

ORNL - Restart of the High Flux Isotope Reactor 2-07 (Contractor ORR)

Training & Qualification

OBJECTIVE TR-1: The selection, training and qualification programs associated with CS modifications, operation, hazards, and reactor operations with the hydrogen-moderated CS have been established, documented, and implemented. The selection process and applicable position-specific training for managers and staff, associated with CS modifications and hazards, and reactor operations with the hydrogen-moderated CS ensures competence commensurate with responsibilities (the training and qualification program encompasses the range of duties required to be performed). (CR – 1, CR – 2, CR – 6)

Criteria

- The Training program is established, documented, and functioning to support reactor operations with the CS modification. Functions, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. The training function is adequately staffed with qualified personnel.
- Entry-level requirements are established for each operations, maintenance, and support position and include as applicable the minimum education, experience, technical, and medical requirements.
- Procedures are developed and implemented that describe the training and qualification process for CS and reactor operations. The procedures address examination requirements for qualification of operations and support personnel, re-qualification, maintenance of proficiency, gaining exceptions and extensions, alternative to educational requirements, remediation, and evaluations by facility and training management.
- There is an approved training implementation matrix (TIM) that defines and describes the application of DOE O 5480.20A requirements for reactor and facility operation with the CS. Suitable justifications for exceptions are included in the matrix for any requirement not implemented.
- The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements.
- Training material and qualification documents for workers are based on the results of a systematic analysis of job requirements.
- The qualification programs incorporate on-the-job training (OJT) and performance evaluation of worker skills.
- Requirements for continuing training have been adequately defined and programs have been developed.
- The continuing training program includes training on the requirements contained in the CS DSA.

Approach

Record Review:

- (1) Review selected documentation (e.g., administrative procedures, the RRD training program, organization charts, and position descriptions) which establish the roles, responsibilities, interfaces, and staffing levels of the training group that supports CS and reactor operations.
- (2) Review procedures that describe and implement the training and qualification process. Review the analyses (job task analysis, needs analysis, tabletop analysis) performed that identifies the tasks required for competent job performance. Review qualification standards to ensure that they reflect the results of the analyses.
- (3) Review the TIM to ascertain its approval and justification for exceptions.
- (4) Review the procedures or policies which describe the personnel selection and entry-level requirements to ensure they address the minimum physical attributes a trainee must possess as well as the minimum educational, technical, and experience requirements necessary for the employee to meet job requirements.
- (5) Review selected training material and examinations for adequacy.
- (6) Review documents that define the continuing training program. Review the continuing training schedule, lesson plans, rosters, and examinations to ensure that implementation of the program is adequate.
- (7) Review training records to ensure that the training program is being formally administered and controlled and that the training program continues to be implemented consistent with 5480.20A.

Interviews: Interview selected training support personnel to determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization. Interview selected RRD and particularly CS line managers to assess their understanding of their support and involvement in the training and qualification program.

Shift Performance: Observe classroom and/or OJT to determine if they are being effectively implemented as designed.

OBJECTIVE TR-2: Training staff and management exhibit awareness of applicable requirements pertaining to CS operation, hazards, and reactor interface. The level of knowledge of training staff and management, related to CS operations, hazards, and reactor interface, is adequate. (CR-1, CR-4)

Criteria

Training personnel demonstrate a working knowledge of CS operations and hazards and reactor operations with the hydrogen-moderated CS, associated systems and components related to safety, and applicable safety management program requirements. They also give adequate attention to health, safety, and environmental protection issues.

Approach

Record Review: None.

Interviews: Interview training personnel and OJT instructors assigned to support CS and reactor operations to evaluate their knowledge of CS and reactor operations and requirements and how they support those operations. Determine if they have sufficient knowledge, experience, and qualifications for the training tasks assigned. Determine if they have adequate knowledge of health, safety, and environmental issues.

Shift Performance: If possible, observe performance of a classroom training evolution and an OJT evolution associated with CS operation and ascertain competency of the training staff and effectiveness of the training.

OBJECTIVE TR-3: Modifications to the facility to enable reactor operation with the CS have been assessed for potential impact on training and qualification and training has been conducted to incorporate all aspects of those changes. (CR-5)

Criteria

- CS and reactor interface training and qualification programs are based on the latest modifications associated with CS operation.
- A process exists such that changes to facility design, systems, and procedures have been reviewed to determine if training is required.
- Training for personnel who will be involved with operations with the hydrogen-moderated CS has been completed and documented to the latest revisions of procedures.
- The training method (e.g., required reading, briefing, classroom training, etc.) chosen for identified procedure changes is consistent with the complexity and hazards associated with the change.
- Training and qualification for reactor operation with the CS has been satisfactorily conducted.

Approach

Record Review:

- (1) Review the process used to evaluate changes to CS facilities and procedures for impact on training and qualification. Review documentation on configuration change control, procedure modification, lesson plan revisions, and supporting examinations. Determine if training materials accurately reflect recent facility and/or procedure changes.
- (2) Review the training that was provided as a result of these changes. Determine if the training methods used were consistent with the complexity and hazards associated with the changes.
- (3) Review for adequacy and completion selected training and qualification records which indicate that CS operations staff and reactor operations staff have been satisfactorily trained and qualified for reactor operation with the CS, associated facility and system hazards, and the CS DSA.
- (4) Review for adequacy and completion selected training records which indicate that management and support personnel from engineering, industrial safety and hygiene, fire protection, nuclear safety, emergency preparedness, and quality assurance have been trained on CS related procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview personnel responsible for the integration, development, and implementation of changes to training and qualification materials based on facility and/or procedure modifications. Assess their understanding of the process.

Shift Performance: Observe pre-shift briefings as necessary to determine if operations personnel are briefed on recent changes to procedures. Observe classroom and/or OJT to determine if training on design changes are being effectively implemented.

OBJECTIVE TR-4: The program for maintaining reactor operator proficiency has been effectively implemented. (CR-3, CR-4) (Should also be coordinated with OP-4)

Criteria

An approved plan for assuring reactor operator proficiency prior to reactor operation was established and satisfactorily implemented.

Approach

Record Review: Review the program for maintaining reactor operator proficiency for adequacy and evaluate the status of actions. Verify that the plan included mechanisms to deal with specific hazards and evaluations unique to the start of reactor operations with the hydrogen-moderated CS. Review and evaluate assessment results from ORR Objective TR-1 to determine and document that training program records support the conclusion that reactor operator proficiency has been effectively retained.

Interviews: Interview training personnel to assess their understanding of the program for maintaining operator proficiency.

Shift Performance: None.