



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

MAR 19 1987

TO ALL FACILITY LICENSEES

SUBJECT: INFORMATION TRANSMITTAL OF FINAL RULEMAKING  
FOR REVISIONS TO OPERATOR LICENSING -  
10 CFR 55 AND CONFORMING AMENDMENTS  
(Generic Letter No. 87-07)

To provide information about the final revisions to 10 CFR 55, "Operators' Licenses," and their implementation, the Commission is holding a series of public meetings. These meetings will be held as follows:

- A. April 9, 1987 for Region II  
Richard B. Russell Federal Building  
Strom Auditorium, Lower Level  
75 Spring Street, SW  
Atlanta, Georgia  
Point of Contact: Mr. Kenneth E. Brockman  
US Nuclear Regulatory Commission, Region II  
101 Marietta Street, Suite 3100  
Atlanta, GA 30323  
(404) 331-5594
- B. April 14, 1987 for Regions IV and V  
Stouffer Concourse Hotel  
3801 Quebec Street  
Denver, Colorado (Across from Stapleton Airport)  
Points of Contact: Mr. Ralph Cooley  
US Nuclear Regulatory Commission, Region IV  
Parkway Central Plaza Building  
611 Ryan Plaza Drive, Suite 1000  
Arlington, TX 76011  
(817) 860-8147  
  
Mr. Phillip Morrill  
US Nuclear Regulatory Commission, Region V  
1450 Maria Lane, Suite 210  
Walnut Creek, CA 94596  
(415) 943-3740
- C. April 16, 1987 for Region III  
Ramada Hotel O'Hare  
6600 N. Mannheim Road (corner of Higgins)  
Rosemont, Illinois (One mile from O'Hare Airport)  
Phone: (312) 827-5131  
Point of Contact: Mr. Thomas Burdick  
US Nuclear Regulatory Commission, Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137  
(312) 790-5566

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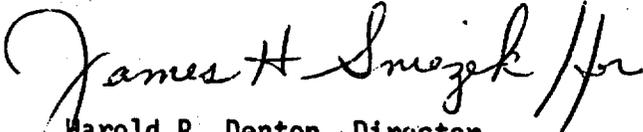
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D. April 20, 1987 for Region I  
Hilton Hotel Valley Forge  
251 West DeKalb Pike  
King of Prussia, Pennsylvania  
Phone: (215) 337-1200  
Point of Contact: Mr. Noel F. Dudley  
US Nuclear Regulatory Commission, Region I  
631 Park Avenue  
King of Prussia, PA 19406  
(215) 337-5211

Enclosed with this letter is a double-spaced copy of the regulations and supporting information for your review prior to the public meeting. You are encouraged to forward questions to the appropriate point-of-contact, one week prior to the date of the meeting which you plan to attend. The staff intends to answer these questions and others during the meetings and will consolidate all questions and answers into a NUREG report after the meeting.

In preparation for these meetings, all licensees should pay special attention to the requirements of Sections 55.31(a) and 55.59(c) regarding both initial and requalification training and the option of substituting an accredited training program for initial and requalification training programs previously approved by NRC. This option may be implemented upon written notification to the NRC and does not require any staff review. However, because of conflicts between previous 10CFR55 Appendix A requirements and a systems approach to requalification training, it is necessary to certify that the substitute training program is both accredited and based upon a systems approach to training. The superseded training program description contained in the FSAR need not be revised until the next update required by 50.71(e).

Sincerely,

  
Harold R. Denton, Director  
Office of Nuclear Reactor Regulation

Enclosure:  
As stated

*(Computer Printout) see packet*

**NUCLEAR REGULATORY COMMISSION**

**10 CFR Parts 50 and 55**

**Operators' Licenses and**

**Conforming Amendments**

**AGENCY:** Nuclear Regulatory Commission.

**ACTION:** Final rule.

**SUMMARY:** The Nuclear Regulatory Commission is amending its regulations to (1) clarify the regulations for issuing licenses to operators and senior operators; (2) revise the requirements and scope of written examinations and operating tests for operators and senior operators, including a requirement for a simulation facility; (3) codify procedures for administering requalification examinations; and (4) describe the form and content for operator license applications. The rule is necessary to meet NRC responsibilities under Section 306 of the Nuclear Waste Policy Act of 1982.

**DATES:**

**Effective Date:** [60 days after Federal Register publication date]

**Public Meeting Dates:** Public meetings will be held to discuss implementation of the requirements of this rule. The meetings will be held as follows:

- A. April 9, 1987 for Region II  
Richard B. Russell Federal Building  
Strom Auditorium, Lower Level  
75 Spring Street, SW  
Atlanta, Georgia  
Point of Contact: Mr. Kenneth E. Brockman  
US Nuclear Regulatory Commission, Region II  
101 Marietta Street, Suite 3100  
Atlanta, GA 30323  
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Mr. Phillip Morrill  
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US Nuclear Regulatory Commission, Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137  
(312) 790-5566
- D. April 20, 1987 for Region I  
Hilton Hotel Valley Forge  
251 West DeKalb Pike  
King of Prussia, Pennsylvania  
Phone: (215) 337-1200  
Point of Contact: Mr. Noel F. Dudley  
US Nuclear Regulatory Commission, Region I  
631 Park Avenue  
King of Prussia, PA 19406  
(215) 337-5211

SUPPLEMENTARY INFORMATION:

I. BACKGROUND

Section 107 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2137), requires the Nuclear Regulatory Commission to prescribe uniform conditions for licensing individuals as operators of production and utilization facilities and to determine the qualifications of these individuals and to issue licenses to such individuals. The regulations implementing these requirements are set out in Part 55 of Title 10, Chapter 1, of the Code of Federal Regulations. To assist licensees and others, the Commission also has issued regulatory guides and generic letters that provide guidance on acceptable methods of meeting these regulatory requirements.

The Commission has become increasingly aware of the need to update its operator licensing regulations and related regulatory guides. These revisions are needed to clarify the extent to which simulators should be used in licensing examinations and to reflect upgraded requirements for licensed operator selection, training, and requalification programs resulting from the accident at TMI-2. Although the Commission has been actively engaged in investigating these matters, the schedule for completing these activities was further accelerated by the enactment on January 7, 1983, of the Nuclear Waste Policy Act of 1982, Pub.L. 97-425. Section 306 of that act (42 U.S.C. 10226, 96 Stat. 2201 at 2262-2263) directs the NRC to establish (1) simulator training requirements for applicants for operator licenses and for operator requalification programs, (2) requirements governing NRC administration of requalification examinations, and (3) requirements for operating tests at civilian nuclear power plant simulators.

ADDRESSES: Background information for the rule that includes a copy of the regulatory analysis, the supporting statement for the Office of Management and Budget clearance of the information collection requirements, Regulatory Guides, ANSI/ANS standards, NUREG-series documents, other documents discussed in this notice, and reports that contain a detailed analysis of the public comments received during the public comment period and their resolution may be examined at the NRC Public Document Room, 1717 H Street, NW., Washington, D.C.

A single copy of the reports concerning public comments may be obtained from Chief, Operator Licensing Branch, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Telephone: 301-492-4868.

FOR FURTHER INFORMATION CONTACT: Chief, Operator Licensing Branch, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Telephone: (301) 492-4868.

On November 26, 1984, the Commission published proposed amendments to 10 CFR 55, "Operators' Licenses" in the Federal Register (49 FR 46428). These amendments proposed granting, in part, a petition for rulemaking (PRM-55-1) that was filed by KMC, Inc. PRM-55-1 is discussed more fully under Section II.B, "Medical Requirements." A 90-day comment period expired on February 25, 1985. Comments were received from 88 respondents. An additional 47 respondents commented on the three associated regulatory guides, also issued for public comment. Reports that contain a detailed analysis of these comments and their resolution are available as indicated under "ADDRESSES:".

These proposed revisions to 10 CFR 55 were to improve the operator licensing process and to achieve the following objectives:

- (1) Improve the safety of nuclear power plant operations by improving the operator licensing process and examination content,
- (2) Provide the NRC with an improved basis for administering operator licensing examinations and conducting operating tests, and
- (3) Respond to the specific direction given by Congress in Section 306, Nuclear Waste Policy Act of 1982, Pub.L. 97-425, to promulgate regulations and guidance in the area of examinations.

On March 20, 1985, the Commission published a Final Policy Statement on Training and Qualification of Nuclear Power Plant Personnel (50 FR 11147) that describes the Commission's current policy regarding training of operators. In addition to this policy statement, the Commission is publishing the new rules

described in this notice; these rules supercede all current regulations for operator licenses. Those facility licensees that have made a commitment that is less than that required by these new rules must conform to the new rules automatically. Those facility licensees that have made a commitment different from or more than that required by these new rules for license amendments and technical specification changes, may apply to the Commission so that they can conform to these new rules. Other changes should be made in accordance with 10 CFR 50.59.

Production facilities previously included in Part 55 are not referenced in the revisions since there are no operators at production facilities currently licensed by the Commission. Although special consideration has been given to the smaller size and scope of test and research reactors the requirements in this notice apply to all utilization facilities licensed under 10 CFR 50, including test and research reactors. Consequently, except where specific wording has been used to note different requirements, these rules apply to test and research reactors.

## II. SUMMARY OF PUBLIC COMMENTS AND FINAL ACTIONS

The proposed amendments to improve the operator licensing process have been modified in response to the comments received. A summary of the public comments and, where appropriate, a description of the changes that resulted from them follows.

## A. General Comments

(1) General purpose of these amendments. Several commenters provided general support for the proposed rule. Other commenters suggested changes to clarify the purpose and exemptions sections. These sections were reworded as a result of the evaluation of these comments. In particular, the purpose of the rule indicates that terms and conditions of operators' licenses and renewal are covered. Exemption for trainees at a facility is clarified to indicate that a trainee is only exempted while participating in an NRC-approved training program to qualify for an operator license. In addition, employees involved in fuel handling are exempt if they are supervised by a licensed senior operator.

(2) Definitions. Many commenters were concerned with the specific definitions in the rule. A number of commenters addressed the definitions of "simulation facility" and "plant-referenced simulator," and requested clarification of the NRC's intent for the use of such devices in the partial conduct of operating tests. Several commenters believed that only plant-referenced simulators would be permitted.

The definition of a "plant-referenced simulator" is intended to mean a simulator that meets all of the requirements of ANSI/ANS 3.5-1985, as endorsed by Regulatory Guide 1.149, "Nuclear Power Plant Simulation Facilities for Use in Operator License Examinations," (see Section V, Regulatory Guides, of this Supplementary Information).

The definition of a "simulation facility" is intended to provide for flexibility in the conduct of the simulator (non-plant-walkthrough) portion of the operating

test. The intent is to permit, under circumstances specified in 10 CFR 55.45 (b), the use of the plant itself, and/or a plant-referenced simulator, and/or some other type of simulation device such as a part-task or basic-principles simulator, for the conduct of the simulator portion of the operating test.

A number of commenters expressed concern that a plant, when used as a simulator, could not safely perform the full range of functions that a simulator could perform, and some commenters requested clarification about the limitation of the conditions under which the plant could be used.

It is not the intent of NRC to permit or encourage the initiation of transients on the plant when and if the plant is used as a simulation facility. The use of the plant is envisioned as a possible approach that a facility licensee might propose to use in conjunction with another simulation device or devices, in lieu of a plant-referenced simulator. This approach might be suitable, for example, for older plants without access to plant-referenced simulators, where manipulations of the plant, to the extent consistent with plant conditions, might be used to demonstrate familiarity with the plant for which the candidate would be licensed.

Several commenters suggested that the definition of "reference plant" should not be specific to a plant and its unit. The word "unit" has been deleted from this definition, although it remains the NRC's intent that a reference plant refer to a specific docket number. For those situations in which a multi-unit plant is composed of units from the same vendor and vintage, it is likely that only one simulation facility would be required. For others, Regulatory Guide 1.149 provides specific guidance for those facility licensees that want

to consider the use of one simulation facility for use at more than one nuclear power plant. This guidance is based upon existing NRC policy on the granting of multiunit operators' licenses.

B. Medical Requirements

(1) Criteria for medical requirements. Most commenters agreed with the revisions to the medical certification process, which would require, for the usual case, a brief certification by the facility licensee on Form NRC-396, as revised. Some commenters questioned the relationship of these requirements to drug and alcohol problems and programs. Other commenters were confused about who would have responsibility for determining the medical condition of an operator or applicant for an operator's license. Some comments were made about the specific language in the medical requirements regarding disqualifying conditions and commenters requested changes or clarification. Many commenters noted the need to adjust the medical requirements to the renewal cycle.

The medical requirements reflect the industry standard articulated in ANSI/ANS 3.4-1983, "Medical Certification and Monitoring of Personnel Requiring Operating Licenses for Nuclear Power Plants."<sup>1</sup> The intent is to prevent the manipulation of the controls by an operator whose medical condition and general health would cause operational errors endangering public health and safety. The medical requirements rely on examination of the applicant or operator by a licensed physician who evaluates the medical condition of the operator, based on the

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<sup>1</sup>Standards discussed in this rule are available for purchase from American Nuclear Society, 555 North Kensington Avenue, La Grange Park, Illinois 60525

criteria of ANSI/ANS 3.4-1983 that is endorsed by Regulatory Guide 1.134, "Medical Evaluation of Licensed Personnel for Nuclear Power Plants," and makes recommendations to the facility's management. The facility's management is responsible for certifying the suitability of the applicant for a license. The NRC has the responsibility for making an assessment of the applicant for a license, including the applicant's medical fitness. Neither the facility nor the NRC staff will make medical judgments. When a conditional license is requested, the NRC will use a qualified medical expert to review the medical evidence submitted by the facility to make a determination. For minor conditions, such as the need to wear corrective lenses or a hearing aid, the Form NRC 396 is modified to simplify the process for obtaining a medically conditioned license. Moreover, while the biennial medical examination required under § 55.21 is intended to detect alcoholism or drug dependency or both, no reference is made in the rule to alcohol or drug problems. These issues are covered in a Policy Statement on Fitness for Duty of Nuclear Power Plant Personnel (51 FR 27921), published on August 4, 1986, by the Commission. In addition, the license renewal period is changed to 6 years to be compatible with the biennial medical examination requirements.

In July 1983, KMC, Inc., petitioned the Commission (PRM-55-1) "to simplify the procedure for the review of the medical status of applicants for operator...licenses." KMC stated that the current procedures require that a detailed medical history and results of the applicant's medical examination by a licensed physician be sent to the Commission. The petitioner requested that the Commission amend its regulations to permit designated medical examiners, as defined in ANSI N546-1976, "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants," to certify that the applicant has

been examined (using the guidance contained in ANSI N546-1976 as endorsed by Regulatory Guide 1.134) and that the applicant's general health and physical condition is not such as may cause operational errors. Under the petitioner's request the use of the current NRC Form 396 would be discontinued for utility operators and detailed medical records would be retained by the licensee's designated medical examiner. Subpart C to Part 55 responds to the KMC, Inc. petition. NRC grants its request, in part, by eliminating the requirement to submit, in usual cases, medical information for an applicant for an operator's license directly to the NRC. Instead, as described above, a certification to NRC about compliance with the health requirements in § 55.33(a)(1) would be made by the facility licensee.

(2) Notification of incapacitation because of disability or illness.

Some confusion was noted by several commenters regarding the process to notify the Commission when an operator was incapacitated because of disability or illness. The final rule is changed to reflect more clearly the Commission's intent. That is, if, during the term of the license, an operator's medical condition changes and does not meet the requirements set forth in ANSI/ANS 3.4-1983, notification of the Commission by the facility licensee is required. At the same time, if the examining physician indicates that the condition can be accommodated as noted in Section 5.1 of ANSI/ANS 3.4-1983, a conditional license may be requested by an authorized representative of the facility licensee. Form NRC 396 must be used and supporting medical evidence must be supplied. However, the facility licensee does not have to wait for permission from the Commission before returning an operator to licensed duties, if the operator has been examined by a physician, who, using ANSI/ANS 3.4-1983 as a basis, has recommended to the facility's management that the operator can return.

(3) Test and research reactors. Many test and research reactor operators were concerned that the requirements in the rule changed the medical requirements for them. The rule changes only the requirements for test and research reactor facility licensees. It does not change the status quo for reactor operators, for whom ANSI/ANS-15.4-1977(N 380), "Selection and Training of Personnel for Research Reactors," requirements continue.

### C. Applications

Applications for an operator license require the facility licensee to certify that there is a need for the applicant to perform assigned duties. Several commenters were concerned that the "need" was not clearly defined. The requirements are intended to simply have the facility licensee's management internally review the need for the license before the application is made. Another concern of many commenters was the relationship between industry-accredited training programs and the details regarding training and experience needed to apply to the NRC on Form NRC-398. In addition, some commenters were concerned with the definition of the phrase "learned to operate." This phrase has been deleted from § 55.31 and replaced by wording which indicates that if a candidate successfully completes the training and experience requirements to be licensed as an operator, the NRC will conduct the appropriate examination and operating test. Section 55.31(a)(5) has been added to specify the minimum number of control manipulations to be conducted by an applicant. Details regarding other training and qualification will not be required to be supplied on Form NRC-398, if these requirements are contained in an NRC-approved training program that uses a simulation facility acceptable to the NRC under § 55.45(b). Subject to continued Commission endorsement of the industry's accreditation process under the

Final Policy Statement on Training and Qualification of Nuclear Power Plant Personnel (50 FR 11147; March 20, 1985), a facility licensee's training program would be approved by being accredited by the National Nuclear Accrediting Board.

D. Written Examinations and Operating Tests

(1) Content. Most commenters recommended that the principal means of determining the knowledge, skills, and abilities to be included in operator licensing written examinations and operating tests should be the learning objectives derived from a systematic analysis of the job performance requirements. These commenters recommended that these learning objectives form the basis and scope of examinations and tests and that other sources of information should only be used until the learning objectives are available for a facility. Conversely, some commenters questioned as premature the endorsement by NRC of a systematic analysis from which to draw the content for licensing examinations and tests. One commenter recommended that NRC issue a document that specifically delineates what an operator is responsible for on NRC examinations and operating tests.

Systematic analysis of job performance requirements is an accepted methodology for deriving licensing examination content. The job-task analyses are being performed as part of the performance-based programs that are being implemented by facility licensees as part of the industry supported accreditation program. The learning objectives derived from these job-task analyses should form the basis for licensing written examinations and operating tests at a facility. Ultimately, the NRC testing objectives will reflect facility licensee-developed learning objectives. In the interim, while these programs are being developed

and reviewed for accreditation, the NRC has activities underway to improve the content validity of NRC examinations and operating tests.

(2) Specific wording of categories. Many commenters made specific wording recommendations for the categories listed under content of the written examinations and operating test. These suggestions were reviewed by subject-matter experts and changes were made to clarify or improve the content categories. No major changes resulted except to two categories under the operating test. Under § 55.45, categories (12) and (13) were reworded as follows:

(12) Demonstrate the knowledge and ability as appropriate to the assigned position to assume the responsibilities associated with the safe operation of the facility.

(13) Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and admendments are not violated.

(3) Waivers. Several commenters suggested that examinations and tests be automatically waived under specific circumstances. As the agency responsible for public health and safety with regard to nuclear facilities, the Commission cannot waive its independent assessment of operators. Waivers are based on operators previously passing all or part of a licensing examination. Details

regarding the processing of waivers are addressed in NUREG-1021, "Operator Licensing Examiner Standards."<sup>2</sup>

(4) Integrity of examinations and tests. Although many commenters supported the addition of § 55.49, "Integrity of Examinations and Tests," they felt that the penalties in § 55.71 were excessive. Other commenters were afraid that any action might be interpreted as cheating and that the role of facility licensees in enforcement was unclear. The NRC always has prosecutorial discretion not to take enforcement action in unclear cases. The language in § 55.71 on criminal violations only covers persons who "willfully violate" the Atomic Energy Act or the NRC's regulations and does not apply to situations such as discussions after an examination is administered or when a previously administered examination is used as a practice examination.

#### E. Simulation Facilities

(1) Application Process Many commenters were concerned with what they termed the burdensome procedure requiring initial and subsequent application for approval to use a simulation facility. Most of these commenters felt that certification by the facility licensee to the NRC that the simulation facility met industry standards should suffice, when combined with the NRC's ability to audit the simulation facility and review the supporting documentation.

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<sup>2</sup>NUREG-series documents are available for public inspection and copying for a fee in the Commission's Public Document Room at 1717 H Street NW., Washington, DC. These documents may be purchased from the U.S. Government Printing Office (GPO) by calling 202-275-2060 or by writing the GPO, P.O. Box 37082, Washington, DC 20013-7082. They may also be purchased from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161.

The Commission has amended the final rule to reflect the position taken in these comments. Any facility licensee that proposes to use a simulation facility that meets the definition of a plant-referenced simulator (essentially a simulator that meets the requirements of ANS-3.5, 1985, "Nuclear Power Plant Simulators for Use in Operator Training," as modified by Regulatory Guide 1.149) will be required only to certify this to the Commission, and to maintain records pertaining to performance testing results for Commission review or audit. Any facility licensee that proposes to use a simulation facility that is other than a plant-referenced simulator will be required to submit a plan detailing how the requirements of § 55.45 will be met on the alternative device or devices, followed by an application for NRC approval for use of the simulation facility. However, in response to the numerous comments received, this application process has been greatly simplified, and the requirement for a periodic "subsequent" application has been eliminated. In support of its certification or its application, as appropriate, each facility licensee will be required to conduct periodic performance tests on its simulation facility, and maintain records pertaining to the conduct of these tests and the results obtained.

It is the Commission's intent that those facility licensees that submit a certification for a simulation facility may immediately begin use of the certified simulation facility for the conduct of operating tests at the reference plant.

(2) Performance Testing. Many comments addressed the requirement for the conduct of a series of performance tests, in which an extensive range of tests would be conducted over a 4-year cycle, 25 percent per year. The industry standard which was in effect at the time of the proposed rulemaking, ANSI/ANS 3.5-1981, required complete simulator performance testing every four years, and R.G. 1.149 endorsed

that requirement. In addition, the R.G. specified that all malfunctions which a simulation facility was capable of performing should be tested to the extent that such malfunctions could be used in the conduct of operating tests. The majority of commenters felt that the burden of conducting these tests would demand an excessive amount of time on the part of the simulation facility as well as the facility licensee's staff. Numerous suggestions were made proposing lists of performance tests thought to be appropriate, suggesting alternative formulas for the cycle of performance testing, or offering suggestions that the rule merely endorse a new version of the industry standard which was in preparation at the time.

A new version of the standard, identified as ANSI/ANS 3.5-1985, was published after the expiration of the public comment period. In response to the comments received and to the newly issued industry standard, R.G. 1.149 has been changed to endorse the new standard, with exceptions, and to include in its endorsement the specific, limited list of malfunction performance tests contained in the standard. However, although the new standard continues to require the conduct of simulator performance tests, it has deleted the requirement that these tests be conducted on a four-year cycle for the life of the simulator. Instead it has substituted an annual operability test, and now requires that performance tests be conducted only upon completion of initial simulator construction and in the event that simulator design changes result in significant simulator configuration or performance variations.

In addition, the standard is silent on the subject of periodic testing of malfunctions. The NRC endorsement of the standard in the R.G. takes exception to

the deletion of periodic performance testing. The regulations will require performance testing to be conducted throughout the life of a simulation facility, on a four-year cycle, at the rate of approximately 25 percent per year.

The protection of public health and safety requires that licensed operators not only be proficient in general operations but be able to safely cope with plant transients and malfunctions. Thus a reactor operator license candidate's response to malfunctions during an operating test is an important factor in the examiner's assessment of that candidate's performance. It is also necessary to avoid misleading or negative training, which could result from the use of a simulation facility which does not correctly portray plant response to malfunctions. Therefore the ability of a simulation facility to faithfully portray plant malfunctions as well as general operability is to be verified by periodic performance testing. Such testing provides assurance that the simulation facility remains acceptable over time and continues to meet the Commission's regulations. A definition of performance testing has been added to § 55.4, and the requirements for performance testing have been clarified in the applicable paragraphs of § 55.45(b), as they apply to all simulation facilities, whether certified or approved.

(3) Schedule. A number of comments included criticism of the time schedules specified as being unreasonably short for submitting a simulation facility plan and for having a simulation facility in full compliance with the regulation.

The regulation has been changed to allow 1 year (versus 120 days) for a facility licensee to submit a plan detailing its approach to the simulation facility requirement; and to allow 4 years (versus 3) for its simulation facility to

be in full compliance with the regulation. Those facility licensees that certify the use of a plant-referenced simulator will not have to submit a plan.

(4) Penalty for unavailability of simulation facility. Several comments expressed concern that the penalty was too harsh for the unavailability of a simulation facility acceptable to the Commission.

It is the Commission's intent that every facility licensee have available a simulation facility that meets the Commission's requirements within a reasonable period of time after the effective date of the rule, and that, once available, the simulation facility be maintained and upgraded, as needed, to continue its acceptability for the conduct of operating tests. The Commission recognizes that unique circumstances may arise on a plant-specific basis that cause some deviation from the time requirements established in the rule and that, from time-to-time, a previously certified or approved simulation facility may become temporarily unacceptable for the conduct of operating tests. It is the Commission's intent to address any such situations on a case-by-case basis.

(5) Lack of guidance for assessment. A number of comments expressed concern that the guidance to be used by the Commission in its assessment of simulation facility adequacy was not yet available. It is the Commission's intent that no simulation facility audits will be conducted until this guidance has been fully developed and made publicly available for a minimum of 6 months.

(6) Applicability to future facility licensees. Several commenters questioned whether the Commission's regulations regarding simulation facilities were intended to apply to future facility licensees.

It is the Commission's intent that these regulations apply to future facility licensees as well as current facility licensees.

(7) Test and research reactor operators. Several test and research reactor operators were concerned that the requirements in the rule changed the licensing process for them. As stated above, the rule does not change the status quo for this category of operator. The definition of "simulation facility" in § 55.4 allows the plant to be used to meet the requirements of § 55.45(b). In addition, specific wording in § 55.45(b) permits test and research reactor facility licensees to be exempted from submitting a plan for the use of a simulation facility that is other than a plant-referenced simulator.

#### F. Licenses

(1) Special Senior Operator Licenses. Many commenters questioned the issuance of special senior licenses. Several argued that current instructor certification requirements were sufficient, others indicated that industry-accredited programs include instructor evaluation, and others cited the Commission's Policy Statement on Training and Qualifications of Nuclear Power Plant Personnel as conflicting with these licenses.

The Commission has deleted the provision for the issuance of special senior operator licenses from the final rule. This action is in recognition of the industry accreditation of training programs, which includes instructor training, qualification and evaluation, and is in keeping with the intent of the Commission Policy Statement on Training and Qualifications of Nuclear Power Plant Personnel. Industry efforts in implementing instructor training, qualification

and evaluation programs will be monitored as described by the Policy Statement. Moreover, senior operator licenses limited to fuel handling will continue to be issued as they are currently. However, since industry accreditation includes instructor evaluation, current NRC instructor certification will not continue at facilities with industry accreditation.

A great number of commenters had specific suggestions regarding the requirements for special senior operators. These comments are no longer applicable since the Commission has deleted these licenses from the final rule.

(2) "Actively performing the functions of an operator or senior operator."

Although only one commenter specifically questioned the definition of "actively performing the [functions] of," a great many commenters questioned this phrase in regard to R.G. 1.8, "Personnel Qualifications and Training for Nuclear Power Plants," as it was published for public comment in conjunction with the proposed rule. From the comments made in response to the regulatory guide and other comments made regarding the provision in the rule under "Requalification," which required that an operator or senior operator be "actively and extensively engaged" as an operator or senior operator, it is clear that many commenters were confused about the degree of participation in plant operations that is required as a condition to maintain an operator's or senior operator's license. To prevent further confusion, the rule has been modified in § 55.4, "Definitions," to provide the following definition:

"Actively performing the functions of an operator or senior operator" means that an individual has a position on the shift crew that requires the individual to be licensed as defined in the facility's

technical specifications, and that the individual carries out and is responsible for the duties covered by that position.

In addition, several commenters were concerned that the requirements were unclear regarding the return to "active" status following a period during which a licensee has not been "actively performing the functions of an operator or senior operator" for a period of 4 months or longer. Therefore, the following requirements have been added:

If an operator has not performed licensed duties on a minimum of seven 8-hour shifts or five 12-hour shifts per quarter, before resumption of activities authorized by a license issued under these regulations, an authorized representative of the facility licensee shall certify that the qualifications and status of the licensee are current and valid, and that the licensee has completed a minimum of 40 hours of shift functions under the direction of the operator or senior operator, as appropriate, and in the position to which the individual licensee will be assigned. For licenses limited to fuel handling, one supervised shift is sufficient. Certification shall be maintained at the facility.

The revision in the wording of the rule was made so that it is no longer necessary to include the wording "actively and extensively engaged" under requalification. A licensee can now maintain licensed status by successfully completing the facility licensee's NRC-approved requalification program and passing the requalification examinations and operating tests. However, to return to

active performance after a period of not participating on shift, the conditions of a license in § 55.53(f) must be met. In this manner, a licensee without current knowledge of the facility would not be able to perform shift duties.

For test and research reactors, the requirements for "actively performing the functions of an operator or senior operator" would be met with a minimum of four hours per calendar quarter. Similarly, under § 55.53(f), a minimum of six hours parallel work would be required to return to active status.

(3) Notification of the Commission. Some commenters noted that the Commission had no need to know about the criminal conviction of a licensee. However, § 55.53(g) is intended to cover criminal behavior. NRC is interested in felonious criminal convictions of a licensee. The NRC considers that there may be a relationship between conviction for a felony and job performance.

#### G. Expiration

Currently, licenses expire after two years. To lessen the paperwork burdens of facility licensees and the NRC, a five year expiration was proposed. Many commenters suggested that the proposed five year expiration and renewal of licenses be adjusted to meet the biennial medical examination requirements. The renewal cycle has been changed and licenses will now expire after 6 years.

#### H. Requalification and Renewal

(1) Requalification program and examination content. A great many commenters were unclear about the relationship of the NRC requalification requirements

and performance-based training programs. Moreover, many commenters urged more flexibility in the requalification cycle and more clarity in the program content requirements.

Although the requirement for NRC approval of requalification programs will remain, the list of content areas under §§ 55.41, 55.43 and 55.45 will be referenced in § 55.59 to clarify the issue of examination and operating test content. In addition, § 55.59(c) content requirements (formerly Appendix A to 10 CFR 55) can be met with a performance-based program for a facility as approved by the NRC. In its Final Policy Statement on Training and Qualification of Nuclear Power Plant Personnel, the Commission endorsed industry-accredited programs as performance based. The frequency of the comprehensive requalification written examination has been changed to a maximum of every 2 years and of the requalification operating test to once a year. The requalification program must be conducted for a continuous period not to exceed 24 months. The specific cycle will be approved by the NRC as part of each facility's training program.

(2) "Actively and extensively engaged." As explained above, many commenters were concerned with the implementation of the provision for "actively and extensively engaged as an operator or senior operator" as it related to renewal. This provision is deleted in the final rule. This action complements the additions §§ 55.53(e) and (f) to "Conditions of Licenses."

(3) Test and research reactors. Several commenters were concerned that the requalification requirements for operators at this class of reactor were changed. The requirements in § 55.59(c)(7) continue the requirements of

former Appendix A to 10 CFR 55 for test and research reactors. No change in requirements is intended.

(4) NRC administration of requalification examinations. Some commenters questioned the NRC administration of requalification examinations. The Commission believes that an NRC administered examination for license renewal provides assurance that an operator or senior operator can operate the controls in a safe and competent manner and that a senior operator can direct the activities of other licensed operators in a safe and competent manner. The Commission also believes that NRC administered examinations provide assurance that facility licensee administered requalification programs are successfully maintaining the proficiency and knowledge of licensed personnel. To this end, the rule requires in §55.57 that each applicant for renewal of a six-year license pass an NRC administered comprehensive requalification written examination and operating test at least once during each six-year license. The NRC will administer these requalification written examinations and operating tests on a random basis so that no operator or senior operator will go longer than six years without being examined by the NRC once a six-year license is issued.

#### I. Modification and Revocation of Licenses

Some comments were received about the Commission's authority to modify and revoke licenses. The Commission has the authority to modify, suspend or revoke a license under the Atomic Energy Act. Moreover, inherent in the Commission's authority to modify, suspend, or revoke a license is its ability to place a licensed operator or senior operator under probation, if warranted.

## J. Editorial

Many commenters had non-substantive editorial changes to suggest. These comments were reviewed by an NRC technical editor and incorporated as appropriate.

## K. Conforming Amendments

A conforming amendment, 10 CFR 50.74, requires the facility licensee to notify the Commission of a change in operator status. This amendment complements § 55.53(g).

## L. Revision to 10 CFR 50.54 and 10 CFR 50.34(b)(8)

Revisions have been made to 10 CFR 50.34(b)(8) and 50.54 to reflect the changes made to 10 CFR Part 55.

### III. REGULATORY ANALYSIS

The regulatory analysis describes the values (benefits) and impacts (costs) of implementing the proposed regulations and guidance for operator licensing. The accuracy of these estimates in the regulatory analysis is limited by the lack of extensive data on human performance improvement associated with an improved licensing process. Where possible, quantitative measures were qualitatively compared to related information from other sources for verification. The full text of the regulatory analysis on these amendments is available for inspection in the NRC Public Document Room, 1717 H Street NW., Washington, DC.

Single copies of the analysis may be obtained from Chief, Operator Licensing Branch, telephone: (301) 492-4868.

#### IV. BACKFIT ANALYSIS

The Commission has determined that these rules are in response to Section 306 of the Nuclear Waste Policy Act of 1982 and, therefore, are exempt from the backfit rule 10 CFR § 50.109 (50 FR 38097).

#### V. REGULATORY GUIDES

Three regulatory guides were published in draft form for public comment in conjunction with the proposed rule. These guides were intended to provide guidance on acceptable methods of implementing the revisions to the regulations. As a result of public comment and additional staff review, these three guides are being issued in final form:

- (1) R.G. 1.134, Revision 2, "Medical Evaluation of Licensed Personnel for Nuclear Power Plants."
- (2) R.G. 1.149, Revision 2, "Nuclear Power Plant Simulation Facilities for Use in Operator License Examinations."
- (3) R.G. 1.8, Revision 2, "Qualification and Training of Personnel for Nuclear Power Plants."

Copies of these guides may be purchased from the Government Printing Office at the current GPO price. Information on current GPO prices may be obtained by contacting the Superintendent of Documents, U.S. Government Printing Office, Post Office Box 37082, Washington, DC 20013-7082, telephone (202)275-2060 or (202)275-2171.

#### VI. ENVIRONMENTAL IMPACT: CATEGORICAL EXCLUSION

The NRC has determined that this regulation is the type of action described in categorical exclusion 10 CFR 51.22(c)(1). Therefore, neither an environmental impact statement nor an environmental assessment has been prepared for this regulation.

#### VII. 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 paperwork requirements were approved by the Office of Management and Budget approval number 3150-0018.

#### VIII. REGULATORY FLEXIBILITY CERTIFICATION

As required by the Regulatory Flexibility Act of 1980, 5 U.S.C. 605(b), the Commission hereby certifies that this rule will not have a significant economic impact on a substantial number of small entities. The conforming amendment to 10 CFR Part 50 and the revision of 10 CFR Part 55 affect primarily the companies that own and operate light-water nuclear power reactors and the vendors of

those reactors. They also affect individuals licensed as operators at these companies. Neither the companies that own and operate reactors nor these individuals fall within the scope of the definition of "small entity" set forth in Section 501(b) of the Regulatory Flexibility Act, NRC's Size Standards adopted December 9, 1985 (50 FR 50241), or the Small Business Size Standards set out in regulations issued by the Small Business Administration in 13 CFR Part 121.

#### IX. LIST OF SUBJECTS

##### 10 CFR Part 50

Antitrust, classified information, fire prevention, incorporation by reference intergovernmental relations, nuclear power plants and reactors, penalty, radiation protection, reactor siting criteria, reporting and recordkeeping requirements.

##### 10 CFR Part 55

Manpower training programs, nuclear power plants and reactors, penalty, reporting and recordkeeping requirements.

The separate views of Commissioners Asselstine and Bernthal follow:

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. 553, the NRC is adopting the following amendments to 10 CFR Part 55 and 10 CFR Part 50.

## PART 55 - OPERATORS' LICENSES

1. 10 CFR Part 55 is revised to read as follows:

### Subpart A -- General Provisions

Sec.

- 55.1 Purpose.
- 55.2 Scope.
- 55.3 License requirements.
- 55.4 Definitions.
- 55.5 Communications.
- 55.6 Interpretations.
- 55.7 Additional requirements.
- 55.8 Information collection requirements: OMB approval.

### Subpart B -- Exemptions

- 55.11 Specific exemptions.
- 55.13 General exemptions.

### Subpart C -- Medical Requirements

- 55.21 Medical examination.
- 55.23 Certification.
- 55.25 Incapacitation because of disability or illness.
- 55.27 Documentation.

### Subpart D -- Applications

- 55.31 How to apply.
- 55.33 Disposition of an initial application.
- 55.35 Re-applications.

### Subpart E -- Written Examinations and Operating Tests

- 55.41 Written examination: Operators.
- 55.43 Written examination: Senior Operators.
- 55.45 Operating tests.
- 55.47 Waiver of examination and test requirements.
- 55.49 Integrity of examinations and tests.

### Subpart F -- Licenses

- 55.51 Issuance of licenses.
- 55.53 Conditions of licenses.
- 55.55 Expiration.
- 55.57 Renewal of licenses.
- 55.59 Requalification.

Subpart G -- Modification and Revocation of Licenses

55.61 Modification and revocation of licenses.

Subpart H -- Enforcement

55.71 Violations.

AUTHORITY: Secs. 107, 161, 182, 68 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).

For the purposes of sec. 223, 68 Stat. 958, as amended (42 U.S.C. 2273) §§ 55.3, 55.21, 55.49 and 55.53 are issued under sec. 161i, 68 Stat. 949, as amended (42 U.S.C. 2201(i)); and §§ 55.23, 55.25 and 55.53(f) are issued under sec. 161o, 88 Stat. 950, as amended (42 U.S.C. 2201(o)).

Subpart A -- General Provisions

§ 55.1 Purpose.

The regulations in this part (a) establish procedures and criteria for the issuance of licenses to operators and senior operators of utilization facilities licensed pursuant to the Atomic Energy Act of 1954, as amended, or section 202 of the Energy Reorganization Act of 1974, as amended, and Part 50 of this chapter, (b) provide for the terms and conditions upon which the Commission will issue or modify these licenses, and (c) provide for the terms and conditions to maintain and renew these licenses.

§ 55.2 Scope.

The regulations in this part apply to --

(a) Any individual who manipulates the controls of any utilization facility licensed pursuant to Part 50 of this chapter, and

(b) Any individual designated by a facility licensee to be responsible for directing any licensed activity of a licensed operator.

§ 55.3 License requirements.

A person must be authorized by a license issued by the Commission to perform the function of an operator or a senior operator as defined in this part.

§ 55.4 Definitions.

As used in this part:

"Act" means the Atomic Energy Act of 1954, including any amendments to the Act.

"Actively performing the functions of an operator or senior operator" means that an individual has a position on the shift crew that requires the individual to be licensed as defined in the facility's technical specifications, and that the individual carries out and is responsible for the duties covered by that position.

"Commission" means the Nuclear Regulatory Commission or its duly authorized representatives.

"Controls" when used with respect to a nuclear reactor means apparatus and mechanisms the manipulation of which directly affects the reactivity or power level of the reactor.

"Facility" means any utilization facility as defined in Part 50 of this chapter. In cases for which a license is issued for operation of two or more facilities, "facility" means all facilities identified in the license.

"Facility licensee" means an applicant for or holder of a license for a facility.

"Licensee" means an individual licensed operator or senior operator.

"Operator" means any individual licensed under this part to manipulate a control of a facility.

"Performance testing" means testing conducted to verify a simulation facility's performance as compared to actual or predicted reference plant performance.

"Physician" means an individual licensed by a State or territory of the United States, the District of Columbia or the Commonwealth of Puerto Rico to dispense drugs in the practice of medicine.

"Plant-referenced simulator" means a simulator modeling the systems of the reference plant with which the operator interfaces in the control room, including operating consoles, and which permits use of the reference plant's procedures. A plant-referenced simulator demonstrates expected plant response to operator input, and to normal, transient, and accident conditions to which the simulator has been designed to respond.

"Reference plant" means the specific nuclear power plant from which a simulation facility's control room configuration, system control arrangement, and design data are derived.

"Senior operator" means any individual licensed under this part to manipulate the controls of a facility and to direct the licensed activities of licensed operators.

"Simulation facility" means one or more of the following components, alone or in combination, used for the partial conduct of operating tests for operators, senior operators, and candidates: (1) the plant, (2) a plant-referenced simulator, (3) another simulation device.

"Systems approach to training" means a training program that includes the following five elements:

- (1) Systematic analysis of the jobs to be performed.
- (2) Learning objectives derived from the analysis which describe desired performance after training.

- (3) Training design and implementation based on the learning objectives.
- (4) Evaluation of trainee mastery of the objectives during training.
- (5) Evaluation and revision of the training based on the performance of trained personnel in the job setting.

"United States," when used in a geographical sense, includes Puerto Rico and all territories and possessions of the United States.

**§ 55.5 Communications.**

(a) Except as provided under a regional licensing program identified in paragraph (b) of this section, an applicant or licensee or facility licensee shall submit any communication or report concerning the regulations in this part and shall submit any application filed under these regulations to the Commission as follows:

- (1) By mail addressed to--Director of Nuclear Reactor Regulation,  
U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, or
  - (2) By delivery in person to the Commission offices at--
    - (i) 1717 H Street NW., Washington, D.C. or
    - (ii) 7920 Norfolk Avenue, Bethesda, Maryland.
- (b) (1) The Director of Nuclear Reactor Regulation has delegated to the Regional Administrators of Regions I, II, III, IV, and V authority

and responsibility pursuant to the regulations in this part for the issuance and renewal of licenses for operators and senior operators of nuclear reactors licensed under 10 CFR Part 50 and located in these regions.

- (2) Any application for a license or license renewal filed under the regulations in this part involving a nuclear reactor licensed under 10 CFR Part 50 and any related inquiry, communication, information, or report must be submitted by mail or in person to the Regional Administrator. The Regional Administrator or the Administrator's designee will transmit to the Director of Nuclear Reactor Regulation any matter that is not within the scope of the Regional Administrator's delegated authority.
- (i) If the nuclear reactor is located in Region I, submission must be made to the Regional Administrator, Region I, U.S. Nuclear Regulatory Commission, 631 Park Avenue, King of Prussia, Pennsylvania 19406.
- (ii) If the nuclear reactor is located in Region II, submission must be made to the Regional Administrator, Region II, U.S. Nuclear Regulatory Commission, 101 Marietta Street, Suite 2900, Atlanta, Georgia 30303.
- (iii) If the nuclear reactor is located in Region III, submission must be made to the Regional Administrator, Region III, U.S. Nuclear Regulatory Commission, 799 Roosevelt Road, Glen Ellyn, Illinois 60137.

- (iv) If the nuclear reactor is located in Region IV, submission must be made to the Regional Administrator, Region IV, U.S. Nuclear Regulatory Commission, 611 Ryan Plaza Drive, Suite 1000, Arlington, Texas 76011.
- (v) If the nuclear reactor is located in Region V, submission must be made to the Regional Administrator, Region V, U.S. Nuclear Regulatory Commission, 1450 Maria Lane, Suite 210, Walnut Creek, California 94596.

**§ 55.6 Interpretations.**

Except as specifically authorized by the Commission in writing, no interpretation of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized to be binding upon the Commission.

**§ 55.7 Additional requirements.**

The Commission may, by rule, regulation, or order, impose upon any licensee such requirements, in addition to those established in the regulations in this part, as it deems appropriate or necessary to protect health and to minimize danger to life or property.

**§ 55.8 Information collection requirements: OMB approval.**

- (a) The Nuclear Regulatory Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB)

for approval as required by the Paperwork Reduction Act of 1980 (44 U.S.C. 3501 et seq.). OMB has approved the information collection requirements contained in this part under control number 3150-0018.

(b) The approved information collection requirements contained in this part appear in §§ 55.45, 55.53, and § 55.59.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

- (1) In §§ 55.23, 55.25, 55.27, 55.31, Form NRC-396 is approved under control number 3150-0024.
- (2) In §§ 55.31, 55.35, 55.47, and 55.57, Form NRC-398 is approved under control number 3150-0090.
- (3) In § 55.45, Form NRC-474 is approved under control number 3150-0138.

#### Subpart B -- Exemptions

##### § 55.11 Specific exemptions.

The Commission may, upon application by an interested person, or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property and are otherwise in the public interest.

**§ 55.13 General exemptions.**

The regulations in this part do not require a license for an individual who --

(a) Under the direction and in the presence of a licensed operator or senior operator, manipulates the controls of --

(1) A research or training reactor as part of the individual's training as a student or

(2) A facility as a part of the individual's training in a facility licensee's training program as approved by the Commission to qualify for an operator license under this part.

(b) Under the direction and in the presence of a licensed senior operator, manipulates the controls of a facility to load or unload the fuel into, out of, or within the reactor vessel.

**Subpart C -- Medical Requirements**

**§ 55.21 Medical examination.**

An applicant for a license shall have a medical examination by a physician.

A licensee shall have a medical examination by a physician every two years.

The physician shall determine that the applicant or licensee meets the requirements of § 55.33(a)(1).

**§ 55.23 Certification.**

To certify the medical fitness of the applicant, an authorized representative of the facility licensee shall complete and sign Form NRC-396, "Certification of Medical Examination by Facility Licensee," available from Publication Services Section, Document Management Branch, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(a) Form NRC-396 must certify that a physician has conducted the medical examination of the applicant as required in § 55.21.

(b) When the certification requests a conditional license based on medical evidence, the medical evidence must be submitted on NRC Form 396 to the Commission and the Commission then makes a determination in accordance with § 55.33.

**§ 55.25 Incapacitation because of disability or illness.**

If, during the term of the license, the licensee develops a physical or mental condition that causes the licensee to fail to meet the requirements of § 55.21 of this part, the facility licensee shall notify the Commission within 30 days of learning of the diagnosis. For conditions for which a conditional license (as described in § 55.33(b) of this part) is requested, the facility licensee shall provide medical certification on Form NRC 396 to the Commission (as described in § 55.23 of this part).

**§ 55.27 Documentation.**

The facility licensee shall document and maintain the results of medical qualifications data, test results, and each operator's or senior operator's medical history for the current license period and provide the documentation to the Commission upon request. The facility licensee shall retain this documentation while an individual performs the functions of an operator or senior operator.

**Subpart D -- Applications**

**§ 55.31 How to apply.**

**(a) The applicant shall:**

- (1) Complete Form NRC-398, "Personal Qualification Statement - Licensee," available from Publication Services Section, Document Management Branch, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, DC 20555;**
- (2) File an original and two copies of Form NRC-398, together with the information required in paragraphs (a)(3), (4), (5) and (6) of this section, with the appropriate Regional Administrator;**
- (3) Submit a written request from an authorized representative of the facility licensee by which the applicant will be employed that the written examination and operating test be administered to the applicant;**

- (4) Provide evidence that the applicant has successfully completed the facility licensee's requirements to be licensed as an operator or senior operator and of the facility licensee's need for an operator or a senior operator to perform assigned duties. An authorized representative of the facility licensee shall certify this evidence on Form NRC-398. This certification must include details of the applicant's qualifications, and details on courses of instruction administered by the facility licensee, and describe the nature of the training received at the facility, and the startup and shutdown experience received. In lieu of these details, the Commission may accept certification that the applicant has successfully completed a Commission-approved training program that is based on a systems approach to training and that uses a simulation facility acceptable to the Commission under § 55.45(b) of this part;
- (5) Provide evidence that the applicant, as a trainee, has successfully manipulated the controls of the facility for which a license is sought. At a minimum, five significant control manipulations must be performed which affect reactivity or power level. For a facility that has not completed preoperational testing and initial startup test program as described in its Final Safety Analysis Report, as amended and approved by the Commission, the Commission may accept evidence of satisfactory performance of simulated control manipulations as part of a Commission-approved training program by a trainee on a simulation facility acceptable to the Commission under § 55.45(b) of this part. For a facility which has (1) completed preoperational testing as described in its Final Safety Analysis Report, as amended and approved by the

Commission, and (2) is in an extended shutdown which precludes manipulation of the control of the facility in the control room, the Commission may process the application and may administer the written examination and operating test required by §§ 55.41 or 55.43 and 55.45 of this part, but may not issue the license until the required evidence of control manipulations is supplied. For licensed operators applying for a senior operator license, certification that the operator has successfully operated the controls of the facility as a licensed operator shall be accepted; and

(6) Provide certification by the facility licensee of medical condition and general health on Form NRC-396, to comply with §§ 55.21, 55.23 and 55.33(a)(1).

(b) The Commission may at any time after the application has been filed, and before the license has expired, require further information under oath or affirmation in order to enable it to determine whether to grant or deny the application or whether to revoke, modify, or suspend the license.

(c) An applicant whose application has been denied because of a medical condition or general health may submit a further medical report at any time as a supplement to the application.

(d) Each application and statement must contain complete and accurate disclosure as to all matters required to be disclosed. The applicant shall sign statements required by paragraphs (a)(1) and (2) of this section.

**§ 55.33 Disposition of an initial application.**

**(a) Requirements for the approval of an initial application.** The Commission will approve an initial application for a license pursuant to the regulations in this part, if it finds that --

**(1) Health.** The applicant's medical condition and general health will not adversely affect the performance of assigned operator job duties or cause operational errors endangering public health and safety. The Commission will base its finding upon the certification by the facility licensee as detailed in § 55.23.

**(2) Written examination and operating test.** The applicant has passed the requisite written examination and operating test in accordance with §§ 55.41 and 55.45 or 55.43 and 55.45. These examinations and tests determine whether the applicant for an operator's license has learned to operate a facility competently and safely, and additionally, in the case of a senior operator, whether the applicant has learned to direct the licensed activities of licensed operators competently and safely.

**(b) Conditional license.** If an applicant's general medical condition does not meet the minimum standards under § 55.33(a)(1) of this part, the Commission may approve the application and include conditions in the license to accommodate the medical defect. The Commission will consider the recommendations and

supporting evidence of the facility licensee and of the examining physician (provided on Form NRC-396) in arriving at its decision.

§ 55.35 Re-applications.

(a) An applicant whose application for a license has been denied because of failure to pass the written examination or operating test, or both, may file a new application two months after the date of denial. The application must be submitted on Form NRC-398 and include a statement signed by an authorized representative of the facility licensee by whom the applicant will be employed that states in detail the extent of the applicant's additional training since the denial and certifies that the applicant is ready for re-examination. An applicant may file a third application six months after the date of denial of the second application, and may file further successive applications two years after the date of denial of each prior application. The applicant shall submit each successive application on Form NRC-398 and include a statement of additional training.

(b) An applicant who has passed either the written examination or operating test and failed the other may request in a new application on Form NRC-398 to be excused from re-examination on the portions of the examination or test which the applicant has passed. The Commission may in its discretion grant the request, if it determines that sufficient justification is presented.

## Subpart E - Written Examinations and Operating Tests

### § 55.41 Written examination: Operators.

(a) Content. The written examination for an operator will contain a representative selection of questions on the knowledge, skills, and abilities needed to perform licensed operator duties. The knowledge, skills, and abilities will be identified, in part, from learning objectives derived from a systematic analysis of licensed operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission.

(b) The written examination for an operator for a facility will include a representative sample from among the following 14 items, to the extent applicable to the facility:

- (1) Fundamentals of reactor theory, including fission process, neutron multiplication, source effects, control rod effects, criticality indications, reactivity coefficients, and poison effects.
- (2) General design features of the core, including core structure, fuel elements, control rods, core instrumentation, and coolant flow.
- (3) Mechanical components and design features of the reactor primary system.

- (4) Secondary coolant and auxiliary systems that affect the facility.
- (5) Facility operating characteristics during steady state and transient conditions, including coolant chemistry, causes and effects of temperature, pressure and reactivity changes, effects of load changes, and operating limitations and reasons for these operating characteristics.
- (6) Design, components, and functions of reactivity control mechanisms and instrumentation.
- (7) Design, components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.
- (8) Components, capacity, and functions of emergency systems.
- (9) Shielding, isolation, and containment design features, including access limitations.
- (10) Administrative, normal, abnormal, and emergency operating procedures for the facility.
- (11) Purpose and operation of radiation monitoring systems, including alarms and survey equipment.

(12) Radiological safety principles and procedures.

(13) Procedures and equipment available for handling and disposal of radioactive materials and effluents.

(14) Principles of heat transfer thermodynamics and fluid mechanics.

**§ 55.43 Written examination: Senior operators.**

(a) **Content.** The written examination for a senior operator will contain a representative selection of questions on the knowledge, skills, and abilities needed to perform licensed senior operator duties. The knowledge, skills, and abilities will be identified, in part, from learning objectives derived from a systematic analysis of licensed senior operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission.

(b) The written examination for a senior operator for a facility will include a representative sample from among the following seven items and the 14 items specified in § 55.41 of this part, to the extent applicable to the facility:

(1) Conditions and limitations in the facility license.

- (2) Facility operating limitations in the technical specifications and their bases.
- (3) Facility licensee procedures required to obtain authority for design and operating changes in the facility.
- (4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.
- (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
- (6) Procedures and limitations involved in initial core loading, alterations in core configuration, control rod programming, and determination of various internal and external effects on core reactivity.
- (7) Fuel handling facilities and procedures.

§ 55.45 Operating tests.

(a) Content. The operating tests administered to applicants for operator and senior operator licenses in accordance with paragraph (b)(1) of this section are generally similar in scope. The content will be identified, in part, from learning objectives derived from a systematic analysis of licensed operator or senior operator duties performed by each facility licensee and contained in its training program and from information in the Final Safety Analysis Report, system

description manuals and operating procedures, facility license and license amendments, Licensee Event Reports, and other materials requested from the facility licensee by the Commission. The operating test, to the extent applicable, requires the applicant to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a representative sample from among the following 13 items:

- (1) Perform pre-startup procedures for the facility, including operation of those controls associated with plant equipment that could affect reactivity.
- (2) Manipulate the console controls as required to operate the facility between shutdown and designated power levels.
- (3) Identify annunciators and condition-indicating signals and perform appropriate remedial action where appropriate.
- (4) Identify the instrumentation systems and the significance of facility instrument readings.
- (5) Observe and safely control the operating behavior characteristics of the facility.
- (6) Perform control manipulations required to obtain desired operating results during normal, abnormal, and emergency situations.

- (7) Safely operate the facility's heat removal systems, including primary coolant, emergency coolant, and decay heat removal systems, and identify the relation of the proper operation of these systems to the operation of the facility.
- (8) Safely operate the facility's auxiliary and emergency systems, including operation of those controls associated with plant equipment that could affect reactivity or the release of radioactive materials to the environment.
- (9) Demonstrate or describe the use and function of the facility's radiation monitoring systems, including fixed radiation monitors and alarms, portable survey instruments, and personnel monitoring equipment.
- (10) Demonstrate knowledge of significant radiation hazards, including permissible levels in excess of those authorized, and ability to perform other procedures to reduce excessive levels of radiation and to guard against personnel exposure.
- (11) Demonstrate knowledge of the emergency plan for the facility, including, as appropriate, the operator's or senior operator's responsibility to decide whether the plan should be executed and the duties under the plan assigned.
- (12) Demonstrate the knowledge and ability as appropriate to the assigned position to assume the responsibilities associated with the safe operation of the facility.

(13) Demonstrate the applicant's ability to function within the control room team as appropriate to the assigned position, in such a way that the facility licensee's procedures are adhered to and that the limitations in its license and amendments are not violated.

(b) Implementation.

(1) Administration - The operating test will be administered in a plant walkthrough and in either --

(i) A simulation facility which the Commission has approved for use after application has been made by the facility licensee, or

(ii) A simulation facility consisting solely of a plant-referenced simulator which has been certified to the Commission by the facility licensee.

(2) Schedule for Facility Licensees

(i) Within one year after the effective date of this part, each facility licensee which proposes to use a simulation facility pursuant to paragraph (b)(1)(i) of this section, except test and research reactors, shall submit a plan by which its simulation facility will be developed and by which an application will be submitted for its use.

- (ii) Those facility licensees which propose to conform with paragraph (b)(1)(i) of this section, not later than 42 months after the effective date of this rule, shall submit an application for use of this simulation facility to the Commission, in accordance with paragraph (b)(4)(i) of this section.
  
- (iii) Those facility licensees which propose to conform with paragraph (b)(1)(ii) of this section, not later than 46 months after the effective date of this rule, shall submit a certification for use of this simulation facility to the Commission on Form NRC-474, "Simulation Facility Certification," available from Publication Services Section, Document Management Branch, Division of Technical Information and Document Control, U.S. Nuclear Regulatory Commission, Washington, DC 20555, in accordance with paragraph (b)(5)(i) of this section.
  
- (iv) The simulation facility portion of the operating test will not be administered on other than a certified or an approved simulation facility after (insert date four years after the effective date of the rule).

**(3) Schedule for Facility Applicants**

- (i) For facility licensee applications after the effective date of this rule, except test and research reactors, the applicant shall submit a plan which identifies whether its simulation

facility will conform with paragraph (b)(1)(i) or (b)(1)(ii) of this section at the time of application.

(ii) Those applicants which propose to conform with paragraph (b)(1)(i) of this section, not later than 180 days before the date when the applicant proposes that the Commission conduct operating tests, shall submit an application for use of its simulation facility to the NRC, in accordance with paragraph (b)(4)(i) of this section.

(iii) Those applicants which propose to conform with paragraph (b)(1)(ii) of this section, not later than 60 days before the date when the applicant proposes that NRC conduct operating tests, shall submit a certification for use of its simulation facility to the Commission on Form NRC-474, in accordance with paragraph (b)(5)(i) of this section.

(4) Application for and Approval of Simulation Facilities - Those facility licensees which propose, in accordance with paragraph (b)(1)(i) of this section, to use a simulation facility that is other than solely a plant-referenced simulator as defined in § 55.4 shall --

(i) In accordance with the plan submitted pursuant to paragraph (b)(2)(i) or (b)(3)(i) of this section, as applicable submit an application for approval of the simulation facility

to the Commission, in accordance with the schedule in paragraph (b)(2)(ii) or (b)(3)(ii) of this section, as appropriate.

This application must include:

- (A) A statement that the simulation facility meets the plan submitted to the Commission pursuant to paragraph (b)(2)(i) or (b)(3)(i) of this section, as applicable;
  - (B) A description of the components of the simulation facility which are intended to be used for each part of the operating test; and
  - (C) A description of the performance tests conducted as part of the application, and the results of such tests.
- (ii) The Commission will approve a simulation facility if it finds that the simulation facility and its proposed use are suitable for the conduct of operating tests for the facility licensee's reference plant, in accordance with paragraph (a) of this section.
- (iii) Submit, every four years on the anniversary of the application, a report to the Commission which identifies any uncorrected performance test failures, and submit a schedule for correction of these performance test failures, if any.

- (iv) Retain the results of the performance tests conducted until four years after the submittal of the application under paragraph (b)(4)(i), each report pursuant to paragraph (b)(4)(iii), or any reapplication under paragraph (b)(4)(vi) of this section, as appropriate.
- (v) If the Commission determines, based upon the results of performance testing, that an approved simulation facility does not meet the requirements of this part, the simulation facility may not be used to conduct operating tests.
- (vi) If the Commission determines, pursuant to paragraph (b)(4)(v) of this section, that an approved simulation facility does not meet the requirements of this part, the facility licensee may again submit an application for approval. This application must include a description of corrective actions taken, including results of completed performance testing as required for approval.
- (vii) Any application or report submitted pursuant to paragraphs (b)(4)(i), (b)(4)(iii) and (b)(4)(vi) of this section must include a description of the performance testing completed for the simulation facility, and must include a description of performance tests, if different, to be conducted on the simulation facility during the subsequent four-year period, and a

schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years.

- (5) **Certification of Simulation Facilities** - Those facility licensees which propose, in accordance with paragraph (b)(1)(ii) of this section, to use a simulation facility consisting solely of a plant-referenced simulator as defined in § 55.4, shall --
- (i) Submit a certification to the Commission that the simulation facility meets the Commission's regulations. The facility licensee shall provide this certification on Form NRC-474 in accordance with the schedule in paragraph (b)(2)(iii) or (b)(3)(iii) of this section, as applicable.
  - (ii) Submit, every four years on the anniversary of the certification, a report to the Commission which identifies any uncorrected performance test failures, and submit a schedule for correction of such performance test failures, if any.
  - (iii) Retain the results of the performance tests conducted until four years after the submittal of certification under paragraph (b)(5)(i), each report pursuant to paragraph (b)(5)(ii), or recertification under paragraph (b)(5)(v) of this section, as applicable.

- (iv) If the Commission determines, based upon the results of performance testing, that a certified simulation facility does not meet the requirements of this part, the simulation facility may not be used to conduct operating tests.
- (v) If the Commission determines, pursuant to paragraph (b)(5)(iv) of this section, that a certified simulation facility does not meet the requirements of this part, the facility licensee may submit a recertification to the Commission on Form NRC-474. This recertification must include a description of corrective actions taken, including results of completed performance testing as required for recertification.
- (vi) Any certification, report, or recertification submitted pursuant to paragraph (b)(5)(i), (b)(5)(ii), or (b)(5)(v) of this section must include a description of performance testing completed for the simulation facility, and must include a description of the performance tests, if different, to be conducted on the simulation facility during the subsequent four-year period, and a schedule for the conduct of approximately 25 percent of the performance tests per year for the subsequent four years.

§ 55.47 Waiver of examination and test requirements.

- (a) On application, the Commission may waive any or all of the requirements for a written examination and operating test, if it finds that the applicant--

- (1) Has had extensive actual operating experience at a comparable facility, as determined by the Commission, within two years before the date of application;
  - (2) Has discharged his or her responsibilities competently and safely and is capable of continuing to do so; and
  - (3) Has learned the operating procedures for and is qualified to operate competently and safely the facility designated in the application.
- (b) The Commission may accept as proof of the applicant's past performance a certification of an authorized representative of the facility licensee or of a holder of an authorization by which the applicant was previously employed. The certification must contain a description of the applicant's operating experience, including an approximate number of hours the applicant operated the controls of the facility, the duties performed, and the extent of the applicant's responsibility.
- (c) The Commission may accept as proof of the applicant's current qualifications a certification of an authorized representative of the facility licensee or of a holder of an authorization where the applicant's services will be utilized.

§ 55.49 Integrity of examinations and tests.

Applicants, licensees, and facility licensees shall not engage in any activity that compromises the integrity of any application, test, or examination required by this part.

Subpart F -- Licenses

§ 55.51 Issuance of Licenses.

Operator and senior operator licenses. If the Commission determines that an applicant for an operator license or a senior operator license meets the requirements of the Act and its regulations, it will issue a license in the form and containing any conditions and limitations it considers appropriate and necessary.

§ 55.53 Conditions of licenses.

Each license contains and is subject to the following conditions whether stated in the license or not:

(a) Neither the license nor any right under the license may be assigned or otherwise transferred.

(b) The license is limited to the facility for which it is issued.

(c) The license is limited to those controls of the facility specified in the license.

(d) The license is subject to, and the licensee shall observe, all applicable rules, regulations, and orders of the Commission.

(e) If a licensee has not been actively performing the functions of an operator or senior operator, the licensee may not resume activities authorized by a license issued under this part except as permitted by paragraph (f) of this section. To maintain active status, the licensee shall actively perform the functions of an operator or senior operator on a minimum of seven 8-hour or five 12-hour shifts per calendar quarter. For test and research reactors, the licensee shall actively perform the functions of an operator or senior operator for a minimum of four hours per calendar quarter.

(f) If paragraph (e) of this section is not met, before resumption of functions authorized by a license issued under this part, an authorized representative of the facility licensee shall certify the following:

(1) That the qualifications and status of the licensee are current and valid; and

(2) That the licensee has completed a minimum of 40 hours of shift functions under the direction of an operator or senior operator as appropriate and in the position to which the individual will be assigned. The 40 hours must have included a complete tour of the plant and all required shift turnover procedures. For senior operators limited to

fuel handling under paragraph (c) of this section, one shift must have been completed. For test and research reactors, a minimum of six hours must have been completed.

(g) The licensee shall notify the Commission within 30 days about a conviction for a felony.

(h) The licensee shall complete a requalification program as described by § 55.59.

(i) The licensee shall have a biennial medical examination.

(j) The licensee shall comply with any other conditions that the Commission may impose to protect health or to minimize danger to life or property.

§ 55.55 Expiration.

(a) Each operator license and senior operator license expires six years after the date of issuance, upon termination of employment with the facility licensee, or upon determination by the facility licensee that the licensed individual no longer needs to maintain a license.

(b) If a licensee files an application for renewal or an upgrade of an existing license on Form NRC-398 at least 30 days before the expiration of the existing license, it does not expire until disposition of the application for

renewal or for an upgraded license has been finally determined by the Commission. Filing by mail or telegram will be deemed to be complete at the time the application is deposited in the mail or with a telegraph company.

§ 55.57 Renewal of licenses.

(a) The applicant for renewal of a license shall --

- (1) Complete and sign Form NRC-398 and include the number of the license for which renewal is sought.
- (2) File an original and two copies of Form NRC-398 with the appropriate Regional Administrator specified in § 55.5(b).
- (3) Provide written evidence of the applicant's experience under the existing license and the approximate number of hours that the licensee has operated the facility.
- (4) Provide a statement by an authorized representative of the facility licensee that during the effective term of the current license the applicant has satisfactorily completed the requalification program for the facility for which operator or senior operator license renewal is sought.
- (5) Provide evidence that the applicant has discharged the license responsibilities competently and safely. The Commission may accept as evidence of the applicant's having met this requirement a certificate

of an authorized representative of the facility licensee or holder of an authorization by which the licensee has been employed.

(6) Provide certification by the facility licensee of medical condition and general health on Form NRC-396, to comply with §§ 55.21, 55.23 and 55.27.

(b) The license will be renewed if the Commission finds that --

(1) The medical condition and the general health of the licensee continue to be such as not to cause operational errors that endanger public health and safety. The Commission will base this finding upon the certification by the facility licensee as described in § 55.23.

(2) The licensee --

(i) Is capable of continuing to competently and safely assume licensed duties;

(ii) Has successfully completed a requalification program that has been approved by the Commission as required by § 55.59; and

(iii) Has passed the requalification examinations and annual operating tests as required by § 55.59.

- (iv) Has passed a comprehensive requalification written examination and operating test administered by the Commission during the term of a six-year license.
- (3) There is a continued need for a licensee to operate or for a senior operator to direct operators at the facility designated in the application.
- (4) The past performance of the licensee has been satisfactory to the Commission. In making its finding, the Commission will include in its evaluation information such as notices of violations or letters of reprimand in the licensee's docket.

§ 55.59 Requalification.

(a) Requalification requirements. Each licensee shall --

- (1) Successfully complete a requalification program developed by the facility licensee that has been approved by the Commission. This program shall be conducted for a continuous period not to exceed 24 months in duration.
- (2) Pass a comprehensive requalification written examination and an annual operating test.
  - (i) The written examination will sample the items specified in §§ 55.41 and 55.43 of this part, to the extent applicable to the

facility, the licensee, and any limitation of the license under § 55.53(c) of this part.

(ii) The operating test will require the operator or senior operator to demonstrate an understanding of and the ability to perform the actions necessary to accomplish a comprehensive sample of items specified in § 55.45(a) (2) through (13) inclusive to the extent applicable to the facility.

(iii) In lieu of the Commission accepting a certification by the facility licensee that the licensee has passed written examinations and operating tests administered by the facility licensee within its Commission-approved program developed by using a systems approach to training under paragraph (c) of this section, the Commission may administer a comprehensive requalification written examination and an annual operating test.

(b) Additional training. If the requirements of paragraphs (a) (1) and (2) of this section are not met, the Commission may require the licensee to complete additional training and to submit evidence to the Commission of successful completion of this training before returning to licensed duties.

(c) Requalification program requirements. A facility licensee shall have a requalification program reviewed and approved by the Commission. 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.

- (1) Schedule. The requalification program must be conducted for a continuous period not to exceed two years, and upon conclusion must be promptly followed, pursuant to a continuous schedule, by successive requalification programs.
  
- (2) Lectures. The requalification program must include preplanned lectures on a regular and continuing basis throughout the license period in those areas where operator and senior operator written examinations and facility operating experience indicate that emphasis in scope and depth of coverage is needed in the following subjects:
  - (i) Theory and principles of operation.
  - (ii) General and specific plant operating characteristics.
  - (iii) Plant instrumentation and control systems.
  - (iv) Plant protection systems.
  - (v) Engineered safety systems.
  - (vi) Normal, abnormal, and emergency operating procedures.
  - (vii) Radiation control and safety.
  - (viii) Technical specifications.
  - (ix) Applicable portions of Title 10, Chapter I, Code of Federal Regulations.

(3) On-the-job training. The requalification program must include on-the-job training so that --

(i) Each licensed operator of a utilization facility manipulates the plant controls and each licensed senior operator either manipulates the controls or directs the activities of individuals during plant control manipulations during the term of the licensed operator's or senior operator's license. For reactor operators and senior operators, these manipulations must consist of the following control manipulations and plant evolutions if they are applicable to the plant design. Items described in paragraphs (c)(3)(i) (A) through (L) of this section must be performed annually; all other items must be performed on a two-year cycle. However, the requalification programs must contain a commitment that each individual shall perform or participate in a combination of reactivity control manipulations based on the availability of plant equipment and systems. Those control manipulations which are not performed at the plant may be performed on a simulator. The use of the Technical Specifications should be maximized during the simulator control manipulations. Senior operator licensees are credited with these activities if they direct control manipulations as they are performed.

(A) Plant or reactor startups to include a range that reactivity feedback from nuclear heat addition is noticeable and heatup rate is established.

- (B) Plant shutdown.
- (C) Manual control of steam generators or feedwater or both during startup and shutdown.
- (D) Boration or dilution during power operation.
- (E) Significant ( $\geq 10$  percent) power changes in manual rod control or recirculation flow.
- (F) Reactor power change of 10 percent or greater where load change is performed with load limit control or where flux, temperature, or speed control is on manual (for HTGR).
- (G) Loss of coolant, including --
  - (1) significant PWR steam generator leaks
  - (2) inside and outside primary containment
  - (3) large and small, including leak-rate determination
  - (4) saturated reactor coolant response (PWR).
- (H) Loss of instrument air (if simulated plant specific).
- (I) Loss of electrical power (or degraded power sources).
- (J) Loss of core coolant flow/natural circulation.

- (K) Loss of feedwater (normal and emergency).
- (L) Loss of service water, if required for safety.
- (M) Loss of shutdown cooling.
- (N) Loss of component cooling system or cooling to an individual component.
- (O) Loss of normal feedwater or normal feedwater system failure.
- (P) Loss of condenser vacuum.
- (Q) Loss of protective system channel.
- (R) Mispositioned control rod or rods (or rod drops).
- (S) Inability to drive control rods.
- (T) Conditions requiring use of emergency boration or standby liquid control system.
- (U) Fuel cladding failure or high activity in reactor coolant or offgas.

- (V) Turbine or generator trip.
  - (W) Malfunction of an automatic control system that affects reactivity.
  - (X) Malfunction of reactor coolant pressure/volume control system.
  - (Y) Reactor trip.
  - (Z) Main steam line break (inside or outside containment).
  - (AA) A nuclear instrumentation failure.
- 
- (ii) Each licensed operator and senior operator has demonstrated satisfactory understanding of the operation of the apparatus and mechanisms associated with the control manipulations in paragraph (c)(3)(i) of this section, and knows the operating procedures in each area for which the operator or senior operator is licensed.
  - (iii) Each licensed operator and senior operator is cognizant of facility design changes, procedure changes, and facility license changes.

(iv) Each licensed operator and senior operator reviews the contents of all abnormal and emergency procedures on a regularly scheduled basis.

(v) A simulator may be used in meeting the requirements of paragraphs (c)(3)(i) and (3)(ii) of this section, if it reproduces the general operating characteristics of the facility involved and the arrangement of the instrumentation and controls of the simulator is similar to that of the facility involved. If the simulator or simulation device is used to administer operating tests for a facility, as provided in § 55.45(b)(1), the device approved to meet the requirements of § 55.45(b)(1) must be used for credit to be given for meeting the requirements of paragraphs (c)(3)(i)(G through AA) of this section.

(4) Evaluation. The requalification program must include --

(i) Comprehensive requalification written examinations and annual operating tests which determine areas in which retraining is needed to upgrade licensed operator and senior operator knowledge.

(ii) Written examinations which determine licensed operators' and senior operators' knowledge of subjects covered in the requalification program and provide a basis for evaluating their knowledge of abnormal and emergency procedures.

- (iii) Systematic observation and evaluation of the performance and competency of licensed operators and senior operators by supervisors and/or training staff members, including evaluation of actions taken or to be taken during actual or simulated abnormal and emergency procedures.
- (iv) Simulation of emergency or abnormal conditions that may be accomplished by using the control panel of the facility involved or by using a simulator. Where the control panel of the facility is used for simulation, the actions taken or to be taken for the emergency or abnormal condition shall be discussed; actual manipulation of the plant controls is not required. If a simulator is used in meeting the requirements of paragraph (c)(4)(iii) of this section, it shall accurately reproduce the operating characteristics of the facility involved and the arrangement of the instrumentation and controls of the simulator shall closely parallel that of the facility involved. After the provisions of § 55.45(b) have been implemented at a facility, the certified or approved simulation facility must be used to comply with this paragraph.
- (v) Provisions for each licensed operator and senior operator to participate in an accelerated requalification program where performance evaluations conducted pursuant to paragraphs (c)(4)(i) through (iv) of this section clearly indicate the need.

(5) Records. The requalification program documentation must include the following:

- (i) The facility licensee shall maintain records documenting the participation of each licensed operator and senior operator in the requalification program. The records must contain copies of written examinations administered, the answers given by the licensee, and the results of evaluations and documentation of operating tests and of any additional training administered in areas in which an operator or senior operator has exhibited deficiencies. The facility licensee shall retain these records until the operator's or senior operator's license is renewed.
- (ii) Each record required by this part must be legible throughout the retention period specified by each Commission regulation. The record may be the original or a reproduced copy or a microform provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period.
- (iii) If there is a conflict between the Commission's regulations in this part, and any license condition, or other written Commission approval or authorization pertaining to the retention period for the same type of record, the retention period specified for these

records by the regulations in this part apply unless the Commission, pursuant to § 55.11, grants a specific exemption from this record retention requirement.

- (6) Alternative training programs. The requirements of this section may be met by requalification programs conducted by persons other than the facility licensee if the requalification programs are similar to the program described in paragraphs (c)(1) through (5) of this section and the alternative program has been approved by the Commission.
- (7) Applicability to research and test reactor facilities. To accommodate specialized modes of operation and differences in control, equipment, and operator skills and knowledge, the requalification program for each licensed operator and senior operator of a research reactor or test reactor facility must conform generally but need not be identical to the requalification program outlined in paragraphs (c)(1) through (6) of this section. Significant deviations from the requirements of paragraphs (c)(1) through (6) of this section will be permitted only if supported by written justification and approved by the Commission.

Subpart G -- Modification and Revocation of Licenses

§ 55.61 Modification and revocation of licenses.

- (a) The terms and conditions of all licenses are subject to amendment, revision, or modification by reason of rules, regulations, or orders issued in accordance with the Act or any amendments thereto.

(b) Any license may be revoked, suspended, or modified, in whole or in part:

- (1) For any material false statement in the application or in any statement of fact required under section 182 of the Act,
- (2) Because of conditions revealed by the application or statement of fact or any report, record, inspection or other means that would warrant the Commission to refuse to grant a license on an original application,
- (3) For willful violation of, or failure to observe any of the terms and conditions of the Act, or the license, or of any rule, regulation, or order of the Commission, or
- (4) For any conduct determined by the Commission to be a hazard to safe operation of the facility.

Subpart H -- Enforcement

§ 55.71 Violations.

(a) An injunction or other court order may be obtained prohibiting any violation of any provision of:

- (1) The Atomic Energy Act of 1954, as amended;
- (2) Title II of the Energy Reorganization Act of 1974, as amended; or
- (3) Any regulation or order issued under these Acts.

(b) A court order may be obtained for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act for violation of:

- (1) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act;
- (2) Section 206 of the Energy Reorganization Act of 1974;
- (3) Any rule, regulation, or order issued under these Acts;
- (4) Any term, condition, or limitation of any license issued under these Acts; or
- (5) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act.

(c) Any person who willfully violates any provision of the Atomic Energy Act or any regulation issued under the Act, including the regulations in this part, may be guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both, as provided by law.

**PART 50 -- DOMESTIC LICENSING OF  
PRODUCTION AND UTILIZATION FACILITIES**

2. The authority citation for Part 50 continues to read as follows:

**AUTHORITY:** Secs. 103, 104, 161, 182, 183, 186, 189, 68 Stat. 936, 937, 948, 953, 954, 955, 956, as amended, sec 234, 83 Stat. 1244, as amended (42 U.S.C. 2133, 2134, 2201, 2232, 2233, 2236, 2239, 2282); secs. 201, 202, 206, 88 Stat. 1242, 1244, 1246, as amended (42 U.S.C. 5841, 5842, 5846), unless otherwise noted.

Section 50.7 also issued under Pub. L. 95-601, sec. 10, 92 Stat. 2951 (42 U.S.C. 5851). Sections 50.58, 50.91, and 50.92 also issued under Pub. L. 97-415, 96 Stat. 2071, 2073 (42 U.S.C. 2133, 2239). Section 50.78 also issued under sec. 122, 68 Stat. 939 (42 U.S.C. 2152). Sections 50.80-50.81 also issued under sec. 184, 68 Stat. 954, as amended (42 U.S.C. 2234). Sections 50-100-50.102 also issued under sec. 186, 68 Stat. 955 (42 U.S.C. 2236).

For the purposes of sec. 223, 68 Stat. 958, as amended (42 U.S.C. 2273), §§ 50.10(a), (b), and (c), 50.44, 50.46, 50.48, 50.54, and 50.80(a) are issued under sec. 161b, 68 Stat. 948, as amended (42 U.S.C. 2201(b)); §§ 50.10(b) and (c) and 50.54 are issued under sec. 161i, 68 Stat. 949, as amended (42 U.S.C. 2201(i)); and §§ 50.55(e), 50.59(b), 50.70, 50.71, 50.72, 50.73, and 50.78 are issued under sec. 161o, 68 Stat. 950, as amended (42 U.S.C. 2201(o)).

3. In § 50.34, paragraph (b)(8) is revised as follows.

§ 50.34 Contents of applications; technical information

\* \* \* \* \*

(b) \*\*\*

- (8) A description and plans for implementation of an operator requalification program. The operator requalification program must as a minimum, meet the requirements for those programs contained in § 55.59 of Part 55 of this chapter.

\* \* \* \* \*

4. In § 50.54, paragraphs (i) and (i-1) are revised to read as follows:

§ 50.54 Conditions of licenses.

\* \* \* \* \*

- (i) Except as provided in § 55.13 of this chapter, the licensee may not permit the manipulation of the controls of any facility by anyone who is not a licensed operator or senior operator as provided in Part 55 of this chapter.

- (i-1) Within three months after issuance of an operating license, the licensee shall have in effect an operator requalification program which must as a minimum, meet the requirements of § 55.59(c) of this chapter. Notwithstanding the provisions of § 50.59, the licensee may not, except as

specifically authorized by the Commission decrease the scope of an approved operator requalification program.

\* \* \* \* \*

5. Immediately following § 50.73, "Licensee Event Report System," a new § 50.74 is added as a conforming amendment to read as follows:

§ 50.74 Notification of change in operator or senior operator status.

Each licensee shall notify the Commission in accordance with § 50.4 within 30 days of the following in regard to a licensed operator or senior operator:

- (a) Permanent reassignment from the position for which the licensee has certified the need for a licensed operator or senior operator under § 55.31(a)(3) of this chapter;
- (b) Termination of any operator or senior operator;
- (c) Disability or illness as described in § 55.25 of this chapter.

Dated at Washington, DC, this \_\_\_\_\_ day of \_\_\_\_\_, 1987.

For the Nuclear Regulatory Commission,

\_\_\_\_\_  
Samuel J. Chilk,  
Secretary of the Commission.

LIST OF RECENTLY ISSUED GENERAL LETTERS

Generic Letter No.	Subject	Date of Issuance	Issued To
GL 87-06	TESTING OF PRESSURE ISOLATION VALVES	03/13/87	ALL OPERATING REACTOR LICENSEES
GL 87-05	REQUEST FOR ADDITIONAL INFORMATION-ASSESSMENT OF LICENSEE MEASURES TO MITIGATE AND/OR IDENTIFY POTENTIAL DEGRADATION MK1	03/12/87	LICENSEES OF OR'S, APPLICANTS FOR OL'S, AND HOLDERS OF CP'S FOR BWR MARK I CONTAINMENTS
GL 87-04	TEMPORARY EXEMPTION FROM PROVISIONS OF THE FBI CRIMINAL HISTORY RULE FOR TEMPORARY WORKERS	03/06/87	ALL POWER REACTOR LICENCES
GL 87-03	VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL EQUIPMENT IN OPERATING REACTORS, USI A-46	02/26/87	ALL LICENSEES NOT SUBJECT TO USI A-46 REQUIREMENTS
GL 87-02	VERIFICATION OF SEISMIC ADEQUACY OF MECHANICAL AND ELECTRICAL EQUIPMENT IN OPERATING REACTORS (USI A-46)	02/19/87	ALL HOLDERS OF OPERATING LICENSES NOT REVIEWED TO CURRENT LICENSING CRITERIA ON SEISMIC QUALIFICATION OF EQUIPMENT
GL 87-01	PUBLIC AVAILABILITY OF THE NRC OPERATOR LICENSING EXAMINATION QUESTION BANK	01/08/87	ALL POWER REACTOR LICENSEES AND APPLICANTS FOR AN OPERATING LICENSE
GL 86-17	AVAILABILITY OF NUREG-1169, "TECHNICAL FINDINGS RELATED TO GENERIC ISSUE C-8 BWR MSIC LEAKAGE AND LEAKAGE CONTROL SYSTEM	10/17/86	ALL LICENSEES OF BOILING WATER REACTORS
GL 86-16	WESTINGHOUSE ECCS EVALUATION MODELS	10/22/86	ALL PRESSURIZED WATER REACTOR APPLICANTS AND LICENSEES