NOTE TO : DOCUMENT CONTROL DESK

FROM: Brian Hughes, NRR, HOLB BH 3-2-94

SUBJECT: HOLB MANUAL CHAPTER MC-170

Please place the attached HOLB Manual Chapter in the PDR. This document was referenced in the Commerce Bussiness Daily and needs to be placed in the PDR.

Thank you,

Brian Hughes

Brian Hughes, NRR/HOLB
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EXAMINER QUALIFICATION AND REFRESHER TRAINING

A. PURPOSE

To establish the requirements and guidelines for initial qualification and certification of operator licensing examiners and chief examiners through self-study, formal classroom instruction and on-the-job training, and to establish requirements for maintaining examiner certification through periodic performance audits and continuing training.

B. OBJECTIVES

To provide a standardized technique for determining and documenting that a license examiner trainee (LET) has met the minimum experience and training requirements to certify as an operator licensing examiner.

To ensure that LETs meet the minimum knowledge and ability requirements to assess reactor operator and senior reactor operator competence pursuant to 10 CFR 55.

To set forth a program of continuing training to maintain certified examiners current in the examination process and vendor technology.

To establish an examiner evaluation process that documents performance and provides feedback to reenforce or improve upon that performance.

C. DEFINITIONS

Cross-Certification: Once certified on one NSSS vendor, the process of becoming certified on additional NSSS vendors.

Equivalency Examination: An examination administered through the Technical Training Center in lieu of specific course attendance.

Optional Training: Courses and planned activities that are not required for every examiner's certification but may be necessary for some individuals to perform examinations on specific vendor types. Optional training should be scheduled at the Section Chief/supervisors' discretion based upon the individual's prior experience and training.

Refresher Training: The minimum required continuing training to maintain examiner certification.

Required Training: The combination of experience, formal and on-the-job training necessary to ensure the minimum level of knowledge and skill to administer licensing examinations pursuant to 10 CFR 55. All REQUIRED training must be signed off as complete or waived by the Chief of the Operator Licensing Branch (LOLB).

Training and Qualification Journal: The document that describes the minimum requirements to certify as an examiner and a chief examiner. The Journal also contains optional signature cards for documenting cross-certifications and refresher training and audits. The Examiner Training and Qualification Journal is included as Attachment 1 to this Manual Chapter.

D. POLICY

Training requirements for all examiners are governed by this Manual Chapter and the attached Training and Qualification Journal. These documents encompass regulatory, administrative, technical and examination practices pertinent to evaluating the performance of applicants pursuant to 10 CFR 55.

To ensure that all personnel certified as examiners have sufficient knowledge of plant operations and examination techniques, LETs will complete the minimum requirements set forth in the Training and Qualification Journal. This standardized process will help assure a consistent approach to training examiners across all Regions and the contract labs.

Each examiner must complete the required training, pass a written equivalency examination, if applicable, or be granted a waiver of the specific training requirement by LOLB.

All Section Chiefs will certify as examiners in accordance with the requirements set forth in the Training and Qualification Journal. The Chief, LOLB will take equivalent training and experience into consideration when reviewing and approving the examiner training programs submitted by the Regions for Section Chief certifications. Section Chiefs should normally certify within 24 months after assignment to the operator licensing program, unless special dispensation is granted by the Chief, LOLB.

E. RESPONSIBILITIES AND AUTHORITIES

The Chief, LOLB, sets and approves policy governing examiner qualification and training and is responsible for maintaining this Manual Chapter and the associated Training and Qualification Journal. The Chief, LOLB concurs in all Section Chief training programs and approves training requirement waiver requests as specified in section G. The Chief, LOLB has final approval authority for all Headquarters and contract examiner certifications.

The Regional Administrators (RAs) implement program responsibilities delegated to the Region with the resources budgeted for the Region. The RAs or their designated alternates, generally the Regional Operator Licensing Branch Chiefs (BCs) or their Division Director (DD), have final approval authority for the certification of all examiners assigned to the Region.

The Regional Operator Licensing BCs manage the requirements of this chapter in the Region. Their concurrence or approval, if so designated by the RA, is required for Regional examiners' qualification programs and certifications.

The Regional Section Chiefs (SCs) tailor the LET's training to the specific needs of the individual, supervise their progress and recommend certification or additional training, as necessary.

The Director, Technical Training Center implements and administers formal classroom and simulator training.

F. TRAINING AND CERTIFICATION

Examiners must be thoroughly knowledgeable in the technical areas of reactor plant operation and in the techniques of developing and administering examinations to evaluate an applicant's competency. Only those examiners who have successfully completed all the requirements for examiner qualification and are certified have the authority to independently administer license examinations pursuant to 10 CFR 55. Partial certifications for conducting written or operating tests are NOT permitted.

LETs assigned to the non-power reactor examination section at the Headquarters Office will, in most instances, complete their initial certification on non-power reactors and cross-certify on one or more of the power reactor vendors at a later time. The Non-power Reactor SC will determine which Training and Qualification Journal requirements must be completed prior to certification based upon the individual LET's prior training and experience. The Chief, LOLB must approve any and all deviations from the scope and sequence established for normal power reactor certification.

Certified examiners are exempt from the requirements of this Manual Chapter for their current certification. However, certified examiners desiring to certify as chief examiners or cross-certify on another NSSS vendor must meet the provisions of paragraphs H and I of this Manual Chapter, as applicable.

G. TRAINING AND QUALIFICATION GUIDES

The Training and Qualification Journal consists of eight guides, which are briefly described below. The first five guides make up the initial certification program for new LETs; the last three guides are supplemental or optional and should be used to document an examiner's certification as a chief examiner, any subsequent cross-certifications, and the examiner's refresher training and audit history.

Any applicable equivalency testing and waiver options are included in the discussions. The basis for requesting and granting any waiver must be

documented as part of the LET's permanent training record. Each waiver request will be evaluated on a case-by-case basis; being previously licensed as an SRO does not necessarily guarantee a technology course waiver if the license has been inactive for several years.

1. EXAMINER STANDARDS AND ASSOCIATED DOCUMENTS

This training is intended to be an in-depth indoctrination of LETs to the Standards, Handbooks, Catalogs, NUREGs and other documents that govern the examination process. This guide is REQUIRED for all examiners and cannot be waived.

2. FORMAL/CLASSROOM TRAINING PROGRAM

This training is coordinated through and conducted by the Technical Training Center (TTC) and the Operator Licensing Branch. Each of the available courses is listed below with a brief narrative of the course content. Additional information regarding the courses can be found in the TTC's Syllabus of Courses published annually.

TTC Full Course Series: This series consists of three weeks of systems training followed by two weeks of advanced technology training and two weeks of simulator training on plant operations, system interrelationships and emergency operating procedures (EOPs). This training REQUIREMENT can be satisfied in three ways: (1) by attending each course in the series and achieving a minimum course grade of 70%; (2) by achieving a minimum 70% score on an equivalency examination developed and administered by the TTC for each course that is not attended; or (3) by obtaining a waiver based upon prior experience and training (e.g., being previously licensed as an RO or SRO on the vendor type for which certification is sought). Option (3) requires approval of the Chief, LOLB and must be documented in the LET's individual training record.

Emergency Procedures Guidelines: This is a one week classroom/simulator course on the purpose, function and use of EOPs and is normally scheduled as part of the Full Course Series. Completion of this course is REQUIRED, however, the Chief, LOLB may grant a waiver based upon the LET's prior training and experience (e.g., previously licensed as an SRO at a nuclear power plant of the same vendor type).

This course may also be used to satisfy an examiner's refresher training requirement as discussed in paragraph J.

Integrated Facility Operations: This course consists of one week of simulator training on integrated plant operations. Attendance at this course is OPTIONAL for certification but highly recommended early in an examiner's career.

This course may also be used to satisfy an examiner's refresher training requirement as discussed in paragraph J.

Site Access Training Course (H-100): This OPTIONAL course provides the fundamentals of radiation protection and contamination control. Many facilities will waive portions of their general employee training requirements for unescorted site access if the examiner has completed this course.

Examination Techniques Training Course: This course is REQUIRED for all LETs. It provides guidance and practice in the construction of content-valid written test items in the various formats acceptable for NRC licensing examinations, the development and administration of simulator tests, including the grading of candidate performance, and the development and administration of walk-through examinations. This course combines classroom and simulator instruction and is conducted at the TTC. Participants must successfully complete all workshop exercises.

Qualification Guide Number 1 (Examiners Standards and Associated Documents) and the required technology training MUST be completed prior to attending this course. It is also recommended that LETs complete one initial examination observation trip required by Qualification Guide Number 4 before attending this course.

3. FAMILIARIZATION TRAINING

This training is intended to provide the LET an opportunity to become familiar with the duties and responsibilities of licensed operators through self study, discussions with certified examiners and direct observation and simulated performance of activities at an operational reactor facility. Satisfactory completion of this training is based on performance of the tasks in Appendix A of the Journal and a discussion of those evolutions with the LET's certified Section Chief/supervisor. This familiarization training is REQUIRED for all LETs, unless previous experience permits a waiver of this training by the Chief, LOLB. The basis for the waiver must be documented in the individual's training record.

4. ON-THE-JOB TRAINING (OJT)

This training provides the LET with practical experience in the operator licensing process. Topics include the operator licensing examination question bank (EQB) and examination observation trips. At least one observation trip should be completed prior to attending the Examination Techniques Course; otherwise, the timing of this training is at the discretion of the LET's SC or supervisor. LETs should observe the

conduct of both initial and requalification examinations as part of their initial license examiner certification training program. These observation trips also provide an opportunity for the LET to administer practice examinations, after which the examiner of record can provide performance feedback for follow-up by the LET and his/her supervisor.

Such practice exams shall be subject to the following restrictions: all other training requirements shall be complete; the certified examiner of record must be fully prepared for the examination and take over if necessary to establish an adequate licensing basis; and the Regional Branch Chief must authorize the administration of practice examinations in that Region.

Contract examiners should spend a minimum of one week in a Regional Office during their certification training program. That time should be scheduled to facilitate the final review and approval of the LET's written and operating certification examinations and, if possible, should permit the LET to participate in the written exam review conducted by the facility licensee. This office visit will also allow the LET to complete the other training topics required for this qualification guide.

Regional BCs and contract managers may request waivers of all or part of the OJT training based upon the LET's prior training and experience. LOLB will evaluate the Region/lab's written justification and grant waivers as appropriate.

5. CERTIFICATION EXAMINATIONS

Certification examinations are administered after the SC or supervisor verifies that ALL other training required by this chapter and the Training and Qualification Journal has been completed. A certified SC or supervisor must review and approve the LET's written examination and operating test (simulator and walk-through portions) for the LET to certify as an examiner.

As discussed under "On-the-job Training," contractor LETs should schedule a trip to a Regional Office for the purpose of reviewing and finalizing their certification examination packages. This will facilitate the incorporation of Regional comments by allowing the LET to interface directly with the NRC chief examiner and will permit the LET to participate in the facility pre-review.

Certification as a license examiner culminates in an audit by a certified chief examiner during the administration of a written examination and an operating test. Due to the constraints of scheduling examinations, the written and operating examinations need not be

completed at the same facility, however, all parts of the process must be successfully completed under the observation of a certified chief examiner, preferably the LET's Section Chief if he/she is certified on the applicable vendor type. Contractor LETs may be audited by any certified chief examiner. The certified chief examiner (auditor) is ultimately responsible for evaluating the license candidate being examined and ensuring that an adequate basis exists for a licensing decision. If necessary, the auditor must take control of the examination to ensure that the requirements of the Examiner Standards, NUREG-1021, are satisfied.

The auditing examiner will document the LET's performance during the certification operating test by completing an Operating Test Audit form (Attachment 2). The auditor will forward the complete Audit Form to the certifying official via the LET's supervisor. The examiner will be allowed to administer operating tests independently only after the certifying official has reviewed and approved the LET's completed Qualification Journal.

All LETs must successfully complete this qualification guide to certify as a license examiner.

H. CHIEF EXAMINER CERTIFICATION

The supplemental chief examiner certification signature card in the License Examiner Qualification Journal should be used to document the training, practical factors and discussions completed pursuant to chief examiner certification. The intent of this certification is to ensure that chief examiners have the administrative skills and the regulatory maturity necessary to lead a team of license examiners. It affords Regional management the opportunity to clearly convey its expectations to its chief examiner candidates and to formally designate its senior on-site representatives.

Those NRC examiners who were "certified" as CEs (i.e., they satisfactorily performed the duties of a CE during an initial or a requalification examination assignment) before the date on which this Qualification Guide was issued are exempt from the guidelines stated herein, however, they are encouraged to attend the OPTIONAL training courses identified on the CE signature card.

This qualification guide is not applicable to contract examiners because only NRC employees can act as chief examiners.

I. CROSS-CERTIFICATION

To cross-certify to another reactor type the examiner must demonstrate his/her mastery of the applicable vendor technology. This can be

accomplished by one of the following methods: (1) attending the TTC full course series (as discussed in Paragraph G.2 above) for the new reactor type; (2) attending the TTC cross-training course (if available) for the applicable vendor (CE and BW only) and attending the associated simulator courses; or (3) completing a self-study program, taking the equivalency examinations for the basic and advanced technology courses and then attending the associated simulator courses. In each case the examiner must pass all applicable examinations with a minimum grade of 70% and complete the Emergency Procedures Guidelines course for the applicable vendor. Any deviations from these requirements must be approved by the Chief, LOLB.

Cross-certifying examiners need not repeat the on-site familiarization training or the Examination Techniques Course unless specifically requested by their supervisor. Additional certification examinations are NOT required to cross-certify from one power reactor vendor to another, however, cross-certification from power to non-power reactors, or vice versa, does require the preparation and administration of an operating test and written exam on the new technology.

An optional/supplemental signature card is provided for use in documenting examiner cross-certifications. Multiple copies of the signature card can be used to document additional certifications.

J. MAINTENANCE OF EXAMINER CERTIFICATION

To maintain certification, all examiners must attend a refresher training course at least once every two calendar years, and all examiners below the organizational level of Section Chief must administer an initial or requalification operating test under observation at least once during each calendar year. An optional signature card is provided in the License Examiner Qualification Journal for use in documenting the examiner's periodic refresher training attendance and audits.

The refresher training requirement can be satisfied by attending either a technology-based course offered by the TTC (including the Emergency Procedures Guidelines courses and the Integrated Facility Operations courses) or the Examiner Techniques Refresher course. The Regional Section Chiefs and the contractor supervisors should exercise their discretion when making individual examiner training decisions, paying particular attention to the examiner's training needs as evidenced during his or her last operating test audit (see below). If an examiner completes cross-certification on another reactor vendor technology, then the refresher training clock will reset to the date of his or her new certification.

Examiners who are certified on more than one vendor type need only attend one vendor refresher course and administer examinations on one

vendor type to maintain all their certifications. However, the examiner's supervisor should make every attempt to alternate vendor courses and examination assignments for subsequent refresher training and proficiency. In the absence of an overriding need for one particular type of training, supervisors should attempt to alternate their examiners' attendance at both the techniques and technology refresher courses.

If, due to circumstances beyond the control of the individual examiner and the Regional or contractor office, an examiner is unable to attend a refresher training course within the required two-year time interval, the Chief, LOLB can grant an extension for up to six months. The examiner's supervisor must submit the request in writing and specify why the extension is necessary (e.g., cancellation of a previously scheduled course, operational necessity, etc.). The Chief, LOLB will review and approve extensions on a case-by-case basis.

Each examiner shall be audited during the administration of an initial or requalification examination once per calendar year by his/her Section Chief/supervisor. All examiner audits will be documented on an Operating Test Audit Form (Attachment 2). Contractor project managers/supervisors will audit each of their examiners annually, and the appropriate LOLB technical monitor or another designated NRC examiner will annually audit at least half of the examiners employed under each contract. Technical monitors should ensure that each contract examiner is audited by the NRC at least every two calendar years. The LOLB technical monitors will coordinate the audits for all their contract examiners and review all completed audit forms.

The auditor should discuss the results of the evaluation, including recommendations for improvement, with the examiner as soon after the evaluation as practical. Comments/suggestions should be kept as objective as possible and, where possible, referenced to the Examiner Standards or other appropriate NRC directives. The examiner's supervisor should take the audit findings and results into consideration when planning the examiner's refresher training program.

Additional Office of Nuclear Reactor Regulation (NRR) policies and guidelines regarding management involvement and oversight of NRC activities conducted at reactor facilities, including the administration of operator licensing examinations, are contained in Chapter 0102 of the NRC Inspection Manual.

Any examiner who does not maintain certification shall recertify before administering operating tests. Recertification shall, at a MINIMUM, consist of being audited by a certified chief examiner during administration of a complete operating test and attending an examiner techniques refresher training course. Technology refresher training should also be provided, if necessary, at the discretion of the examiner's

supervisor. The burden for ensuring the recertifying examiner's technical competency and examination skills rests with the certifying official (see paragraph E).

The recertification examination audit shall be documented on NRC Form 308 (Attachment 2) and maintained in the individual's training folder. Recertification is only required on one vendor type for examiners with previous multiple vendor certifications.

ATTACHMENTS:
1. Qualification Journal for Operator Licensing Examiners (Including Appendix A, "Familiarization Training Manual")
2. Operating Test Audit Form

U. S. NUCLEAR REGULATORY COMMISSION

QUALIFICATION JOURNAL FOR OPERATOR LICENSING EXAMINERS

Name: _____

Date Qualification Program Begins: _____

To certify as an operator licensing examiner, you must complete Signature Cards one through five described in this Qualification Journal. Additional Signature Cards are provided for the Regions' and contract offices' use in documenting subsequent certification as a chief examiner, cross-certifications on other reactor types and for documentation of refresher training and periodic audits. The Regions and contract offices may choose to use the cross-certification and maintenance cards in lieu of locally developed documentation and tracking systems at their option.

This Qualification Journal does not include generic administrative and policy background and guidelines that are required knowledge for all NRC employees. Those topics should be addressed in the individual License Examiner Trainee's (LET's) Regional Office orientation and qualification program.

Program Prepared: _____ Section Chief (SC) _____ Date

Program Approved: _____ Branch Chief (BC) _____ Date

Program Approved (*): _____ Branch Chief (BC), LOLB _____ Date

(*) Required for Section Chief certifications.

MASTER SIGNATURE CARD

NAME: _____ START DATE: _____

I. Initial Certification

A. Reactor Type (circle one) GE W CE BW NPR

B. Guide Completion

	SC Initials	Date
1. Examiner Standards/ LOLB Documents	_____	_____
2. Formal/Classroom Training	_____	_____
3. Familiarization Training	_____	_____
4. On-The-Job Training	_____	_____
5. Certification Exams	_____	_____

C. Recommendation _____ (SC/BC Signature) _____

D. Final Approval(*) _____ (Certifying Official Signature) _____

II. Chief Examiner Certification

A. Recommendation _____ (BC/SC Signature) _____ (Date)

B. Final Approval(*) _____ (Certifying Official Signature) _____ (Date)

III. Cross-Certification:

	Circle Vendor	Recommendation BC/SC Sign & Date	Final Approval (*) Sign & Date
A.	GE/W/CE/BW/NPR	_____	_____
B.	GE/W/CE/BW/NPR	_____	_____
C.	GE/W/CE/BW/NPR	_____	_____

(*) Final approval must be BC or higher, depending on Regional directives.

QUALIFICATION GUIDE 1

Examiner Standards and Associated Documents

This training serves mainly to introduce the LET to the basic documents and procedures used by the Operator Licensing Branch (LOLB) and should be conducted in the LET's home office.

Requirements:

1. Operator Licensing Branch (LOLB) Documents

   a. NUREG 1021, "Operator Licensing Examiner Standards"

      Read each of the Examiner Standards in depth. The LET is not expected to recall everything in the Standards from this reading, but should have a good understanding of the topics that are addressed and the guidelines they set forth for initial operator licensing and requalification examinations. The applicable policy memoranda associated with the Examiner Standards, such as Regional interaction forms, should also be reviewed. Discuss each standard with a certified chief examiner. Questions on the Standards should be raised at this time.

   b. The LET should review the following documents to obtain an awareness of their contents. Most of these documents will be addressed in greater detail in later qualification guides.

- OLB-MC	"Operator Licensing Branch Manual Chapters"
- NUREG-1121	"Examiners' Handbook"
- NUREG-1122/1123	"Knowledge and Abilities Catalog for Nuclear Power Plant Operators: Pressurized/Boiling Water Reactors"
- NUREG-1291	"PWR AND BWR Off-Normal Event Descriptions"
- NUREG-1258	"Evaluation Procedure for Simulator Facilities Certified Under 10 CFR Part 55"
- Inspection Manual Chapter 0102	"NRR Policy for Management Oversight of NRC Activities Conducted at Reactor Facilities"

2. Code of Federal Regulations

Listed below are 10 CFR Parts that apply to the operator licensing program. The LET should become familiar with these regulations through self-study, participation in Regional seminars and discussions with certified examiners or the Section Chief.

- 10 CFR Part 2 — Rules of Practice for Domestic Licensing Proceedings
- 10 CFR Part 19 — Notices, Instructions, and Reports to Workers; Inspections
- 10 CFR Part 20 — Standards for Protection Against Radiation
- 10 CFR Part 50 — Domestic Licensing of Production and Utilization Facilities
- 10 CFR Part 55 — Operator's Licenses
- 10 CFR Part 73 — Physical Protection of Plants and Materials

3. Final Safety Analysis Report (FSAR)

The LET should review an FSAR to gain a general awareness of its contents as it relates to the operator licensing function. Particular attention should be given to Section 13, Conduct of Operations.

4. Facility Technical Specifications (TS)

The LET should review and discuss each section of a facility's TS with the Section Chief or a certified chief examiner. The discussion should focus on the use of the TS in the examination process.

5. Regulatory Guides

The LET should become familiar with the general content and scope of each of the following Regulatory Guides. Note that many of these Regulatory Guides reference or endorse industry codes and standards listed in topic (6) below.

- 1.8 — Personnel Selection and Training
- 1.114 — Guidance on Being an Operator at the Controls of a Nuclear Power Plant

- 1.134 Medical Evaluation of Nuclear Power Plant Personnel Requiring Operator Licenses

- 1.149 Nuclear Power Plant Simulators for Use in Operator Training

6. Industry Standards

The LET should become familiar with the general content and scope of the following Industry Standards.

- ANSI/ANS 3.1 - 1981 "Standard for Selection and Training of Nuclear Power Plant Personnel."

- ANS 3.4/ANSI N-546 "Medical Certification and Monitoring of Personnel Requiring Operator Licenses for Nuclear Power Plants."

- ANS 3.5 "Nuclear Power Simulators for Use in Operator Training."

Assessment:

After the LET has reviewed each of these documents, the application of each document to the operator licensing program should be discussed with a certified chief examiner and signed off on Signature Card 1. After all the required topics have been discussed and signed off, the LET's Section Chief (or a designated chief examiner if the SC is not certified) should interview the LET to ensure an appropriate level of understanding.

Waivers:

This Qualification Guide is required for all LETs; no waivers will be granted.

SIGNATURE CARD 1

Examiner Standards and Associated Documents

NAME: _____

REQUIREMENTS (*)		INITIALS	DATE
1.	LOLB Documents	_____	_____
2.	Code of Federal Regulations (CFR)	_____	_____
3.	Final Safety Analysis Report	_____	_____
4.	Facility Technical Specifications	_____	_____
5.	Regulatory Guides	_____	_____
6.	Industry Standards	_____	_____

(*) The topics on this signature card can be signed off by any certified chief examiner based upon a discussion of the document(s) with the LET.

VERIFICATION

The LET's Section Chief / Supervisor shall interview the LET to ensure an adequate understanding of the documents identified in the associated Qualification Guide.

_____ _____
(Sign here and on Master Card) (Date)

QUALIFICATION GUIDE 2

Formal/Classroom Training Program

The following courses, offered through the Technical Training Center (TTC), are intended to provide LETs with a technical basis in nuclear power plant technology and examination techniques. The required technology courses must be completed prior to attending the Examination Techniques Course.

Required Courses:

1. Technology Training

All LETs must complete a TTC full course series, consisting of the following individual courses, or obtain a waiver from the Chief of the Operator Licensing Branch as discussed below:

- 3 weeks basic systems training
- 2 weeks advanced training (e.g., Technical Specifications, system interactions)
- 1 week simulator training in overall plant operations and system interrelationships
- 1 week classroom/simulator training on the purpose, function, and use of Emergency Operating Procedures

Assessment: The LET must demonstrate mastery of the vendor technology by achieving a minimum grade of 70% on the examination associated with each course. Local management may authorize the LET to take an equivalency examination prepared by the TTC if justified by the LET's prior training and experience.

Waivers: The Chief, LOLB can waive this training requirement if adequate justification is provided in writing by the LET's management. Waivers will be reviewed on a case-by-case basis depending upon the LET's specific training and experience. Factors to be considered include the following: previous licensure on a similar reactor, the level of the LET's license, previous experience as an instructor, a Regional or a resident inspector, and the length of time that has elapsed since the training and experience were gained.

2. Examination Techniques Training

All LETs must attend this two-week workshop, conducted at the Technical Training Center by the OLB/TTC staff. It provides newly hired LETs with training and structured practice in the construction of content-valid written test questions and the development and administration of simulator and walk-through examinations. The following topics are included:

- Use of the K/A Catalog and Examiners' Handbook in developing an appropriate content sample.
- Proper compliance with associated Examiner Standards and use of ES forms.
- Use of facility reference material in examination construction.
- Use of the computerized examination question bank (EQB).
- Development of testing objectives.
- Guidelines on question construction of all format types. (e.g., short answer, multiple choice).
- Proper methods of item review and critique.
- Proper grading procedures.
- Simulator capabilities and limitations.
- Candidate observation and questioning techniques.
- Documentation of candidate performance.

Assessment: Participants must satisfactorily complete all workshop exercises and the examination.

Waivers: None allowed.

Optional Courses:

1. Power Plant Engineering Course (E-110)

   This two-week course is designed to provide the student with an understanding of the practical aspects of power plant operation. Emphasis is placed on the use and operation of various types of equipment (valves, valve operators, pumps, instrumentation, controllers, generators, motors, breakers, etc.) rather than design. When topics such as physics, chemistry and heat transfer are discussed, their relationship to basic reactor operation and the nuclear plant cycle are stressed.

   Assessment: LETs attending this course must achieve an overall course grade of at least 70%.

   Waivers: Not applicable. This course can be scheduled at local management's OPTION, based upon the training and experience of the LET.

2. Integrated Facility Operations

   This course consists of one week of training on plant evolutions on the simulator. Evolutions will include an entire startup, shutdown, and performance of surveillance tests.

   Assessment: There are no examinations for this course.

   Waivers: Not applicable; this course is OPTIONAL.

3. Site Access Training Course (H-100)

   This course provides the student with a generic understanding of radiation types, quantities and units, radiation protection regulations, control of radiation, radiation monitoring instruments, personnel decontamination, use of protective clothing, industrial safety and hygiene and security and emergencies.

   Assessment: Students must pass a written examination.

   Waivers: Not applicable; this course is NOT REQUIRED for certification, but is highly recommended to facilitate unescorted site access.

SIGNATURE CARD 2

Formal/Classroom Training Program

NAME: _____

VENDOR (CIRCLE): GE W CE BW NPR

REQUIREMENTS	INITIALS	DATE
1. Technology Training (*)		
a. Basic Systems Course	_____	_____
b. Advanced Technology Course	_____	_____
c. Simulator Course	_____	_____
d. EOP Course	_____	_____
2. Examination Techniques Training	_____	_____

(*) If these requirements are waived by the BC, LOLB, then enter "WAIVED" in place of a "DATE" and attach a copy of the authorization letter.

OPTIONAL TRAINING		
1. Power Plant Engineering (E-110)	_____	_____
2. Integrated Facility Operations	_____	_____
3. Site Access Training (H-100)	_____	_____

VERIFICATION

The LET's Section Chief/Supervisor shall review this Signature Card to ensure completion.

_____ _____
(Sign here and on Master Card) (Date)

QUALIFICATION GUIDE 3

Familiarization Training

The purpose of familiarization training is to provide LETs with an opportunity to acquaint themselves with the duties and responsibilities of licensed operators through a program that includes self study of procedures, direct observation of operator activities and actual or simulated performance of a variety of operator tasks.

A complete description of the familiarization training program, including scope, requirements, tasks, learning objectives, exercises, and all worksheets is included in Appendix A of this Journal. The "Familiarization Training Manual" is to be used as a stand alone document during this training phase but, when complete, should be retained with this Journal as part of the LET's permanent training record.

The signature card for this Qualification Guide is to be used in conjunction with the checklist in Section 8 of the Appendix.

Assessment: The LET's SC/Supervisor shall interview the LET to ensure an adequate understanding of the topics covered in Appendix A, the "Familiarization Training Manual."

Waivers: The Chief, LOLB can waive part or all of this requirement based upon Regional (or contractor) management's written recommendation and justification.

SIGNATURE CARD 3

Familiarization Training

NAME: _____

REQUIREMENTS

1. "Familiarization Training Manual" prepared — Initials _____ Date _____

   Facility: _____

   Vendor (Circle): GE W CE BW NPR

2. "Familiarization Training Manual" approved by Section Chief/Supervisor — Initials _____ Date _____

3. On-site Training Dates: From _____ To _____

   From _____ To _____

4. Familiarization training oral discussion with certified chief examiner — Initials _____ Date _____

VERIFICATION

The LET's Section Chief/Supervisor shall interview the LET to ensure an adequate understanding of the topics covered in Appendix A, "Familiarization Training Manual."

_____ _____
(Sign here and on Master Card) (Date)

QUALIFICATION GUIDE 4

On-The-Job Training

This training will familiarize the LET with the administrative documents and procedures associated with operator licensing. Contract examiners should spend approximately one week in an NRC Regional Office during their certification training program. That time should be scheduled to facilitate the final review and approval of the LET's written and operating certification examinations and, if possible, should permit the LET to participate in the written exam review conducted by the facility licensee. This office visit will also allow the LET to complete the other training topics required for this qualification guide.

Requirements:

1. Docket File Maintenance

   The Operator Licensing Assistant (OLA) should brief LETs on the licensed operator docket filing system. Topics should include the organization and content of the licensed operator docket files, the purpose and use of the Operator Licensing Tracking System (OLTS), and legal requirements associated with the docket files. The LET should practice OLTS input, output, report generation, license production and the use of WYLBUR.

   The LET should discuss Privacy Act and Freedom of Information Act requirements, as they relate to individual docket files, with the Section or Branch Chief.

2. Licensing Process

   With the help of a certified chief examiner and an OLA, track a licensing action from the receipt of an application to the issuance of a license or denial. Discuss such topics as:

   - Timely submittal
   - Application requirements
   - Docket number assignment/OLTS interface
   - Preparation of license/denial
   - Section/Branch Chief review
   - Docket file
   - Quality Assurance requirements of NUREG 1021
   - Examination Reports
   - Contractor Evaluation Reports

3. Waiver Process

With the help of a certified chief examiner and an OLA, track an examination waiver request from receipt to final disposition. Discuss such topics as:

- Waiver submittals
- Notification of applicants
- Routine Regional waivers
- LOLB approval requirements

4. Appeals Process

With the help of a certified chief examiner and an OLA, track a written examination and operating examination appeal from receipt to final disposition. Discuss such topics as:

- Legal requirements
- Examiner Standard requirements
- Documentation
- Transmittal of results
- Lessons learned
- LOLB/DLPQ/NRR interface

5. Examination Question Bank

The LET should read the EQB User's Guide and discuss operation of the EQB to become familiar with the operation of the bank. The LET should use the EQB to construct his/her written certification examination.

The LET must prepare a request and obtain Section Chief approval for access to the INEL EQB. Questions regarding access to the EQB should be addressed to the EQB coordinator at LOLB.

6. Examination Observation

The LET shall observe a minimum of three examination trips; one of the observation trips should be a requalification examination. The LET should observe all activities associated with the administration of those exams, including the requalification examination preparation week, the review and administration of the written examinations, the administration of as many SRO-Instant and RO operating examinations as possible by as many different examiners as possible, and the exit meetings. To the extent possible, the observation assignments should be with different examiners and one assignment should be to another Region so the LET may observe a variety of techniques and styles.

Supervisors should make every effort to assign their LETs' requal examination observation trip(s) before their initial certification examination; if necessary the LET should observe an exam in another Region. If circumstances prevent the LET from completing the requal exam observation prior to certification, then the Regional Branch Chief may postpone that observation trip to the first opportunity after the examiner's certification date. This extension should not exceed six months in duration, and the justification should be documented in the individual's training record. The examiner shall not participate in the administration of requalification examinations until he/she has completed a requal exam observation trip.

The LET should discuss his/her observations regarding examination procedures and differences in technique with the chief examiner and with his/her Section Chief/supervisor.

These observation trips also provide an opportunity for the LET to administer practice examinations, after which the examiner of record can provide performance feedback for follow-up by the LET and his/her supervisor. Such practice exams shall be subject to the following restrictions: all other training requirements shall be complete; the certified examiner of record must be fully prepared for the examination and take over if necessary to establish an adequate licensing basis; and the Regional Branch Chief must authorize the administration of practice examinations in that Region.

Assessment: This guide is completed by a satisfactory discussion of all topics with the SC / Supervisor or a designated alternate if the SC is not a certified examiner.

Waivers: Regional BCs and contract managers may request waivers of all or part of the OJT training based upon the LET's prior training and experience. LOLB will evaluate the Region/lab's written justification and grant waivers as appropriate.

SIGNATURE CARD 4

On-The-Job Training

NAME: _____

REQUIREMENTS			INITIALS(*)	Facility	DATE
1.	Docket File Maintenance				
2.	Licensing Process				
3.	Waiver Process				
4.	Appeals Process				
5.	Examination Question Bank				
6.	Examination Observation (Should be on same vendor for which certification is sought.)	(1)			
		(2)			
		(3)(#)			
	Initial Operating Tests	(SRO-I)			
		(RO)			
	Exit Meeting	(Init)			
		(Requal)			
	Requalification Exam (#)	(Prep)			
		(Optest)			

(*) These items can be signed off by any certified chief examiner.
(#) The Regional BC may delay until six months after initial certification.

VERIFICATION:

The LET's Section Chief/Supervisor shall interview the LET to ensure an adequate understanding of these operator licensing programs and examination practices.

_____ _____
(Sign here and on Master Card) (Date)

QUALIFICATION GUIDE 5

Certification Examinations

This purpose of the certification examination is to conduct a final assessment of the LET before allowing him/her to independently conduct licensing examinations. All other training requirements in this Qualification Journal shall be complete and verified by the LET's Section Chief prior to administering the certification operating test.

As discussed under "On-the-job Training," contractor LETs should schedule a one-week trip to a Regional Office for the purpose of reviewing and finalizing their certification examination packages. This will facilitate the incorporation of Regional comments by allowing the LET to interface directly with the NRC chief examiner and will permit the LET to participate in the facility pre-review.

Examination Content:

The LET shall conduct a complete initial licensing certification examination, including the written, walk-through and simulator categories. The written and operating tests need not be done at the same facility if it is more convenient to schedule them separately. The operating test shall be administered to an instant SRO or RO candidate. The certification examinations will incorporate all aspects of the examiner's responsibilities and duties, including preparation of the written, walk-through and simulator examinations (including the incorporation of facility comments), and the administration and grading of the examinations. The LET will use the procedures outlined in NUREG-1021 and complete all required actions and associated forms.

Assessment:

All material generated for this certification process will be reviewed by the SC or a designated chief examiner if the SC is not certified. The SC or designated chief examiner will also observe and evaluate (audit) the LET during the administration of the operating test and document the LET's performance by filling out an Operating Test Audit Form. The SC will review the audit results and recommend either certification or additional training for the LET. If the SC recommends certification and the Regional Administrator (RA) has delegated authority for examiner certification to the Branch Chief (BC), then the BC may certify the LET by signing the Master Signature Card. If the RA has retained examiner certification authority, then the BC must concur in the SC's recommendation by signing this and the Master Signature Card before the Qualification Journal is forwarded to the RA for signature.

Waivers:

Written and operating certification examinations are REQUIRED for all initial examiner certifications and for cross-certification between power and non-power reactor technologies (and vice versa). Certification examinations are OPTIONAL for cross-certification on additional power reactor vendors.

SIGNATURE CARD 5

Certification Examinations

NAME: _____

VENDOR (CIRCLE): GE W CE BW NPR

REQUIREMENTS (*)			INITIALS	DATE
1.	Written Examination level(s):	RO SRO		
	a. Facility Name: _____			
	b. Examination QA Review (Chief Examiner complete ES-401-3)		_____	_____
	c. Facility Review and Comment Incorporation		_____	_____
	d. Examination Grading		_____	_____
2.	Operating Test level:	RO SRO		
	a. Facility Name: _____			
	b. Test Preparation (Form ES-301-7, 8, 9)		_____	_____
	c. Test Administration (Operating Test Audit Form)		_____	_____
	d. Test Documentation		_____	_____

(*) These requirements should be evaluated and signed off by the LET's Section Chief. If the LET is a contractor or if his/her SC is not certified on the vendor for which certification is sought, then a certified chief examiner may sign these requirements.

VERIFICATION / RECOMMENDATION

The LET's Section Chief/Supervisor should review this Signature Card to ensure completion and recommend certification here and on the Master Signature Card.

_____ _____
Signature Date

CHIEF EXAMINER (CE) QUALIFICATION GUIDE

This purpose of this qualification guide is to ensure that examiners assigned to lead NRC examination teams possess the requisite administrative skills and the regulatory maturity to execute the CE's responsibilities. This qualification guide only applies to NRC examiners; contract examiners will not be assigned CE duties. Those NRC examiners who were "certified" as CEs (i.e., they satisfactorily performed the duties of a CE during an initial or a requalification examination assignment) before the date on which this Qualification Guide was issued are exempt from the guidelines stated herein.

The CE under instruction should coordinate a complete initial licensing examination and a complete requalification examination under the supervision and guidance of an experienced CE. These examinations should incorporate all aspects of the CE's responsibilities and duties, including review of the license applications, preparation of the written, walk-through and simulator examinations, administration and grading of the examinations, conduct of the exit meeting, and development of the examination report.

Supervisors should make every effort to assign both CE under instruction trips before putting the examiner in charge of an examination team. If circumstances necessitate assigning CE responsibility to an examiner before he/she has completed under instruction trips for both initial and requal exams, then the Regional RC may authorize the examiner to perform CE duties for the type of examinations for which instruction has been completed. The examiner shall not act as the CE during the administration of those types of examinations for which he/she has not completed instruction.

All certified examiners and CEs, in particular, are encouraged to attend the OPTIONAL training courses identified on the CE signature card. While these courses are not required for certification, supervisors should attempt to schedule these courses for their examiners as time permits.

Assessment:

All examination material generated for the CE certification process will be reviewed by the CE of record for that examination assignment. Any deficiencies noted during the under instruction assignments should be brought to the SC's attention and discussed and remediated with the CE candidate before his/her next assignment. If significant deficiencies are identified, then additional under instruction trips should be scheduled.

The SC should interview the CE candidate to ensure that he/she has an adequate understanding of the duties and responsibilities associated with leading an NRC examination team. If possible, the SC should act as the CE of record during the CE candidate's last under instruction examination trip prior to assignment as the CE.

Waivers:

The Chief, LOLB may waive all or part of the CE qualification requirements, based upon the individual's prior training and experience and adequate written justification from the Regional Branch Chief.

CHIEF EXAMINER (CE) CERTIFICATION SIGNATURE CARD

NAME: _____ START DATE: _____

REQUIREMENTS (*)	INITIALS	DATE
1. Act as a CE under instruction on AT LEAST ONE initial exam.		
a. Coordinate exam preparations (Forms 201-1; 401-3; 301-7, 8, 9)	_____	_____
b. Review license applications	_____	_____
c. Coordinate exam administration	_____	_____
d. Conduct exit meeting	_____	_____
e. Coordinate post-exam activities (Form 501-1)	_____	_____
2. Act as a CE under instruction on AT LEAST ONE requal exam.		
a. Coordinate exam preparations	_____	_____
b. Coordinate exam administration	_____	_____
c. Conduct exit meeting	_____	_____
d. Coordinate post-exam activities	_____	_____

(*) These requirements can be signed off by any certified CE. The Regional BC may authorize split certifications on initial and requal.

OPTIONAL TRAINING

1.	Leading NRC Work Teams (OP)	_____	_____
2.	Effective Team Building (Ind. Learning Cen. #A160)	_____	_____
3.	Leading Effectively (Ind. Learning Cen. #C430)	_____	_____
4.	Examiner Refresher Techniques	_____	_____
5.	Gathering Inspection Information Through Interviews (OP)	_____	_____
6.	Fundamentals of Inspection (G-101)	_____	_____

VERIFICATION / RECOMMENDATION

The SC shall interview the examiner to ensure an adequate understanding of CE responsibilities and management's expectations.

_____ _____
Signature Date

CROSS-CERTIFICATION SIGNATURE CARD (OPTIONAL)

NAME: _____ START DATE: _____

VENDOR (CIRCLE): GE BW CE W NPR

REQUIREMENTS	INITIALS	DATE
1. TTC Technology Training		
a. Systems Course / Equivalency Test, and	_____ (SC)	_____
Advanced Course / Equivalency Test; or	_____ (SC)	_____
Cross-Qualification Course (CE / BW only)	_____ (SC)	_____
b. Simulator Course	_____ (SC)	_____
c. Emergency Procedure Guidelines Course	_____ (SC)	_____
2. Certification Audit (*) (Vendor-certified chief examiner)	_____ (SC)	_____
3. Develop Written Examination (*)	_____ (SC)	_____

(*) Required for Power/NPR cross-certification; otherwise optional.

OPTIONAL TRAINING

1. Integrated Facility Operations Course	_____	_____
2. Operating Test Observation	_____	_____

VERIFICATION /RECOMMENDATION

The examiner's Section Chief/Supervisor should review this Signature Card to ensure completion and recommend certification here and on the Master Card.

_____ _____ _____

Signature Date

MAINTENANCE OF EXAMINER CERTIFICATION CARD

NAME: _____ CERTIFICATION DATE: _____

REQUIREMENTS

1. Enter successive refresher training courses below. Refresher training is required at least every two calendar years. If the period between two successive refresher training sessions is greater than two calendar years, then written authorization from LOLB is required as discussed in paragraph J of LOLB-MC-170.

COURSE	INITIALS	DATE

2. Enter successive performance audits below. Audits are required at least once each calendar year in accordance with paragraph J of LOLB-MC-170. Audits should be performed by the examiner's supervisor whenever possible and shall be documented on an Operating Test Audit Form.

FACILITY / EXAM TYPE	AUDITOR	DATE

APPENDIX A

Familiarization Training Manual

1. Introduction

This training component is intended to provide the Licensing Examiner Trainee (LET) with an opportunity to become familiar with the duties and responsibilities of licensed operators through a program that includes self-study of procedures, observation of activities and actual and simulated performance of a variety of operator tasks. It is expected that this active participation will provide LETs with a better understanding of nuclear facility operations, particularly with respect to the operators' role in ensuring safe operation.

Most of the activities in this manual correspond to administrative topics on the NRC operating examination. Each activity includes a statement of purpose, tasks to be accomplished, learning objectives to be achieved and exercises that relate the activity to licensing examination development. By increasing the LET's understanding of the operators' role, a foundation will be developed for determining important RO and SRO knowledge and ability requirements. This will aid LETs in their future development of licensing examinations.

2. Scope

The activities in this manual involve administrative issues, use of procedures, performance and observation of surveillances and shift routines, maintenance of a variety of logs and records, the simulation of abnormal and emergency tasks, and the study or simulation of control room and local activities. The specific requirements for each of the nine training modules are found in Section 8 of this Manual.

3. Participation / Waivers

All LETs must participate in familiarization training unless previous experience allows a waiver of this training by the Chief, LOLB. Some examples of previous equivalent experience are:

- Having served as a control room operator or a staff engineer involved in the routine activities of a facility, or experience as a non-licensed operator if duties involved control room presence.
- Participation in license training if it included control room observation time.
- Having experience as a resident inspector at an operating facility or as a Regional operations inspector.

- Vendor startup engineer certification.

4. Scheduling

Familiarization training is intended to complement the technology training provided by the TTC and to relate that technical background to plant operations and the process of license examination development and administration. Therefore, it is recommended that LETs be scheduled for this training between the technology training program and the Examination Techniques course.

Completion of all the activities outlined in Section 8 should take one to two weeks of on-site time depending on the individual's background. Those activities that are limited to procedure reviews and do not involve on-site exercises can be completed in the office by reviewing the appropriate facility procedures and instructions.

The program shall be developed using the guidance in Section 5 of this Manual and scheduled with the following in mind:

a. The time dedicated to the on-site training need not be consecutive, but should be in at least one-week increments.

b. Efforts should be made to select a multi-unit site that will expose the LET to the largest variety of plant operations. However, because of the difficulty involved in doing this, all tasks need not be done at the same facility. It may be necessary to schedule trips to different sites to achieve maximum benefit based on the operating mode of the various facilities. The facility(ies) selected for observation training should expose the LET to operations at 20% power or greater and significant events such as fuel loading, surveillance testing, power changes, reactivity manipulations, and plant startups or shutdowns.

c. The selected site's simulation facility may be used to accomplish tasks and may actually enhance the performance of some tasks.

d. If the LET has not completed the NRC's Site Access Training program, then he/she will have to attend the facility's complete General Employee Training program in order to be granted unescorted access to the facility.

5. Training Plan Development

To maximize the benefit of the training and ensure efficient utilization of the LET's time, the Section Chief/supervisor and the LET shall develop a schedule of activities prior to beginning the training. The on-site activities should also be coordinated with the resident inspector at the applicable facility. In the case of contractor LETs,

the NRC Contract Technical Monitor shall be kept informed of proposed and completed training. Direct contact with facility licensees will be coordinated by the Technical Monitor through the applicable Region.

Using the guidance in Section 4 of this Manual, the LET's Section Chief/supervisor shall complete the following actions prior to the start of any on-site training:

a. Select plant parameter verifications to be assigned and record them in Section 8.2.c.

b. Develop a scenario involving emergency conditions, at the "alert" level greater, for use by the LET in the Emergency Plan training module. As described in Section 8.4, the scenario shall require the LET to classify the event and simulate the performance of other Emergency Plan actions required of control room personnel. Describe the scenario in the area marked "event" in Section 8.4.

c. Select a minimum of 10 tasks (job performance measures) associated with five different systems; the tasks need not be divided evenly among the five systems. At least four of the tasks should require local actions outside the control room. Record the systems and tasks in Section 8.8. The intent of this section is not to duplicate TTC system instruction, but to enhance the LET's knowledge of system operations in areas that a classroom environment cannot teach. The tasks should concentrate on activities usable to the individual from an examiner's point of view. There is no set list of tasks from which to chose, however the following criteria will help to select the systems and tasks.

   (1) The five systems should provide a cross-section of plant safety functions, such as decay heat removal, emergency core cooling, instrumentation and control, containment, and auxiliary systems. ES-302 and NUREGs 1122/1123 should be used to determine plant systems that are safety-related and contain tasks with high K/A importance ratings.

   (2) This exercise should include safety-related tasks performed inside and outside the control room and should expose the LET to situations requiring operator interfaces with other departments. The tasks should require active involvement by the LET (i.e., can they be simulated?) and they should enhance the LET's understanding of the system and the operators' role in system operation. Suggested possible tasks include the walk-through or simulation of the following:

      - System lineups
      - System start-ups and shutdowns

- Manual operation of systems that are normally operated in automatic
- Operability tests and other system surveillances
- Abnormal evolutions involving the system
- Establishing initial conditions for operating the system
- Restoring or removing a system from service

d. Review all training activities contained in this manual with the LET and develop a schedule for their completion. Ensure that the LET understands what is expected during all aspects of the required training.

6. Assessment

The LET's Section Chief/supervisor shall review the LET's completed record of activities accomplished to ensure that each element of the program was successfully performed. The Section Chief/supervisor should discuss the key tasks and exercises that were performed under each module of the familiarization training program to ensure that the LET has an adequate understanding of the role of the operator and the examiner in that area. Special attention should be given to any significant events that were observed, such as a unit trip or a safeguards actuation.

The completion of each module should be documented by initialing the checklist at the beginning of Section 8.

7. General Requirements/Guidelines

a. LETs shall observe all rules and regulations in effect at the facility.

b. LETs shall not actually operate plant equipment.

c. LETs shall not request any equipment to be operated, nor any tests or surveillances to be conducted.

d. LETs should obtain unescorted access to the facility.

e. LETs should conduct routine tours of the facility to familiarize themselves with local operations, procedures, and equipment.

f. LETs should keep a written record of all requirements of this Manual as they are completed.

g. LETs should record major plant transients and events observed in Section 8.10.

h. LETs should observe all plant evolutions that are applicable to the operators' job, particularly those that are nonroutine, even at the expense of other requirements of this Manual.

8. Specific Training Requirements/Modules

This Section outlines the specific tasks and activities to be performed during the familiarization training program. Each of the first nine training modules includes a purpose statement, a description of the tasks to be performed, the associated learning objectives to be achieved, and any exercises to be completed. The tenth module is simply a convenient place to record the major events and activities witnessed during the on-site observation period. The training modules are listed below to provide a means for the Section Chief/supervisor to document the completion of each module.

If the facility at which the on-site familiarization training is performed uses computerized forms for its operations paperwork, then it may be necessary for the LET's SC/supervisor to modify the exercises associated with some of the training modules to ensure the training value of the exercise is not diminished excessively.

Date Completed	SC Initials	Section
_____	_____	8.1 Control Room Administration
_____	_____	8.2 Plant Control/Records
_____	_____	8.3 Radiation/Contamination Control
_____	_____	8.4 Emergency Plan
_____	_____	8.5 Operations/Security Interface
_____	_____	8.6 Fuel Handling
_____	_____	8.7 Observation of Shift Routine
_____	_____	8.8 Local Systems And Operations
_____	_____	8.9 Surveillance Testing
N/A	N/A	8.10 Major Events And Activities

8.1 Control Room Administration

Purpose: To become familiar with the various administrative procedures routinely performed by the control room operations staff.

a. Conduct of Operations

Task:

Read the procedure controlling plant and operator conduct. This procedure is typically titled "Conduct of Operations" but the name can differ from plant to plant.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Define a temporary change to a procedure and describe how to complete one.

(2) Describe the required method for changing the intent of a procedure.

(3) State the requirement for performing procedural steps out of order.

(4) State the major duties and responsibilities of the RO, SRO and STA with respect to changing procedures.

Exercise:

Using the facility's forms and the administrative procedure(s), complete a temporary change to one emergency or abnormal procedure. This is an exercise only and is not to be signed by plant personnel. Retain the completed forms with this manual for future review.

b. Tagout/Clearance Procedures

Task:

Read the procedure controlling the tagging and clearance of equipment which needs to be removed from service.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Describe when a tagout/clearance is needed and the basic procedure for creating a tagout/clearance.

(2) Identify who is responsible for initiating and writing the necessary paperwork for the tagout/clearance.

(3) State who has the authority to issue and approve a tagout/clearance.

(4) Describe the facility procedure for tracking work performed under a tagout/clearance

(5) Describe the basic procedure for removal of an installed tagout/clearance, including all approvals needed.

(6) Describe the system used to track all current and completed tagouts/clearances.

Exercises:

Using the facility's procedures, prints, and forms, construct a tagout/clearance for one mechanical AND one electrical system OR one combination mechanical/electrical system.

All equipment/systems chosen must be safety-related. This is an exercise only and is not to be signed by plant personnel. Assume that the equipment is to be taken out of service. As part of the exercise, initiate at least one of the tagouts/clearances with a work request (refer to the "Maintenance" activity description, Section 8.1.d, of this manual).

For this exercise, use all required forms, and indicate all the necessary tags. In the area below, indicate the components or systems chosen and the P&ID numbers used to create the tagout/clearance. Retain the completed forms and tags with this manual for future review.

System/Components selected: 1._____

2._____

P&IDs Used: _____

_____

c. Jumper/Lifted Lead

Task: Read the procedure controlling the use of Jumpers/Lifted Leads.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task the LET shall be able to:

(1) Define a jumper/lifted lead and the basic procedure used when a jumper/lifted lead is needed.

(2) Identify who is responsible for initiating and creating the jumper/lifted lead paperwork.

(3) State who has the authority to approve a jumper/lifted lead.

(4) Describe the basic procedure for removal of an installed jumper/lifted lead including all approvals needed.

(5) Describe the system used to track all current and completed jumper/lifted leads.

(6) Describe how a jumper/lifted lead could violate the TS.

(7) Indicate how jumpers/lifted leads are shown on P&IDs.

(8) Describe the facility procedure for completing a 10 CFR 50.59 review of the tagout/clearance.

Exercises:

Using the facility's forms and procedures, complete a jumper/lifted lead request for one mechanical component and one electrical circuit.

Both items must be safety-related. To complete these requests, complete the request form and write the tags/procedure for installation of the jumper/lifted lead. This is an exercise only and is not to be signed by plant personnel. Retain these forms in this manual for future review.

In the space below, indicate the systems/components selected and the P&IDs used in the exercise.

Systems/components selected: 1. _____

2. _____

P&IDs used: _____

d. Maintenance

Task:

Read the procedure controlling maintenance and the use of work requests.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State when a work request is necessary and any work that can be performed without one.

(2) State who initiates a work request and who is authorized to approve one.

(3) Describe the system used to track work requests.

(4) Describe how the system indicates safety-related equipment and how Technical Specification violations are avoided.

Exercises:

Using the facility's procedures and forms, construct a work request for at least one of the components for which you wrote a tagout/clearance. Record the tagout/clearance chosen below. This is an exercise only and is not to be signed by plant personnel. Retain the completed work request with this manual for future review.

Tagout/Clearance Work Request: _____

e. Key Control

Task:

Read the procedure controlling the important keys in the facility.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State why key control is necessary.

(2) State what keys are controlled, who has responsibility for the keys and who controls the key to the key locker.

(3) Describe how keys are checked out.

(4) Describe how a missing key is discovered, and the procedure used if a key is discovered missing.

Exercises: None.

f. Short Term Information

Task:

Read the facility procedure(s) controlling the use of short term information sources (night orders, information tags, standing orders etc.). List the title and number of the procedure(s) read. Locate and review all of the short term information sources currently in effect at the facility.

_____

_____

_____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the uses of each type of short term information source and the individual responsible for entering the new information in each.

(2) State how short term sources interact with approved sources such as procedures and Technical Specifications.

(3) Describe how the facility insures that personnel read the short term information.

(4) Describe the system used to remove outdated information.

Exercises: None.

8.2 Plant Control/Records

Purpose: To familiarize the LET with the major procedures, charts, logs and forms used to monitor the daily plant status at power or shutdown.

a. Mode Changes

Task:

Read the Technical Specifications section covering mode changes. Read the administrative procedure controlling the documentation of mode changes and locate where all mode change checklists are stored. List below the Technical Specification section read and the procedure name/number controlling mode changes.

_____

_____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the Technical Specification modes of operation.

(2) State all of the requirements necessary to be met before a mode change can occur.

Exercises: None.

b. Valve Lineups

Task:

Read the administrative procedure controlling the use and documentation of valve lineups. Locate where all valve lineup checklists are stored.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the purpose of valve lineups and when they are required.
(2) State who can perform a valve lineup and what signatures are found on the valve lineup sheet.

Exercises: None.

c. Plant Parameter Verification

Task:

Select and read 3 procedures that control the conduct of plant parameter verifications/calculations. For example:

(1) Boron addition/dilution for a power change
(2) Power change using recirculation flow control
(3) Estimated critical position calculation
(4) Shutdown margin calculation
(5) Leak rate calculation

List the procedure names/numbers selected below. Additional ones may be assigned by the Section Chief.

(1) _____

(2) _____

(3) _____

(4) _____

(5) _____

(6) _____ _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Explain the operator's role in making the calculations/ verifications.

(2) State the normal method of performing the verification. Describe how the verification can be performed manually if it is normally accomplished in other ways.

(3) State the frequency with which verifications are performed.

(4) Identify the individual responsible for completing verifications.

(5) Identify the types of assistance required by the operator to complete verifications.

(6) Describe the actions to be taken in the event that a calculation/verification is out of the prescribed limits.

Exercises:

Choose two of the procedures selected above and, using the procedure and all facility forms, complete the forms and all required calculations. These are exercises only and are not to be signed by plant personnel. List the selections below and retain the completed forms with this manual for future review.

(1) _____

(2) _____

d. Heat Balances (calorimetric)

Task:

Read the procedure controlling the performance of heat balance calculations.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the purpose of heat balances and how often one must be performed.

(2) State the individual responsible for performing a heat balance, how it is normally accomplished, who reviews it and any required signatures.

(3) State the allowable tolerance of a heat balance when compared to actual indicated power and the actions taken if the calculated value is outside the allowable tolerance.

(4) State how the operator can perform a primary and secondary manual heat balance using only control board indications. State the control board indications used for each heat balance.

Exercises:

Perform a manual heat balance calculation using control board indications and compare the results of your heat balance with the actual indicated power. Record the results below.

Calculated Power: _____ Indicated Power: _____

8.3 Radiation/Contamination Control

Purpose: To familiarize the LET with the practices and procedures used to control contamination and the exposure of personnel to radiation.

a. Radiation Exposure and Control

Task:

Read the facility's radiation protection procedure(s) for the control of personnel exposure and the spread of contamination.

Record the procedure(s) name/number: _____

_____

Learning Objectives:

Upon completion of the task the LET shall be able to:

(1) State the administrative exposure limits for radiation workers and non-radiation workers at the facility and explain how they compare with those required by 10 CFR 20.

(2) State the extended radiation worker exposure limits and who must approve them.

(3) Describe ALARA and the method of facility implementation.

(4) Describe the method for recording and tracking radiation exposure. State how far back an individual's radiation history is recorded and how they are informed of their current individual exposure.

(5) State the actions taken if an individual exceeds the various exposure limits, including administrative and 10 CFR 20 limits.

Exercises: None.

b. Radiation Monitoring Equipment

Task:

Read 10 CFR 20 and all applicable facility procedures controlling the use of personnel radiation monitoring equipment. List the name(s)/-number(s) of all facility procedures read:

_____

_____

Learning Objectives:

Upon completion of the task the LET shall be able to:

(1) Define restricted and unrestricted areas. State the requirements for monitoring restricted and unrestricted areas

(2) State the facility requirements for monitoring restricted areas including personnel monitoring.

(3) Describe the hand-held monitoring equipment available to facility personnel and their basic use.

(4) Describe all of the different radiation monitors located at contamination control access points, such as the auxiliary building, and what type of radiation each instrument detects.

Exercises:

Tour the facility and list below all of the radiation monitoring equipment used. Include any apparatus worn individually, installed personnel monitors and all hand-held portable equipment. Do not include detectors installed in systems used to detect process radiation levels or area radiation monitors. Include in the list for each the type of detector used (GM, Scintillation etc.) and what it monitors.

_____

_____

_____

_____

_____

_____

_____

_____

c. Radiation Work Permits (RWPs)

Task:

Read the procedure controlling the use of RWPs.

Record the procedure name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Describe the function of an RWP and when one must be used.

(2) State who initiates an RWP, the authorization path for signatures, and where it is kept while active.

(3) State how often an RWP is updated and why.

(4) State how an RWP is closed out.

Exercises:

Using the facility's procedure/forms, complete an RWP for a complex hypothetical job. This is an exercise only and is not to be signed by plant personnel. Keep the completed RWP with this manual for review.

d. Liquid/Gaseous Radioactive Releases

Task:

Read all procedures controlling the release of radioactive liquids and gases.

Record the procedure(s) name/number: _____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the requirements for radioactive releases from the facility.

(2) Describe all of the paperwork that must be completed in order to perform either type of release and the path the paperwork must take to receive all authorization signatures.

(3) Describe how to close out the paperwork after the release is done.

Exercises:

Using the procedure and all associated facility forms, complete all paperwork for either a liquid or gaseous release. This is an exercise only and is not to be signed by plant personnel. Retain this paperwork with this manual for future review.

Describe release (type, size, pathway etc.): _____

_____

8.4 Emergency Plan

Purpose: To become familiar with the Emergency Plan (EP) and the associated operator responsibilities.

Tasks:

1. Read the facilities Emergency Plan and all associated procedures and/or documents. Record the name/number of all documents read:

_____

_____

_____

_____

2. Tour all on-site facilities associated with the activation of the EP and locate all procedures and emergency equipment used.

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the purpose of the EP.

(2) Describe all parts of the EP and the purpose of all associated supporting documents.

(3) Use the EP to classify an event.

(4) Describe the different levels of authority with the EP and who is responsible to fill the different levels.

(5) Describe the emergency communication system(s) used, who is notified of an emergency and where this communication equipment is located.

(6) Locate all emergency facilities on- and off-site, including the Technical Support Center (TSC), the Operations Support Center (OSC) and the Emergency Operations Facility (EOF). Locate all emergency equipment associated with the EP but especially all in the TSC and EOF.

(7) Describe the plant parameter information sources available to all personnel associated with any event, where it is located and basically what information it supplies.

Exercises:

Using the emergency event designated below by the Section Chief, complete the following exercise. This is an exercise and is not to involve facility personnel. If additional answer pages are needed, retain them with this manual for future review.

Event: _____

_____

_____

(1) Classify the event in accordance with the Emergency Plan

Classification: _____

(2) State the immediate responsibilities of all control room personnel. (RO at the controls, SRO in the control room, Shift Supervisor, STA etc.)

(3) State all who would be notified for this event in order and in what time frame. State who would do the notification.

(4) State what emergency centers would be activated for this event and in what time frame they would need to be staffed.

(5) State the staff makeup of the technical support staff.

(6) Identify the types of E-Plan information available to the operator on SPDS and all other information sources that would indicate plant status.

(7) Describe the role of the Operation Support Center in the region and at headquarters for this event.

8.5 Operations/Security Interface

Purpose: To familiarize the LET with the facility's security procedures and the operators' security responsibilities.

Tasks:

(1) Read any available procedures pertaining to security (most security procedures contain Safeguards information and may not be available for review). Record the name/number of each :

_____

_____

(2) Tour the site and observe the measures taken to ensure security is maintained. If possible, tour the site's security facilities and monitoring stations. List the facilities toured below:

_____

_____

Learning Objectives:

Upon completion of the tasks, the LET shall be able to:

(1) Describe the different security measures taken to safeguard the facility.

(2) Describe the difference between the following security areas and how access to each is controlled: owner controlled area, protected area, vital area.

(3) State the duties of an RO and SRO with respect to maintaining facility security.

Exercises: None.

8.6 Fuel Handling

Purpose: To familiarize the LET with how fuel is handled, the procedures used and the different levels of responsibility.

Tasks:

(1) Review pertinent procedures for fuel handling and refueling of the reactor. Include any emergency procedures and the Technical Specifications for fuel handling. Record the name/number of all procedures and Technical Specifications read:

_____

_____

(2) Tour the fuel building noting where the new and spent fuel is stored, how it is stored, all equipment used to handle both kinds of fuel and any support systems which help safeguard the public against the release of radioactivity. If possible, tour containment observing all fuel handling areas and equipment.

Learning Objectives:

Upon completion of the tasks, the LET shall be able to:

(1) State the Technical Specifications and LCOs associated with fuel handling.

(2) State the responsibilities of the SRO and RO in the control room during fuel handling.

(3) State the supervisory requirements both in the fuel building and in containment during fuel handling and who may fulfill these requirements.

(4) Describe the support systems which safeguard the public including radiation monitors. State how each performs to safeguard the release of radioactivity.

(5) Describe all equipment used to handle both new and spent fuel.

(6) Describe the path that new and spent fuel travels in both the fuel building and in containment.

(7) State the immediate action steps required to be taken in the event of a fuel handling casualty and who is responsible for carrying out those actions.

Exercises:

If possible, observe the actual handling of both new and spent fuel in both the fuel building and the containment. Record each major event observed, the date on which the observation was made, and the location. If such observations are not possible, the Section Chief should ensure that an oral discussion of the basic fuel handling procedures is accomplished at the Region. Retain all your records with this manual for future review.

Date	Event

8.7 Observation Of Shift Routine

Purpose: To familiarize the LET with the day to day operation of the facility and watchstander responsibilities.

Tasks:

Coordinate with the resident inspector and any plant management necessary to arrange a full shift of observation for each position listed. This observation should be done one position at a time and should be varied (days, swings, mids) for maximum exposure to various routines. The observation should also be conducted with the plant in different conditions such as at power, cold shutdown, or refueling. An example of a possible set of observations follows:

- RO on day shift with the plant at 100% power.
- SRO on swing shift with the plant in cold shutdown.
- AO on mid shift starting up the turbine.

Each of the following operators is to be observed at least once beginning with the crew meeting and shift turnover until the operator completes the turnover to the next operator. If the operators at that facility are on 12 hour shifts, then the LET is not required to observe the operator from turnover to turnover. The LET may continue to work his/her normal length work day but should attempt to observe some turnovers at both ends of the operators' watch routine.

(1) Reactor Operator at the controls.
(2) Senior Reactor Operator present in the control room.
(3) Senior Reactor Operator either as STA or Shift Supervisor.
(4) Auxiliary Operator in the turbine or auxiliary building.

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) State the responsibilities of each operator observed.

(2) Describe the basic shift duties performed, their interface with the other operators, and lines of authority.

(3) Describe how a shift turnover is performed and its content.

(4) Describe the logs taken and the purpose of those logs.

Exercises:

For each operator observed, make a copy of the following page and record the operator's position, the date, plant conditions at the beginning of the shift and all events and evolutions observed during the course of the shift, including the time of occurrence. Events observed and recorded can be used to satisfy other requirements of this training manual if applicable. Retain all records of the observations with this manual for future review.

Shift Observation Log

Position Observed: _____ Shift: _____

Plant Parameters: Temperature: _____ Press: _____ MWE: _____

Time	Event

8.8 Systems And Operations Outside The Control Room

Purpose: To familiarize the LET with facility operations that take place outside the control room environment.

Task: Using P&ID's, system descriptions and any associated procedures, study the five plant systems listed below and the associated tasks (Job Performance Measures) for each.

	Systems	Assigned Tasks	Date/Time
(1)	_____	_____	_____
		_____	_____
		_____	_____
(2)	_____	_____	_____
		_____	_____
		_____	_____
(3)	_____	_____	_____
		_____	_____
		_____	_____
(4)	_____	_____	_____
		_____	_____
		_____	_____
(5)	_____	_____	_____
		_____	_____
		_____	_____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Locate all system components.

(2) Describe the method of system operation.

(3) Identify the time requirements related to system operation.

(4) Describe crew interactions required to operate the system.

(5) Describe the system's effect and interaction on other plant systems.

(6) Describe the operator duties and knowledge, skills and abilities required to maintain safe system operation.

(7) Describe the logistical problems associated with local plant manipulations.

(8) State any precautions and limitations involved with the procedural requirements for the tasks.

(9) Explain the importance of this task to safe plant operation.

(10) Describe the consequences of incorrect performance of these tasks.

Exercises:

Using P&ID's and procedures, walk through each task (JPM) identified for the above systems. This exercise should be structured for activity inside and outside the control room and should involve some control room interface. When performing the tasks, be particularly aware of the operators that would need to be involved, coordination between operators or difficulties that might be encountered if a casualty was in progress. Record the completion of each system and task by entering the date and time.

8.9 Surveillance Testing

Purpose:

To understand the purpose and method of completing surveillance procedures.

Task:

Using the appropriate procedures and Technical Specifications, read how the facility conducts surveillance testing. Record the names/numbers of all procedures read:

_____

_____

Learning Objectives:

Upon completion of the task, the LET shall be able to:

(1) Explain how surveillances are scheduled and tracked.

(2) Determine post-maintenance testing requirements for an out of service component.

(3) Determine the acceptance criteria for surveillances.

(4) Locate the procedure and Technical Specification Limiting Condition for Operation for a particular surveillance procedure.

Exercises:

(1) During the shift observations, monitor the performance of all nonroutine, safety-related surveillance procedures. Record the surveillance and the observation date below.

_____

_____

(2) Select two safety-related surveillance procedures and simulate the performance of these surveillances, using the associated procedures, forms, etc.. Record the surveillance below.

_____

_____

8.10 Major Events And Activities

In the space below, record the date and time and a brief description of any significant events or activities actually observed while at the facility. Indicate in the description if the event happened during the observation of a shift.

Date/Time Description

U. S. NUCLEAR REGULATORY COMMISSION

OPERATING TEST AUDIT

EXAMINER:	FACILITY:
APPRAISER:	EXAM TYPE:
DATE:	DATE OF LAST APPRAISAL:

RATING FACTORS			RATING FACTORS		
1. EXAMINER STANDARD CONFORMANCE	YES	NO		YES	NO
A. ADMIN. TOPICS (ES-301/G.1)			D. INTEGRATED PLANT OPERATIONS (ES-301/G.3)		
B. CONTROL ROOM SYSTEMS (ES-301/G.2)			2. KNOWLEDGE OF FACILITY/SYSTEMS/PROCEDURES		
1. HEAT REMOVAL			A. SATISFACTORY FACILITY/SYSTEMS KNOWLEDGE		
2. AUXILIARY			B. SATISFACTORY PROCEDURES KNOWLEDGE		
3. ESF			3. ABILITY TO EVALUATE CANDIDATE'S KNOWLEDGE		
4. I & C			A. SATISFACTORY QUALITY OF QUESTIONS		
5. RAD. MON.			B. ASKS FOLLOWUP QUESTIONS WHEN NEEDED		
C. FACILITY WALK-THROUGH (ES-301/G.2)			C. QUESTIONS APPROPRIATE FOR CANDIDATE LEVEL		
1. EMERGENCY/ABNORMAL PROCEDURES			D. TESTED THE CANDIDATE'S BOARDSMANSHIP		

4. EXAMINER'S DEMEANOR (*COMMENT REQUIRED*)

5. EXAMINATION REPORT (ES-303)	YES	NO		YES	NO
A. COMMENTS JUSTIFIED			B. SUMMARY EVALUATIONS ADEQUATELY SUPPORTED		
C. COMPLETE AND ACCURATE REPORT					

6. COMMENTS

(1) For each evaluated area, check the appropriate block.

(2) All NO ratings require a comment. Use additional pages as necessary.