencing of malfunctions during the
18 scenario, the number of abnormal and events used and
19 the number of EOPs and the total time of EOP usage.

20 We found from this review that the
21 simulator scenarios did vary widely in scope and
22 complexity. From a review we found that generally the
23 variation was not a regional influence but one that
24 was established by the utility. However, we cannot
25 discount the fact that there is some regional

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1 influence. Most important, we found that there was
2 not sufficient guidance to provide consistency from
3 the developers at the utility and from the NRC
4 examiners. So, we undertook the program to improve
5 that guidance.

6 As a result, we requested the support of
7 the industry and NUMARC did some forward to provide us
8 support and provided us some examples that they
9 thought were appropriate for this guidance and
10 provided this document. We built upon that particular
11 document. Staff has now a revised scenario guidance
12 that identifies both qualitative and quantitative
13 attributes.

14 I would like to highlight some of those
15 attributes. First, the qualitative attributes. We
16 addressed realism and credibility. We stressed that
17 the event should be initiated in a logical manner with
18 the proper linkage throughout of the sequence of major
19 events.

20 The sequence of events. In this area we
21 stressed the importance of the timing and the pace of
22 the events to achieve the desired crew responses.
23 Time compression is allowed within our scenarios to
24 speed up the response of key parameters, but it should
25 not preclude the crew from performing the tasks

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1 typically performed during the time compression. The
2 crews should be informed that time compression is
3 being used. We use time compression simply to shorten
4 the time that the candidates are in the simulator. In
5 certain circumstances, if we allowed it to go its
6 normal course, it would be a significant period of
7 time until they took actions and here we see that
8 there would be the undue stress that would applied to
9 the situation and we would remove stress by actually
10 using time compression.

11 Simulator modeling. We stress here that
12 there should not be changes made by the examination
13 team to the basic thermal hydraulic model of the
14 facility simulator and that if changes are needed to
15 make the scenario work properly, that it should be by
16 inserting malfunctions or taking other actions.

17 In the area of evaluating crew competence,
18 we stressed that each scenario should enable the
19 examination team to evaluate the crew performance for
20 all of the rating factors that we have and be sure
21 that it's a comprehensive approach.

22 The most important thing we've added
23 though are the quantitative attributes. As Bill said,
24 these sort of provide a boundary or speed limit. Each
25 one of these particular ones which I will highlight do

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1 have a range. We have a range for each one of our
2 scenarios and a range for our scenario set. Generally
3 we will conduct two scenarios for each one of the
4 crews.

5 For example, total malfunctions, number of
6 instrument and component malfunctions used to initiate
7 the events on a particular scenario set. Our range is
8 four to eight per scenario and ten to 14 for the set
9 of two scenarios. Then we will address the
10 malfunctions occurring while the crew performs the
11 EOPs. This gives a characterization of the difficulty
12 of that particular scenario. We have ranges for that,
13 as I have said, for all of them.

14 We address abnormal events, major
15 transients, the EOPs used, how many EOPs are used in
16 here. We have addressed the range of one to three per
17 scenario and three to five per scenario set. We also
18 address the number of EOP contingency procedures used.

19 Then we address the simulator run time and
20 we believe that we should have a simulator that is
21 designed, the time, for approximately 45 to 60 minutes
22 but generally not to exceed 90 minutes. We also have
23 the EOP run time as part of our criteria. Here we see
24 that this is strongly related to the complexity of the
25 scenario and in general the range is 40 to 70 percent

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1 of the time should be spent in EOPs.

2 Also, we look at the crew critical task
3 which is to be looked at as a balance between fairly
4 simplistic but safety-significant tasks and tasks that
5 require a higher degree of skill level and involve
6 several crew members and we have a range for that. We
7 provide examples in our guidance that are those that
8 we have run and had validated by the senior managers.

9 But the most important part of this
10 guidance is what Bill has related to, that it has a
11 provision for a senior manager at that facility to
12 sign onto the security agreement, to review these
13 scenarios and to see them run and, if that manager
14 disagrees with the complexity of these scenarios, they
15 have the option of bringing that to the attention of
16 the NRC and resolve it prior to the exam being
17 conducted.

18 COMMISSIONER REMICK: Excuse me just a
19 minute, Jack. I don't want to interrupt what you're
20 presenting here, but it's at a point and I'm at a
21 point now in knowing before and after possible changes
22 to Part 55, what you've just said about that, would
23 that apply both before and after?

24 MR. ROE: Yes.

25 COMMISSIONER REMICK: Okay. But when

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1 would these scenarios be used after the proposed
2 change to Part 55?

3 MR. ROE: We would assume that after we
4 made the change to Part 55 to take us out of the
5 individual examinations that the facilities would use
6 this guidance to develop their scenarios.

7 COMMISSIONER REMICK: Their's, okay.

8 MR. ROE: And that we would use this
9 guidance to review the scenarios that they submitted
10 that we've had -- the amendment, the regulations.

11 MR. RUSSELL: But the earlier element,
12 that is resolving the dispute regarding the degree of
13 difficulty of the scenario prior to the exam being
14 administered, that's something we would propose to do
15 in the very near term and there nothing that would
16 preclude senior manager and executive from signing
17 onto a security agreement now, today. In fact, there
18 were a number of cases where we recommended they do
19 that because of concerns about the program and resolve
20 those issues prior to the examination being
21 administered rather than after the exam is
22 administered and they have failures, then saying "It's
23 too hard a scenario." I'd like to get that issue
24 resolved before they're administered.

25 COMMISSIONER REMICK: Just for my

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1 understanding now, that signing the security
2 agreement, that would no longer be needed if the
3 change to Part 55 went into effect?

4 MR. RUSSELL: If it were still an NRC
5 examination, we would still have the security
6 agreements for those who are participating with the
7 staff in developing the exam under the current rules
8 we have today.

9 COMMISSIONER REMICK: When I read the
10 SECY, I got confused what's before and what's after
11 and I'm just trying to clarify. Okay.

12 MR. ROE: We really believe that these
13 particular scenarios can only be understood if they're
14 observed and a picture is really worth a thousand
15 words. To validate the guidance and to determine that
16 the complexity was at the appropriate level we had the
17 NRC senior managers review the guidance and review the
18 guidance in the context of viewing scenarios that met
19 the guidance.

20 On February 20th of 1992, we conducted
21 this review at the Technical Training Center in
22 Chattanooga, taking advantage of their PWR and BWR
23 scenarios. Attendees were the Deputy Executive
24 Director for Reactor Regulation, Regional Operations
25 and Research, the five regional administrators, the

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1 Associate Director for Projects from NRR, the
2 Associate Director for Inspection and Technical
3 Assessment from NRR, the Deputy Director of AEOD, and
4 several other senior NRC managers from AEOD and NRR.

5 The attendees were briefed on the
6 development and administration of the dynamic
7 simulator scenarios. Four scenarios were run on the
8 Technical Training Center Simulators. We had two PWR
9 scenarios, one loss of heat sink and another a LOCA
10 with cold leg recirculation and two BWR scenarios, a
11 loss of off-site power with a LOCA and power
12 oscillations with an ATWS. The senior managers
13 reviewed these. They discussed the scenarios and they
14 came to an evaluation at the end that the staff's
15 revised guidance to evaluate these scenarios was
16 appropriate and the scenarios themselves were
17 appropriate.

18 The senior managers did recommend some
19 revisions to the guidance and the scenarios, which
20 have been made and have been published in --

21 COMMISSIONER REMICK: Jack, I can't resist
22 at this point because I've heard so many comments in
23 traveling around and apparently other Commissioners
24 did too about the difficulty of scenarios being
25 unrealistic and so forth. I don't want to say one way

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1 or the other, but when I read that in the SECY I
2 couldn't help but ask myself how many of those senior
3 managers have ever been licensed operators.

4 MR. RUSSELL: Some of them were. One that
5 I spent quite a bit of time with was licensed on a
6 number of facilities and was quite involved with his
7 operator program and felt initially that it was the
8 scenarios that were the problem, later concluded that
9 they had not done a very good job of training and
10 evaluating their operators. And I had the occasion to
11 observe the crews perform after all of the discussion
12 and gnashing of teeth and back and forth and it was a
13 different crew performance. We also had the occasion
14 for the senior resident to be in the control room when
15 they had an actual event and they behaved in the
16 control room for the actual event the way they behaved
17 in the simulator after the training, so there was a
18 significant improvement in the performance of the
19 operators.

20 But it's a mixed bag. Some utility
21 executives comment and they have not seen them run on
22 their simulators to know whether they're more
23 difficult or not.

24 COMMISSIONER REMICK: I don't doubt you,
25 but I assume the answer is that one of the senior

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1 managers had been a licensed operator? Because, I'm
2 still a little concerned about --

3 MR. RUSSELL: At least one, and I believe
4 that several have been.

5 COMMISSIONER REMICK: Okay.

6 DOCTOR MURLEY: Did you mean how many of
7 our NRC senior managers?

8 COMMISSIONER REMICK: The ones who made
9 the determination that the scenarios were appropriate.

10 MR. RUSSELL: Oh, excuse me.

11 COMMISSIONER REMICK: Have actually been
12 licensed operators. I say that respectfully.

13 MR. ROE: Navy background operators.

14 MR. RUSSELL: There are a number that were
15 licensed in the Navy program.

16 MR. ROE: But none of them that I know
17 that hold commercial nuclear power plant licenses.

18 COMMISSIONER REMICK: None, therefore,
19 have gone through this type of requalification program
20 and simulator scenarios and so forth.

21 MR. ROE: Some of the people working on
22 the project here at the NRC are subject matter experts
23 that are -- that do have or have held reactor operator
24 and senior reactor operator licenses --

25 DOCTOR MURLEY: Are you suggesting that

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1 disqualifies us from making these kinds of --

2 COMMISSIONER REMICK: No, no. As I say,
3 I say it respectfully, but I couldn't resist because
4 I've heard so many times this allegation that they're
5 unrealistic, they're crash and burn and so forth, and
6 it just seemed to be -- well, I couldn't help but
7 question.

8 MR. TAYLOR: That's this introduction of
9 a senior manager from the utility. He was
10 experiencing ops, been given the opportunity.

11 COMMISSIONER REMICK: Assuming he's gone
12 through the process.

13 MR. TAYLOR: We haven't ignored his
14 complaints.

15 MR. ROE: One thing that we should
16 highlight is during the development of this
17 examination there is generally at least one senior
18 reactor operator from the facility on the examination
19 team. Sometimes there are more than one. There will
20 be one from operations, which is -- I think in every
21 case we've had one from the operations department, but
22 sometimes we will have one from the training
23 department also be part of the team. The only
24 constriction is that both of those people, once they
25 start working on the examination to be administered by

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1 the NRC, have to sign a security agreement, cannot
2 divulge any information. So, we try at that
3 particular point.

4 But, this one was to validate I think the
5 expectations of NRC's senior management. We had
6 developed this at the staff level using our subject
7 matter experts which several of them had operating
8 experience, had held reactor operator and senior
9 reactor operator licenses, and they felt it was
10 appropriate. We need to bring it all the way up to be
11 sure that our senior management felt that it was
12 appropriate and we did get --

13 COMMISSIONER REMICK: And I think that's
14 good. I really do.

15 MR. TAYLOR: I think they put the
16 judgement of appropriateness in, see. That was the
17 idea, get everybody who faces this across the regions
18 and involved from here and was this the appropriate
19 level of difficulty.

20 MR. ROE: I think we would have been
21 concerned if there had been a controversy that came
22 out of this. Going into it, we had some interest in
23 it and when we came out of it we felt that we had
24 validated that this was the appropriate level,
25 especially since we had improved the guidance.

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1 MR. TAYLOR: There were just a few
2 comments, weren't there?

3 MR. ROE: There were a few comments. Some
4 of them were very good comments that I think will
5 improve the process. I think if you see the before
6 and after that we've provided to you of the ones that
7 were run in the simulator and then the ones that we
8 would run with the changes that were provided from
9 comments made by the senior managers.

10 We do have a next step, though, with
11 respect to this. We are now in the process of
12 disseminating this guidance. We are planning public
13 meetings with the industry. We will discuss this
14 specifically with the NUMARC organization at the end
15 of this month. Bob Gallo will be providing a
16 discussion to the annual meeting of the Professional
17 Reactor Operators Society. We will be briefing our
18 own examiners at our annual training conference which
19 is going to be held the week of June 15th. And, of
20 course, as Bill has remarked, this will be part of the
21 change to examiner standard number 7 and it will have
22 this new guidance and it will go out for public
23 comment before we finally implement it.

24 That's the conclusion on my remarks on the
25 complexity of dynamic simulators.

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1 DOCTOR MURLEY: Could I make a point?
2 It's a concern that I have. It's a serious concern
3 with regard to this scenario question. That is every
4 once in awhile there's an issue that comes up that
5 gets the industry concerned and it kind of builds on
6 itself and it mushrooms to the point where it takes on
7 a life of its own. I think this requal program and
8 the scenario question is one of those issues that
9 could happen like this.

10 About a year ago, after a requal program
11 was found to be unsatisfactory, the senior vice
12 president of the utility came in to see me with a
13 senior representative of the utility industry group
14 and sat in my office and essentially said that this
15 program is all fouled up, that the NRC is fouled up
16 and he threatened, in effect, an industry jihad
17 against the staff's requal program. It was a very
18 tense confrontation. I agreed that we would look into
19 it. In fact, Bill Russell and the regional
20 administrator spent several weeks personally looking
21 into the circumstances surrounding that failure. They
22 found just exactly the opposite, in fact that the
23 utility had not prepared its people for this exam.
24 They should have known. They had actually not done
25 simulator training in preparation for their requal

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1 exam. Almost everything was wrong. Yet here was this
2 executive who was convinced that we were all goofed up
3 and he was talking to his other colleagues.

4 The concern I have is that if this becomes
5 widespread that this program is screwed up and that
6 the simulator scenarios are bad, then that's sending
7 a message to the operators that if they fail or do
8 poorly it's not their fault, it's the NRC's fault. I
9 think that is a -- I don't know if it's widespread,
10 but I know it's out there, that feeling. I think that
11 is dangerous. Insofar as the Commission can help, I
12 think that we're giving valid tests and we're doing
13 everything we can to make sure that they're valid
14 tests. Insofar as the Commission can satisfy itself
15 that that's the case and can help us when you're out
16 there, I would encourage whatever can be done because
17 I think it is -- as I said, I'm very concerned about
18 this widespread view that is out there, that our
19 program is not valid. Insofar as that gives aid and
20 comfort to the people that don't want to study and
21 pass the requal exams, I think that's a concern.

22 MR. TAYLOR: I think passing on the
23 proposed changes of passing more of the work into the
24 utility itself and then we being the evaluative
25 judgment puts us in a lot better position. Then it

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1 becomes their product. Of course we're going to have
2 something to say about it. But I believe that also
3 will help to diminish some of this separate -- "Well,
4 you're really giving outrageous scenarios or things
5 that go beyond what would be expected."

6 That's part of it. I believe this is
7 putting a responsibility -- that's why I think these
8 changes -- we've been working with this program for a
9 number of years and I think there have been
10 incremental steps. I think the forthcoming proposals,
11 if they're acceptable to the Commission, will give us
12 another step up and put the utilities much more firmly
13 in the driver's --

14 We've been finding out the program
15 failures by looking at the individual problems. I
16 think that point was made several times. Better that
17 we examine -- our changes would give us a lot earlier
18 warning of a program in trouble. I think our people
19 being out there looking at it in advance, if they're
20 running short on EOP and those types of procedures,
21 we'll spot it before anybody gets examined.

22 Do you agree, Jack?

23 MR. ROE: Yes, I do agree.

24 COMMISSIONER ROGERS: Just in how you
25 might do that, on that subject, about a year or so ago

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1 I heard a little presentation by one of the outfits
2 that's involved with human cognitive reliability
3 studies. It didn't seem to be anything very
4 mysterious but very systematic, very controlled and
5 very systematic and looked to me to be a very
6 interesting way of picking up individual operator
7 deficiencies when embedded in the midst of a well
8 performing team, which is the tricky thing to do, of
9 course. The thing that I found very impressive about
10 it was that no one identified this individual at the
11 outset. It was really through a quantitative study
12 that they actually began to see how there was one
13 individual on one of three or four teams or six teams
14 that they were looking at that actually was slowing
15 things down and turn out ultimately to be a really
16 weak link in the chain, although not obvious to
17 inspectors watching the crew performance, not obvious
18 at all. It was only by actually doing time study
19 measurements that this kind of thing turned up.

20 So, it was a technique that looked to me
21 to have great power, something that perhaps the
22 utilities themselves would be the best ones to try to
23 use rather than NRC. But programs of that sort of
24 their own might turn up situations that otherwise were
25 not very apparent.

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1 The Chairman has had to leave, so he's
2 left me to wind the meeting up.

3 Commissioner Curtiss, do you have --

4 COMMISSIONER CURTISS: I don't have any
5 additional questions, but I did have a couple comments
6 and observations, focusing on the order in which you
7 presented the issues.

8 I think your proposed approach to crew-
9 based evaluations of performance is a sound one. In
10 fact, I've long been supportive of that with the
11 caveat that if sufficient safeguards are in place to
12 ensure that the constitution of the crew question
13 doesn't become unmanageable or unacceptable, and I've
14 listened carefully and am satisfied that you focus on
15 that issue and that the safeguards are in place to
16 ensure the proper constitution, that that's a
17 reasonable approach and I think we ought to get on
18 with it and, as you propose, allow those who
19 voluntarily want to adopt that approach to move in
20 that direction and eventually require that as part of
21 the examiner standards.

22 On the broader changes to the program, I
23 guess I came into this meeting somewhat skeptical of
24 what you were proposing under the general observation
25 that if it ain't broke, don't fix it. This particular

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1 area is, in my view, the one area, perhaps more so
2 than any other, where we've made tremendous strides
3 since TMI in the work that's been done and the
4 training of the operators and the people who operate
5 the plant and requal program and so forth, really
6 notwithstanding the common complaints that we've heard
7 and recognizing that improvements have been made over
8 time.

9 I've been impressed by the performance
10 here, by the presentation of the approach that you've
11 laid out. It seems to me that a lot of thought has
12 gone into the approach. It has a lot of advantages
13 that commend it in terms of approach that we ought to
14 consider. So, I go away from this meeting somewhat
15 positively disposed to the approach that you have in
16 mind, at least conceptually at this point.

17 Recognizing that the next step would be
18 for you to develop a proposed rule, there are three or
19 four areas that I'll just tick off, each of which I've
20 commented on throughout where when you come back with
21 the proposed rule additional amplification might be
22 helpful.

23 As I indicated, I think the most important
24 aspect of this is what you intend to do in terms of
25 the nature of the inspection process because we are

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1 talking about moving back from individual evaluations
2 and placing a great deal of weight on the inspection
3 process itself and not just within the four corners of
4 what you have in mind here, but also in terms of
5 integrating things like the SALP inspection process.
6 We talked about the EOP inspections that have been
7 done, how you integrate those into the overall program
8 and further embellishment on just exactly what you
9 intend with the inspection process and how you intend
10 to bring it into a coherent approach. Under this
11 approach, I think it would be helpful.

12 It would be useful if you have access to
13 any sort of quantitative representation of the
14 congruence that has grown over time in two regards
15 between us and the licensees. First, the initial
16 formulation of the exams, the questions that are
17 asked, the kind of simulator scenarios that are
18 conducted, and secondly, in the grading process.

19 Bill, I listened carefully to what you had
20 to say and I have every reason to believe that we are
21 moving towards greater licensee and NRC congruence on
22 both of those fronts. Again, this approach proposes
23 to turn over a lot of that responsibility to the
24 licensees with the audit conducted by the agency and
25 I think it's important to know whether we've reached

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1 the point where there's congruence on those two
2 fronts.

3 Third, you do advance resource advantages
4 to this approach. It would be useful, I think, to see
5 a resource projection of what you have in mind with
6 this approach in terms of the inspections that will be
7 entailed, adding resources in certain areas and
8 perhaps cutting back in others, perhaps a projection
9 out over, say, three or four fiscal years as to what
10 the resource benefits of this approach are compared to
11 what we currently have in place.

12 Fourth and finally, the legal issues that
13 I mentioned for Bill Parler, both in the context of
14 what 306 itself provides as well as what sort of
15 assurances and comments and statements we've made over
16 the course of the litigation over the past three or
17 four years in that context. But as I say, I do come
18 away from this briefing much more favorably disposed
19 to the approach that you've presented here. It seems
20 to me it has significant benefits both for us and the
21 licensee in terms of achieving the objective that we
22 all mutually are trying to achieve.

23 COMMISSIONER ROGERS: Commissioner Remick?

24 COMMISSIONER REMICK: First, Tom, I want
25 to say that in more than one occasion where people

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1 have been in the office, I assumed other Commissioners
2 also, where their training programs have been found to
3 be inadequate have expressed the thought that
4 originally they were very upset and thought the NRC
5 was wrong. But when they got into it and checked,
6 they found some of the things that Bill mentioned,
7 that EOPs had been upgraded and people hadn't been
8 properly changed or the simulator had been upgraded
9 and people hadn't been properly changed and so forth.
10 So, more than one occasion and certainly several
11 occasions people admitted that they had made a mistake
12 and it wasn't fair what they'd done to their own
13 operators. I agree with --

14 DOCTOR MURLEY: I'm glad to hear that.

15 COMMISSIONER REMICK: -- with what you're
16 saying.

17 I don't know if you were reacting to my
18 question about how many of our own people were
19 licensed operators, but I know I have been a licensee
20 and a licensee's representative throughout most of my
21 life. So, I know wholeheartedly that sometimes what
22 we do around this table or what we do elsewhere in
23 this building, although it makes sense to us, doesn't
24 always make a lot of sense when you're out there, the
25 licensee, and try to live with it. So, I just want

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1 to --

2 DOCTOR MURLEY: Well, that was a specific
3 comment that this individual had used. He had been
4 licensed for years and years and he made it quite
5 clear that he knew what he was talking about and we
6 didn't. It turned out he was wrong.

7 There is still out there, I think, this
8 feeling that the operators are going through some of
9 this training just to pass an NRC exam. They don't
10 think it's important. They don't think it's relevant
11 to operating their plant, but it's some silly thing
12 they've got to do to pass the NRC test, so they'll do
13 it. I think we've got to get rid of that notion.
14 But, believe me, that feeling is out there to some
15 extent.

16 COMMISSIONER REMICK: Well, I can assure
17 you it has always been there.

18 DOCTOR MURLEY: Yes.

19 COMMISSIONER REMICK: Since I was an
20 examiner for 14 years part-time, I can show you that
21 those claims were made 20 years ago for different
22 reasons, but they'll probably always be there.

23 I certainly favor the direction that
24 you're hearing on the crew evaluations. I think it's
25 long overdue that we do return the requalification

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1 exam to the utilities and that we take up and active
2 monitoring role. I think you've laid out a program
3 that from my standpoint makes a lot of sense. I want
4 to pay particular attention to your inspection program
5 because we have to be careful when we do inspection
6 programs that we don't tilt it in directions that are
7 not logical training directions and therefore people
8 are forced to do things to satisfy us and not to
9 safely operate the plant.

10 Even if there wasn't a saving in
11 resources, which I hope that there will be, but even
12 if there weren't, I would still favor it because I
13 think we'd be doing what is more logical for us. I've
14 always been concerned that we can attract and keep
15 people who are active operators. It's very difficult
16 for us to attract those people and to keep them and
17 keep them knowledgeable as an active operator then.
18 I think we'll be doing what is far more logical, that
19 we can do a more thorough job. So, I think it's a
20 very logical progression from my standpoint. So,
21 conceptually I personally think that you're heading in
22 the right direction and I greatly appreciate your
23 effort and the briefing today.

24 COMMISSIONER ROGERS: In one of your SECYs
25 you compared the individual pass rate on the pilot

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1 exams with the historical individual requalification
2 pass rate. I would hope that you would continue to
3 examine that, those data, and provide us with them
4 just to see whether there's any change over time that
5 tells us anything about this program one way or the
6 other, at least suggest questions. That seemed to me
7 to be an interesting comparison and one that was
8 worthwhile continuing into the future, for awhile at
9 any rate as this program develops.

10 Let me just echo what other Commissioners
11 have said here today. I've found this a very
12 interesting and useful explanation of your thinking
13 and progress to date. I think the detailed nature of
14 the questions from the individual Commissioners
15 clearly indicates that we're all very interested in
16 this subject, deeply interested and following it quite
17 closely. So, that, I think, will not change. We'll
18 all be interested as this proceeds along.

19 It is evidence, I think, of a degree of
20 maturity in the system, on the part of the licensees
21 as well as the NRC. The major change in my opinion
22 that came about in this whole business was the one
23 that was taken in 1987 that Doctor Murley referred to,
24 a very comprehensive, very thorough going looking at
25 the whole question of testing from a new professional

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1 perspective. I must say I admired the resolve that
2 NRR had to deal with all the questions and issues that
3 were being developed and simply stop the process and
4 restart it again on a new basis. It's very difficult
5 for this organization to stop anything abruptly or to
6 start anything rapidly.

7 So, I think that that was an admirable
8 action in my view and one that really made a big
9 difference in where we are and this is yet another
10 positive development.

11 With that, I'd like to just thank you all
12 for a very fine collection of presentations and close
13 the meeting.

14 (Whereupon, at 12:28 p.m., the above-
15 entitled matter was concluded.)
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CERTIFICATE OF TRANSCRIBER

This is to certify that the attached events of a meeting
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TITLE OF MEETING: BRIEFING ON STATUS OF LICENSED OPERATOR REQUALIFICATION
PROGRAM AND COMPLEX SIMULATOR SCENARIOS

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: JUNE 2, 1992

were transcribed by me. I further certify that said transcription
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**STATUS BRIEFING ON THE LICENSED
OPERATOR REQUALIFICATION PROGRAM
AND
SIMULATOR SCENARIOS**

June 2, 1992

**Thomas E. Murley
William T. Russell
Jack W. Roe
Robert M. Gallo**

BACKGROUND

- **Pilot program results**
 - **SECY-92-100**
- **Proposed rulemaking**
 - **SECY-92-100**
- **Guidance for developing dynamic simulator scenarios**
 - **SECY-92-154**

PILOT PROGRAM

- **Pilot evaluation method**
 - **Crew evaluation on simulator**
 - **Individual weaknesses**
- **Results**
 - **All crews passed**
 - **Individual weaknesses identified and remediated by licensees**
 - **Need to improve follow-up method for individual weaknesses**

PILOT PROGRAM

(continued)

- **Benefits**
 - **Teamwork**
 - **More realistic measure of operator performance**
 - **Reduce unnecessary stress**

- **Proposal**
 - **Commission approve continued use on volunteer basis**
 - **Incorporate into Examiner Standards with next formal revision**

ENHANCEMENT OF NRC REQUALIFICATION PROGRAM

- **Lessons learned from 15
unsatisfactory programs**
- **Identify program weaknesses
earlier to enhance safety**
- **Monitor licensee evaluation of
operator performance**
 - **Pilot program results**

ENHANCEMENTS

(continued)

- **Allocate NRC resources based on identified weaknesses**

- **Identify weaknesses by inspection**
 - **Training**
 - **Requalification program observation**
 - **Requalification examination**

- **Eliminate requirement for NRC to examine each operator during 6-year license**

RECOMMENDED CHANGES TO 10 CFR PART 55

- **Delete requirement for NRC to examine each operator for license renewal**
- **Add requirement that utility submit annual operating tests and biennial written examinations to NRC**

REVISED INSPECTION PROGRAM

- **Eligibility and scope**
- **NRC in-office reviews**
- **NRC field observations**
- **Monitor results**
- **Advantages**

SCENARIO COMPLEXITY CURRENT GUIDANCE

- **Scenario content**
- **Critical tasks**
- **TS, AOP, EOP coverage**

SIMULATOR SCENARIO COMPLEXITY

- **NRC and industry concerns**
- **NRC evaluation of scenarios found:**
 - **Scenarios varied widely in scope and complexity**
 - **Insufficient guidance to consistently evaluate scenario complexity**

REVISED SCENARIO GUIDANCE

- **Results of staff's scenario review**
- **NUMARC's draft guidelines**
- **Identifies qualitative and quantitative attributes**
- **Provides examples**

NRC SENIOR MANAGER REVIEW

- **Observed scenarios run on TTC simulators**
- **Evaluated scenarios using staff guidance**
- **Scenarios were deemed appropriate**
- **Recommendations were incorporated**

DISSEMINATION OF NEW GUIDANCE

- **Public meetings with industry
(NUMARC and PROS)**
- **NRC examiners conference**
- **Examiner Standards revision
7 will be made available
for public comment**