

**Long-Form Checklist for Determining Compliance with DOE
Order 5480.20A**

December 1994

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
GENERIC REQUIREMENTS (New requirements indicated with a *)		
<u>CONTRACTOR REQUIREMENTS DOCUMENT</u>		
*6. Perform periodic systematic evaluations of training and qualification programs IAW DOE-STD-1070-94.		
CHAPTER I GENERAL REQUIREMENTS		
2. TRAINING ORGANIZATION		
One or more organizations are established to be responsible for the training of operating organization personnel.		
*This organization(s) is held accountable for providing facility line management with the support necessary to ensure that personnel in the operating organization are qualified to safely and effectively meet job requirements.		
The responsibilities, qualifications, and authority of training organization personnel (including subcontractors) are documented, and managerial responsibilities and authority clearly defined.		
3. SUBCONTRACTOR PERSONNEL QUALIFICATION		
Subcontractor personnel meet the qualification requirements for the job function to be performed.		
The operating organization ensures that subcontractor and temporary personnel who perform specialized activities such as radiation protection, maintenance, in-service inspection, radiography, and welding are qualified to perform their assigned tasks by properly documenting one of the following:		
a. The satisfactory result of an audit of subcontractor records which relate to qualification of the subcontractor personnel being considered for assignment by the operating organization; or		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
b. Previous verification (within 2 years) of the ability of the subcontractor employee to perform assigned tasks safely and efficiently; or		
c. Successful completion by the subcontractor employee of those segments of the operating organization's qualification program which are considered pertinent to the accomplishment of the task to be performed.		
Subcontractor personnel who do not meet the requirements, for work activities on engineered safety features identified in the facility Safety Analysis Report are supervised by a person who meets the qualification criteria established by the operating organization for conduct of such activities.		
4. PERSONNEL SELECTION		
a. A process for selecting and assigning personnel into the operating organization is established.		
b. DOE approval is required on a case-by-case basis for individuals who do not meet experience requirements for a position but are assigned to the position based on a determination that the overall operating organization is balanced and strong.		
5. QUALIFICATION PROCESS		
a. Qualification requirements for personnel in each functional level are defined based on the criteria in 5480.20A.		
c. Technician and maintenance personnel qualification includes demonstrated performance capabilities (performance demonstrations) to ascertain their ability to adequately perform assigned tasks.		
Participation in continuing training programs is required to maintain and improve their abilities to continue to function safely in the operating organization.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
d. The successful completion of the requalification program and formal requalification of an individual is indicated by signature.		
<i>(THE REMAINDER OF THE REQUIREMENTS OF THIS SECTION (examination requirements) ARE REPEATED ELSEWHERE IN THE ORDER AND NOT REFERENCED HERE)</i>		
e. Qualification may be granted only after assuring that all requirements (including training and examinations as required) and other specified requirements (e.g., medical examination) have been satisfactorily completed.		
f. Qualification of operators and their immediate supervisors is valid for a period not to exceed two years unless revoked for cause (e.g., medical disqualification, performance deficiencies).		
6. CERTIFICATION PROCESS		
a. Certification is governed by written procedures which include requirements for documented assessment of a person's qualifications through examinations and operational evaluations.		
b. Certification may be granted only after assuring that all qualification requirements (including written and oral examinations and operational evaluations) and other specified requirements (e.g., medical examinations) have been satisfactorily completed,		
and management has assured that the person is capable of safely performing all functions of the position.		
Certification is verified by a person or group other than the person or group that provided the training or the candidate's immediate supervisor.		
Certification is valid for a period not to exceed two years.		
c. Certification is required of positions equivalent to positions listed in 5480.20A.1.6.c.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
All other operator or immediate supervisor positions to be certified are identified in the Training Implementation Matrix.		
7. TRAINING		
*Training to support qualification and certification programs is based on a systematic approach to training.		
*A graded approach is used to establish the systematic approach to training for operations personnel, maintenance personnel, technicians, and the technical staff.		
a. General		
Training programs consist of a combination of classroom-type and on-the-job training, including simulator and laboratory training as applicable.		
(1)(a) Personnel who are appointed to positions in the operating organization subsequent to approval of the Training Implementation Matrix required by DOE 5480.20 of 2-20-91 meet the education and experience requirements of this DOE 5480.20A.		
(1)(b) Personnel who are appointed to positions in the operating organization prior to the approval of the TIM are required to participate in job-specific training and qualification/certification programs and subsequent continuing training programs.		
(3) Qualification and certification programs are reviewed by facility management and kept up to date to reflect changes to the facility, Safety Analysis Reports, Technical Safety Requirements, procedures, regulations, and applicable industry operating experience.		
Team training is incorporated into the training program if job functions require team solutions and activities.		
b. Training Process		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
*A systematic approach to training is used to establish initial and continuing training programs to ensure operating organization personnel are qualified to perform job requirements.		
c. Initial Training		
Initial training programs are established for operating organization personnel at operable nuclear facilities to develop or enhance their knowledge and skills to perform job assignments.		
Examinations (written, oral, operational evaluations, performance demonstrations) on material included in the training programs are administered and documented as appropriate.		
Operational use of trainees is in accordance with (IAW) 5480.20A.1.7.c.		
d. Continuing Training		
Continuing training programs are established for operating organization personnel who perform functions associated with engineered safety features as identified in the facility Safety Analysis Report.		
(1) Continuing training is structured commensurate with specific position needs.		
Continuing training is administered on a cycle not to exceed two years.		
Continuing training includes, at a minimum, training in significant facility system and component changes, applicable procedure changes, applicable industry operating experience, selected fundamentals with emphasis on seldom used knowledge and skills necessary to assure safety, and other training as needed to correct identified performance problems.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(2) Periodic examinations (written, oral, operational evaluations, performance demonstrations, as applicable to the position) are administered and documented throughout the cycle on material included in the operator (operators and their immediate supervisors) training programs.		
(3) Continuing training programs for certified operators include preplanned classroom-type training, on-the-job training, and operational evaluations on a regular and continuing basis.		
Continuing training programs for certified operations personnel includes, at a minimum, the following training items as related to job performance:		
(a) Training and examination covering abnormal facility procedures and emergencies at least annually for certified operators and certified supervisors;		
(b) Training drills conducted in the facility or on a simulator to enable personnel and operating teams to maintain their ability to respond to abnormal and accident situations.		
Training drills conducted in the facility do not lead to or have the potential for safety concerns		
(c) Instruction in the use of facility systems to control or mitigate accidents, including both classroom and training conducted in the facility.		
(d) Training on the subjects indicated in 5480.20A.I.7.d.(4).(d) <u>1</u> through <u>8</u> as applicable to the position, whenever examinations and experience (Industry and nuclear facility specific) or evidence indicates a need for emphasis.		
e. General Employee Training (GET)		
A GET program is in place and all persons are trained in the subjects specified in 5480.20A.I.7.e.(1) commensurate with their job duties.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(2) Visitors, contracted personnel, and temporary personnel are under continuous escort while at the facility unless they have been trained in appropriate areas from the subjects specified above to the extent necessary to ensure safe execution of their duties.		
(3) A written examination covering the areas specified in 5480.20A.1.7.e.(3) is required for all personnel except short-term visitors.		
Persons who do not pass this examination are not permitted access without a continuous escort.		
(4) Changes in GET areas identified in 1.7e(1) of the Order are included in continuing training programs for all facility personnel.		
f. Probabilistic Risk Assessment (PRA) Training		
For those facilities for which a PRA HAS BEEN PERFORMED , PRA results are included in initial and continuing training programs for operations and technical support personnel IAW 5480.20A.1.7.f.		
g. Technician and Maintenance Personnel Training		
(1) Personnel in this category are qualified to perform tasks associated with their job specialty, or are directly supervised.		
(2) Training is provided on engineered safety features identified in the facility Safety Analysis Report and includes the systems (as applicable) and elements specified in 5480.20A.1.7.g.(2).		
(3) Training program content for radiological control technicians (RCT) is in accordance with the requirements contained in 10 CFR 835, <i>Occupational Radiation Protection</i> , and DOE/EH-0256T, <i>DOE Radiological Control Manual</i> .		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
RCT training program elements (i.e., selection, training process, continuing training, qualification) are in accordance with the requirements of this Order.		
h. Technical Staff Training		
(1) A list of specific technical support personnel positions that have a direct impact on employee, facility, of public safety is developed.		
(2) A training program is established for entry-level technical support personnel.		
Subject areas (as appropriate to the position) specified in 5480.20A.I.7.h.(2) are included in the training program.		
i. Management and Supervisory Training		
The topics listed in paragraph I.7.h.(2) are included as appropriate.		
Training programs for managers and first line supervisors are established and contain the topics listed in 5480.20.I.7.i.(1)&(2) as appropriate.		
8. OPERATOR AND SUPERVISOR EXAMINATIONS		
Comprehensive written and oral examinations and operational evaluations are prepared and administered for initial certification of certified operators and supervisors.		
Comprehensive written examinations and individual performance demonstrations are prepared and administered for the initial qualification of other operators and supervisors.		
Separate oral examinations and operational evaluations are administered to Category A personnel (they may be combined for Category B and non-reactor nuclear facilities).		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
These examinations contain a representative sampling of the knowledge and skills identified in and derived from the learning objectives resulting from the systematic analysis of the position,		
And from information in Safety Analysis Reports, Technical Safety Requirements, system description manuals and operating procedures, lessons learned from Occurrence Reports, and other applicable sources.		
a. Written procedures which address examination/evaluation development, approval, security, and administration are in place to administer examinations and operational evaluations.		
Written procedures are in place to establish and maintain examination question banks.		
b. The oral examination content is tailored to evaluate the candidate's operational knowledge (initial/continuing training program subjects) and organizational awareness to determine how the individual will function in an operating environment.		
9. OPERATOR AND SUPERVISOR REEXAMINATIONS		
Reexaminations for certified and qualified operators and supervisors include subjects in which the person is expected to be knowledgeable and emphasize those subjects covered by the continuing training program.		
Comprehensive biennial examinations or periodic examinations throughout the continuing training cycle are administered.		
Written examinations and performance demonstrations are administered to requalify operators and supervisors.		
Written and oral examinations and operational evaluations are administered to recertify operators and supervisors.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
Separate biennial oral examinations and operational evaluations are administered to Category A personnel (they may be combined for Category B and non-reactor nuclear facilities).		
10. REQUALIFICATION		
Operators and their supervisors are not allowed to continue to function in qualified or certified positions if they have not completed all of the requalification or recertification program elements (continuing training and associated examinations) within the two year continuing training cycle.		
If a qualified or certified operator or supervisor fails a requalification or recertification examination, or shows serious job performance deficiencies which indicate that he or she may perform in an unsafe manner, the individual is removed from activities requiring qualification or certification.		
a. Qualification or certification is regained only after completing remedial training designed to correct the deficiency(s) and		
Satisfactory completion of a reexamination.		
(1) <u>Recertification</u> includes a review of individual operating performance during the past certification period by either line management, by a committee, or by a person designated by management and		
a current medical examination.		
b. When a certified operator or supervisor has been absent from certification duties for greater than 3 months, but less than 12 months, selected retraining (including written and oral examinations and operational evaluations) is provided as deemed necessary prior to reassignment to certification duties.		

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If the absence is greater than 12 months, comprehensive written and oral examinations and operational evaluations (as required of initial candidates) are given to determine weak areas.		
Retraining and reexamination are required in areas of weakness.		
11. EXCEPTIONS TO TRAINING		
In all cases, the requisite examinations (as described in I.8) to establish qualification are completed.		
a. Written procedures and criteria are in place for taking and documenting exceptions to the initial training program requirements of 5480.20A.		
The name of the person, the specific subject for which the exception is requested, and the justification are included as part of the documentation for each exception.		
The operating organization ensures that sufficient facility-specific instruction is provided to enable the candidate to perform job requirements.		
Exception procedures are submitted to and approved by the DOE Operations Office Manager.		
c. Individual exceptions are approved by contractor management after approval of the exception procedure by the Operations Office Manager.		
d. If challenge examinations are administered, they are sufficiently comprehensive to adequately test the learning objective(s) that are stated in the training program.		
12. EXTENSIONS		
a. Written procedures which include the elements contained in 5480.20A.I.12.a.(1) through (3) are in place to control extensions of qualification and certification.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
b. Extension of certification is approved by the Operations Office Manager.		
Extension of qualification is approved by contractor management.		
13. ALTERNATIVES TO EDUCATION AND EXPERIENCE		
a. Alternatives to the education requirements specified are considered on a case-by-case basis and approved and documented by the operating organization.		
A system or written procedure is in place for determining alternatives to educational requirements using the guidelines provided in 5480.20A.		
(4) Related experience may substitute for education at the rate of six semester credit hours for each year of experience up to a maximum of 60 credit hours.		
b. A system or written procedure is in place for determining alternatives to experience requirements using the guidelines provided in 5480.20A.		
(1) Formal education is not allowed to substitute for more than 50 percent of the experience requirement unless otherwise stated in 5480.20 requirements.		
(2) Job-related training in the position sought may qualify as equivalent to nuclear experience on a one-for-one basis for up to a maximum of two years.		
15. RECORDS		
Written procedures are in place that specify requirements for the maintenance of training, qualification, and certification records for operating organization personnel.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
a. Qualification and certification of personnel is documented in an easily auditable format.		
Individual qualification and certification records include all items specified in 5480.20A.I.15.a.(1) through (7).		
b. A historical record that documents initial qualification or certification, and applicable information from a. above, that verifies the most recent qualification or certification is retained in individual records.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
CHAPTER II CATEGORY A REACTOR PERSONNEL		
2. ENTRY-LEVEL		
a. Managers		
(1) <u>Plant Manager</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 6 years nuclear (3 years may be power plant experience), 4 years supervisory or management, and 6 months on site.		
(c) Holds or has held a Senior Reactor Operator (SRO) certification at similar Category A reactor (or equivalent) or has been certified at an appropriate simulator. If an assistant holds a SRO certification the Plant Manager need not meet this requirement.		
(2) <u>Operations Manager</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 4 years nuclear (1 year may be power plant experience) and 6 months on site.		
(c) Holds an SRO certification at the time of appointment.		
(3) <u>Maintenance Manager</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 4 years nuclear (2 years may be power plant experience) and 6 months on site.		
(c) Is familiar with nondestructive testing and understands electrical, pressure vessel, and piping codes and standards.		
(4) <u>Technical Manager</u>		
(a) Has a BS in engineering or related science.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(b) Experience; 4 years nuclear (1 year may be power plant experience) and 6 months on site.		
(5) <u>Training Manager</u>		
(a) Has a Baccalaureate including courses in education, and technical subjects.		
(b) Experience; 4 years job related which includes 2 years nuclear.		
(c) If Training Manager does not hold or has not held an SRO certification, another person that is SRO certified is responsible to the Training Manager for content and conduct of the certified operator training program.		
b. Supervisors		
(1) <u>Shift Supervisor</u>		
(a) Has a High School Diploma.		
(b) Experience; 4 years nuclear (2 years may be power plant experience).		
(c) Holds and maintains SRO certification.		
(2) <u>Senior Reactor Operator</u>		
(a) Has a High School Diploma.		
(b) Experience; 4 years power plant (2 years may be academic or related technical training), 2 years nuclear (1 year as Reactor Operator (RO) at the facility), and 6 months on site. The 1 year of RO experience is not needed if the candidate has a BS in engineering or equivalent.		
(c) If candidate for SRO has a BS or equivalent:		
Participates as a regular RO candidate in reactor plant operations at power levels of at least 20% power for at least six weeks.		
Performs all control manipulations an RO candidate would perform.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(3) <u>Qualified Supervisor</u>		
(a) Has a High School Diploma.		
(b) Experience; 4 years job related, 1 year nuclear, and 3 months on site.		
c. Technical Staff		
(1) <u>Reactor Engineering</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 4 years job related which includes 2 years nuclear and 6 months on site.		
(c) Nuclear experience includes such areas as reactor physics, core measurements, core heat transfer, and core physics testing programs.		
(2) <u>Instrumentation and Control (I&C)</u>		
(a) Has an Associates Degree in engineering or related science.		
(b) Experience; 2 years job related, which includes 1 year nuclear and 6 months on site.		
(3) <u>Chemistry and Radiochemistry</u>		
(a) Has a BS in chemistry or related science.		
(b) Experience; 2 years job related, which includes 1 year nuclear and 6 months on site.		
(c) Has 1 year nuclear experience in radiochemistry.		
(4) <u>Radiation Protection</u>		
(a) Has a BS in science or engineering, which includes formal training in radiation protection.		
(b) Experience; 4 years job related, which includes 3 years nuclear on a professional-level, and 6 months on site.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(5) <u>Preoperational Testing Engineer</u>		
(a) Baccalaureate in engineering or related science		
(b) Experience; 1 year Nuclear (The required nuclear experience may be power plant experience)		
(c) Is knowledgeable of test program administration and the design and operational performance requirements of the system and equipment being tested and its interaction with other systems. performance testing (as applicable to job).		
(6) <u>Startup Testing Engineer</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 2 years nuclear of which 1 may be power plant.		
(c) Is knowledgeable of test program administration, system design and operational requirements, and expected plant operational characteristics during the test.		
(7) <u>Shift Technical Advisor</u>		
(a) Has a BS in engineering or related science.		
(b) Experience; 1 year nuclear and 6 months on site.		
(c) Is knowledgeable of control room instrumentation and controls and is assigned to advise the responsible shift supervisor.		
d. <u>Training Organization Personnel</u>		
(1) <u>Training Coordinators</u>		
(a) Has a High School Diploma		
(b) Experience; 2 years nuclear or power plant and 6 months on site.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(2) <u>Training Instructor</u>		
(a) Has a High School Diploma.		
(b) Experience consistent with the material being presented.		
(c) Special requirements:		
Simulator instructors for certified personnel hold or have held SRO certification on similar Category A reactor (or equivalent) or have been certified on the reactor simulator.		
Instructors responsible for training on Technical Safety Requirements, operating principles and characteristics, and control manipulations have received SRO or equivalent training.		
Demonstrated knowledge of instructional techniques through training or experience and qualified by the Training Manager (or equivalent) for the material being presented.		
e. Operators, Technicians, and Maintenance Personnel		
(1) <u>Qualified Auxiliary Operators</u>		
(a) Has a High School Diploma.		
(b) Experience; 1 year nuclear or power plant if the qualified process operator's actions could affect the quality of structures, systems, and components important to safety.		
(2) <u>Reactor Operator</u>		
(a) Has a High School Diploma.		
(b) Experience; 3 years nuclear, of which 2 years may be power plant experience and 6 months as a qualified auxiliary operator at the reactor for which certification is sought.		
(3) <u>Technicians</u>		
(a) Has a High School Diploma.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(b) Experience; 3 years job related.		
(4) <u>Maintenance Personnel</u>		
(a) Education: journeyman level		
(b) Experience; 3 years related maintenance.		
3. MEDICAL EXAMINATIONS		
An initial medical examination is administered to candidates.		
Certified operators and certified supervisors are reexamined at least every two years.		
Certified operators and certified supervisors are medically cleared prior to returning to work following any sickness or injury which keeps the person from performing duties for a period exceeding one month.		
Examinations are conducted per ANSI/ANS 3.4-1983 and NRC Regulatory Guide 1.134, Rev 2, 4-87.		
Medical examination requirements for other Operating Organization personnel are in accordance with established procedures.		
4. ENGINEERING EXPERTISE ON SHIFT		
The Operating Organization ensures each operating shift has adequate engineering and accident assessment expertise.		
If the STA is combined with the SRO position, the applicant must meet the following requirements:		
a. Currently certified as a senior reactor operator; and		
b. Successful completion of the STA training requirements in subparagraph II.6.a, and one of the following educational requirements: (1) Baccalaureate in engineering; (2) Professional engineer's license;		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(3) Baccalaureate in engineering technology including course work in the physical, mathematical, or engineering sciences; or		
(4) Baccalaureate in a physical science including course work in the physical, mathematical, or engineering sciences.		
5. SIMULATORS		
Each DOE production reactor has a full scope simulator IAW section II.5.		
a. If full-scope simulator is used for more than one production reactor the differences between the simulator and reactor are identified and documented by the operating organization and		
Approved by the Operations Office Manager.		
b. The need for a full scope or partial-task simulator for Category A test and research reactors is based on evaluations by the Operating Organization IAW section II.5.b. and		
Approved by the Operations Office Manager and the cognizant Secretarial Officer.		
6. SPECIFIC TRAINING		
a. Shift Technical Advisor		
STA training includes the items listed in section II.6.a.(1)-(6).		
b. Fuel Handling Operators		
Fuel handling operations are performed by or under direct supervision of a certified person.		
If fuel handling is performed by persons not qualified for fuel handling under regular certifications additional requirements must be met IAW section II.6.b.		
c. Control Manipulations		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
A control manipulations list is established based on an analysis of the job.		
The list specifies annual and biennial manipulations.		
RO and SRO candidates perform a minimum of five significant reactivity additions.		
d. Reactor Operator Written Examinations		
Examinations include a representative sampling of the items listed in II.6.d. as appropriate to the position and to the facility.		
e. Senior Reactor Operator Written Examinations		
The examination includes a representative sampling from the items listed in II.6.e.(1)-(7), in addition to those required for reactor operators, as appropriate to the position and to the facility.		
f. Operational Evaluations		
Administered to reactor operator and senior reactor operator candidates are generally similar in scope.		
Include a facility walkthrough or a combination walkthrough and simulator examination (for those DOE facilities having simulators).		
Are consistent with an analysis of the job.		
Require the candidate, to the extent possible to demonstrate an understanding of and the ability to perform, the actions necessary to accomplish a representative sampling from the items listed in II.7.f.(1)-(13).		
g. Operating Crew/Shift Training		
(1) RO trainees are assigned to an operating shift crew under the control of a certified RO for a minimum of 3 months with no concurrent duties that are not related to operation of the facility.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
The trainee shall manipulate the facility controls and perform the same duties as a certified reactor operator.		
(2) SRO trainees are assigned to an operating shift crew under the control of a certified SRO for a minimum of 3 months with no concurrent duties that are not related to operation of the facility.		
The trainee shall supervise the manipulation of the facility controls and perform the same duties as a certified senior reactor operator.		
7. OPERATOR PROFICIENCY		
a. Proficiency is maintained by ROs and SROs by actively performing job duties associated with their certification during 5 eight-hour shifts per calendar quarter, during 3 twelve-hour shifts per calendar quarter, or 9 four-hour shifts per calendar quarter.		
b. If criteria is not met certification is suspended, and the person is not assigned certification duties until the person has regained certification.		
Prior to resuming duties associated with certification, the operating contractor ensures that:		
(1) Certification is otherwise current and valid; and		
(2) The RO or SRO has performed certification duties under the supervision of a certified person, as appropriate to the position for a minimum of 24 hours, and includes a complete facility tour and all shift turnover procedures.		
c. If the reactor is not operated frequently enough to meet established requirements, certification is reinstated prior to reactor operation.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
CHAPTER III CATEGORY B REACTOR PERSONNEL		
2. ENTRY-LEVEL		
a. Managers		
Meets the following prior to assuming the position.		
(1) Has a BS in engineering or related science.		
(2) Experience; 6 years nuclear. (3)(a) the degree may fulfill 4 years (job related education or experience may substitute for a degree).		
(3)(b) Managers receive facility-specific training based upon comparison of persons background and abilities with position requirements.		
(3)(c) The Training Manager has a Bacculaureate which includes courses in education and technical subjects.		
b. Supervisors		
Meets the following prior to assuming the position.		
(1) Has a High School Diploma.		
(2) Experience; 3 years nuclear of which full-time academic training may fulfill 2 years.		
(3) The reactor supervisor or shift supervisor is a certified SRO.		
c. Operators		
(1) Has a High School Diploma.		
d. Technicians		
(1) Experience; 1 year job related.		
e. Maintenance Personnel		
(1) Experience; 1 year related maintenance.		
f. Technical Support Personnel		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(1) Education: Baccalaureate in engineering or related science		
(2) Experience: 2 years Job related and 1 year Nuclear		
g. Training Organization Personnel		
(1) <u>Training Coordinators</u>		
(a) High School Diploma		
(b) 2 years nuclear and 6 months on site		
(2) <u>Training Instructors</u>		
(a) High School Diploma		
(b) Experience: Consistent with the material being presented.		
(c) Special Requirements:		
Instructors who are responsible for instruction on subjects such as Technical Safety Requirements have received senior reactor operator training (or equivalent).		
Instructors have demonstrated knowledge of instructional techniques through training or experience and are qualified by the Training Manager (or equivalent) for the material being presented.		
3. MEDICAL EXAMINATIONS		
An initial medical examination is administered to candidates.		
Certified reactor operators and certified senior reactor operators are reexamined at least every two years.		
Certified operators and their supervisors are medically cleared prior to returning to work following any sickness or injury which keeps the person from performing duties for a period exceeding one month.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
Examinations are conducted per ANSI/ANS 15.4-1988.		
Medical examination requirements for other operating organization personnel are in accordance with operating contractor procedures.		
4. SPECIFIC TRAINING		
Qualification programs include classroom-type and on-the-job training to assure familiarity with all required aspects of reactor operation, including anticipated transients and accident conditions.		
a. Reactor Operator and Senior Reactor Operator Training		
(2) Senior reactor operator training is sufficiently comprehensive to develop the knowledge and skills commensurate with the position and cover areas which are fundamental to the candidate's job duties.		
(3) Initial and continuing training programs include topic areas from III.4.d. or 4.e, and other categories and topics which are applicable to the facility and to the requirements of the job.		
b. Fuel Handling Operations		
Fuel handling operations are performed by or under direct supervision of a person certified for that task.		
Additional requirements are met IAW III.4.b.(1)&(2) if fuel handling is not performed by persons qualified for fuel handling under regular RO or SRO certifications.		
c. Control Manipulations		
A control manipulations list is established based on an analysis of job.		
The list of control manipulations specifies which manipulations are to be performed annually and which are to be performed biennially by ROs and SROs as part of the continuing training program.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
RO and SRO candidates perform a minimum of five significant reactivity manipulations (e.g., reactor startup, reactor shutdown, >10% change in reactor power) for initial certification.		
d. Reactor Operator Written Examination Contents		
The examination includes a representative sampling from the items listed in III.4.d.(1)-(4) as appropriate to the position and to the facility.		
e. Senior Reactor Operator Written Examination Contents		
SRO examinations are based on the sources discussed in paragraph III.4.d.		
The examination includes a representative sampling from the items listed in III.4.e.(1)&(2), in addition to those required for reactor operators, as appropriate to the position and to the facility.		
f. Operational Evaluations		
The operational evaluations administered to reactor operator and senior reactor operator candidates are generally similar in scope.		
Operational evaluations for Category B reactor personnel are similar, but need not be identical, to the operational evaluations for Category A reactor personnel.		
Significant deviations from the operational evaluations required of Category A reactor personnel are justified in writing and included in the TIM.		
5. OPERATOR PROFICIENCY		
a. Proficiency is maintained by certified reactor operators and senior reactor operators by actively performing job functions associated with their certification for at least four hours per calendar quarter.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
b. If proficiency is not maintained, certification is suspended, and performance of certification duties are not allowed until the person has regained certification.		
Prior to resuming duties associated with certification, the operating contractor ensures that:		
(1) Certification is otherwise current and valid; and		
(2) The RO and SRO performs certification duties under the direct supervision of a certified person, as appropriate to the position, for a minimum period of 6 hours.		
c. If the facility is not operated frequently enough to meet normal proficiency requirements, certification is reinstated prior to facility operation.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
CHAPTER IV NON-REACTOR NUCLEAR FACILITY PERSONNEL		
2. ENTRY-LEVEL		
a. Managers		
Meets the following prior to assuming the position.		
(1) Has a BS in engineering or related science.		
(2) Experience; 4 years nuclear. (3)(a) A degree may fulfill 3 years (job related education or experience may substitute for a degree).		
(3)(b) Establish facility-specific training based upon comparison of persons background and abilities with position requirements.		
(3)(c) The Training Manager has a Baccalaureate which includes courses in education and technical subjects.		
b. Supervisors		
Meets the following prior to assuming the position.		
(1) Has a High School Diploma.		
(2)(3) Experience; 3 years nuclear of which full-time academic training may fulfill 2 years.		
c. Operators		
(1) Has a High School Diploma.		
d. Technicians		
(1) Experience; 1 year job related.		
e. Maintenance Personnel		
(1) Experience; 1 year maintenance related.		
f. Technical Support Personnel		
(1) Baccalaureate in engineering or related science		
(2) Experience: 2 years Job related and 1 year Nuclear		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
g. Training Organization Personnel		
(1) <u>Training Coordinators</u>		
(a) High School Diploma		
(b) 2 years nuclear and 6 months on site		
(2) <u>Training Instructors</u>		
(a) High School Diploma		
(b) Experience: Consistent with the material being presented.		
(c) Special Requirements:		
Instructors who are responsible for instruction on subjects such as Technical Safety Requirements have received training on facility operating characteristics and principles, and operating limits and their bases		
Instructors have demonstrated knowledge of instructional techniques through training or experience and are qualified by the Training Manager (or equivalent) for the material being presented.		
3. MEDICAL EXAMINATIONS		
The physical demands imposed upon personnel for both routine and emergency functions are determined.		
An initial medical examination is administered to candidates.		
Certified operators, fissionable material handlers, and certified supervisors are reexamined at least every two years.		
Certified operators, fissionable material handlers, and certified supervisors are medically cleared prior to returning to work following any sickness or injury which keeps the person from performing duties for a period exceeding one month.		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
Medical examination requirements for other operating organization personnel are established by contractor procedures.		
4. SPECIFIC TRAINING		
The depth and scope of training and qualification programs are commensurate with the hazard level and complexity of the operations.		
a. Operators		
Training is sufficiently comprehensive to cover areas which are fundamental to the job duties.		
(1) A core of subjects such as industrial safety, instrumentation and control, basic physics, chemistry, industry operating experience, and major facility systems as applicable to the position and the facility is established.		
(2) Training programs include on-the-job and classroom-type training on the topics identified in IV.4.a.(2)		
b. Fissionable Material Handlers		
Training includes the same categories specified for Operators, and additional categories listed in IV.4.b. to the extent applicable to the position.		
c. Supervisors		
Training includes the categories and on-the-job training specified for Operators and Fissionable Material Handlers to the extent to which they apply, and is of increased depth to reflect the added responsibility of the supervisor position.		
d. Certified Operator Written Examination Contents		
The examination includes a representative sampling from the items listed in IV.4.d, in addition to the items listed in paragraph 4a, as appropriate to the position and to the facility.		
e. Certified Supervisor Written Examination Contents		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
The examination includes a representative sampling from the items listed in IV.4.e, in addition to the items listed in paragraph IV.4.d, as appropriate to the position and to the facility.		
f. Operational Evaluations		
The operational evaluations administered to certified operator, fissionable material handler, and certified supervisor candidates are generally similar in scope.		
The evaluation contains questions and operational exercises and includes a facility walkthrough, and may include system and/or component operation.		
Operational evaluations, to the extent applicable to the facility, require the candidate to demonstrate an understanding of, and the ability to perform the actions necessary to accomplish a representative sampling from the items listed in IV.4.f.(1)-(12).		
*g. Control Manipulations		
*A list of control manipulations that is based on an analysis of the job is established.		
*Certified operator, fissionable material handler, and certified supervisor candidates perform control manipulations for initial certification and		
*On a biennial basis as part of the continuing training program after certification is achieved.		
5. OPERATOR, FISSIONABLE MATERIAL HANDLER, AND SUPERVISOR PROFICIENCY		
Certified operators, fissionable material handlers, and certified supervisors actively participate in the job functions associated with their certification.		
a. Procedures are established by the operating organization which define requirements and frequency necessary to maintain an active status.		
b. If active status (proficiency) is not maintained, certification is suspended.		
Prior to resuming duties associated with certification, the operating contractor ensures that:		

ORDER REQUIREMENTS	REQ. MET YES/NO	COMMENTS
(1) Certification is otherwise current and valid; and		
(2) The certified operator, fissionable material handler, or certified supervisor performs certification duties under the direct supervision of a certified person, as appropriate to the position, for a specific period of time.		
c. If the facility is not operated frequently enough to meet normal proficiency requirements certification is reinstated prior to facility operation.		