

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

AUTHORIZATION BASIS MANAGEMENT

OBJECTIVE AB-1: The nuclear safety program has been appropriately modified to reflect the CS modification and its reactor interface, sufficient numbers of qualified nuclear safety staff and management are provided, and adequate facilities and equipment are available to ensure services are adequate to conduct and support operations with the CS modification. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management control of safety. (CR-1, CR-2, CR-6)

Criteria

The nuclear safety program and organization are established and functioning to support reactor operations with the CS modification. Functions, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. The nuclear safety function is adequately staffed with qualified personnel.

Approach

Record Review: Review selected documentation (e.g., administrative procedures, organization charts, and position descriptions) which establish the roles, responsibilities, interfaces, and staffing levels of the nuclear safety group that supports CS and reactor operations.

Interviews: Interview selected nuclear safety personnel to determine if they are familiar with their roles, responsibilities, and interfaces with the reactor and CS operations organization.

Shift Performance: None

OBJECTIVE AB-2 (CR-1, CR-4): Nuclear safety staff and management exhibit awareness of applicable requirements pertaining to CS operation, hazards, and reactor operations with the hydrogen-moderated CS. Through their actions, they have demonstrated a high-priority commitment to comply with these requirements. The level of knowledge of nuclear safety managers and staff related to CS operations, hazards, and reactor interface is adequate based on interviews.

Criteria

Nuclear safety personnel demonstrate a working knowledge of operations with the 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 nuclear safety personnel assigned to support CS operations to evaluate their knowledge of reactor and CS operations, hazards, and requirements

and how they support those operations. Determine if they have adequate knowledge of health, safety, and environmental issues.

Shift Performance: None.

OBJECTIVE AB-3: Facility safety documentation is in place and has been implemented that describes changes in the safety envelope associated with reactor operations with the hydrogen-moderated CS. The safety documentation characterizes the hazards/risks associated with the CS and its operation. Preventive and mitigating measures such as systems, procedures, and administrative controls that protect workers and the public from hazards/risks associated with the CS and its operation are identified. Safety SSCs are defined and a system to maintain control over their design and modification is established. (Should also be coordinated with ORR Objective ES-3) (CR-7)

Criteria

- A DSA for reactor operation with the hydrogen-moderated CS, referred to as the CS DSA has been prepared and approved by DOE.
- The CS DSA identifies the safety SSCs credited to mitigate hazards/risks associated with reactor operation with the hydrogen-moderated CS.
- The CS DSA and associated TSRs that implement the controls credited in the CS DSA have been fully implemented.

Approach

Record Review:

- (1) Review safety basis documentation to confirm that the CS DSA has been approved by DOE and identifies the safety SSCs credited to mitigate hazards/risks associated with reactor operation with the hydrogen-moderated CS. Review the site listing of safety systems and components and their safety functions to ensure the list and functions are consistent with the CS DSA.
- (2) Review CS DSA and TSR implementation documentation (e.g., implementation matrix) to ensure that credited requirements and controls flow down to procedures and training as appropriate (should also be coordinated with ORR Objectives AB-4 and MT-4 associated criteria).

Interviews: Interview facility shift managers (FSMs), selected senior operations personnel, and cognizant engineers to confirm their understanding of the safety basis and the controls established for operations with the hydrogen-moderated CS.

Shift Performance: Observe CS operations, related simulated reactor operations, drills, and operational upsets (may be simulated) to ascertain that activities are adequately performed within the safety basis.

OBJECTIVE AB-4: Cold source and other selected reactor operations procedures are consistent with the description and accident analysis included in the DSA. Procedures and safety limits for operating the reactor and its process and utility

systems, including the CS system, have been appropriately revised or developed to adequately reflect the CS modification. (CR-9, 10)

Criteria

Operations procedures and safety limits adequately implement and are consistent with the approved CS DSA.

Approach

Record Review: Verify that operating procedures that implement the approved safety basis have been approved. Review selected operations (operating, surveillance, annunciator response, abnormal operating, and emergency operating) procedures for adequate implementation of the approved safety envelope. Ascertain on a sampling basis that the procedures adequately assure operation within approved safety limits and safety basis controls. Review selected operations procedures to ascertain DSA/TSR traceability and appropriate identification of DSA-related safety controls into procedures (including administrative controls). (Should also be coordinated with ORR Objectives AB-3 and MT-4 associated criteria.)

Interviews: None.

Shift performance: None.

OBJECTIVE AB-5: Formal agreements between the operating contractor and the DOE have been established via the contract or other enforceable mechanism to govern the safe operations of the facility within the approved safety basis. A systematic review of the facility's conformance to these safety basis requirements has been performed. These requirements have been implemented in the facility, or compensatory measures are in place and formally agreed to during the period of implementation. The compensatory measures and the implementation period are approved by DOE. (Should also be coordinated with ORR Objective MG-4) (CR-14.)

Criteria

- The authorization agreement between DOE and UT Battelle has been revised to incorporate any changes required relative to reactor operations with the CS and has been submitted to DOE for approval.
- HFIR operation with the CS is in compliance with the authorization agreement or compensatory actions are in place.

Approach

Record Review:

- (1) Review the authorization agreement and verify that any revisions required due operations with the CS have been incorporated and is ready for approval by DOE.
- (2) Review the authorization agreement and referenced documentation for UT-Battelle compliance and identification of any non-compliances, and ensure

that necessary justifications for continued operations are in place and approved by DOE.

- (3) Review NEPA evaluations applicable to the CS modification and ensure that appropriate approvals have been obtained consistent with requirements of the Authorization Agreement.

Interviews: Interview management personnel to ensure that they are aware of the components of the authorization agreement and their implementation.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.