

Enclosure 10
Letter, Felton to Jackson
Dated: July 27, 1998

Y/MA-7332

**Lockheed Martin Energy Systems, Inc.
Operational Readiness Review
Implementation Plan
for the
Enriched Uranium Operations
Restart Phase A1
at the
Oak Ridge Y-12 Plant**

APPROVED: _____

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February 1998
Revision 2

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I. INTRODUCTION

A. General

This implementation plan has been prepared to comply with the requirements of U.S. Department of Energy (DOE) Order 425.1, *Startup and Restart of Nuclear Facilities*, and DOE-STD-3006-95, *Planning and Conduct of Operational Readiness Reviews (ORR)*. The scope of the ORR is described in Y/MA-7316, *Operational Readiness Review Plan of Action for Enriched Uranium Operations Restart Phase A* (the POA), which was prepared by the Oak Ridge Y-12 Plant line management and approved by the DOE manager, Oak Ridge Operations, on January 16, 1998.

The DOE manager, Oak Ridge Operations, is the designated restart authority.

This implementation plan provides the overall approach and guidelines for the performance of the Phase A1 ORR. Appendix I includes the Criteria and Review Approach Documents (CRAD), which define the review objectives and criteria as well as the approach for assessing each objective. Results will be provided in a report that is discussed in Section IX of this implementation plan.

Operations at the Y-12 Plant were suspended as a result of a review of Building 9204-2E containerized storage operations and applicable Criticality Safety Approvals (CSA) on September 22, 1994. The review found violations of administrative safety controls associated with material storage arrays. Operations personnel, upon discovery of the criticality safety violation, did not immediately administratively control the area, i.e., ensure that personnel were kept at a safe distance from the array. They also did not immediately notify Nuclear Criticality Safety Department (NCSD) personnel or the plant shift superintendent. This was a violation of Y-12 Plant training and procedures. Following the event, all CSAs were walked down, seven categories of criticality safety nonconformances were identified, and a total of 1,344 individual deficiencies were noted.

The data from the evaluation of the CSA walkdowns, the occurrence report covering the initial infraction, the Type "C" Investigation, and Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-04 indicate the basic cause to be a lack of rigor in Conduct of Operations that permitted less than strict compliance with procedures. The issue was not one of operations being outside the safety envelope—the primary safety controls remained intact. Rather, the issue was the need to improve organizational performance and greater assurance in the safety management process of daily operations. Within the umbrella of conduct of operations, the principal failure was the result of personnel not following procedures with the rigor required. The lack of training on CSAs was also a contributing factor.

B. Y-12 Plant

The Y-12 Plant is one of two installations in Oak Ridge, Tennessee, managed by Lockheed Martin Energy Systems, Inc. (LMES) for DOE. LMES also manages the East Tennessee Technology Park. For four decades, the Oak Ridge Y-12 Plant has been and remains the national center for the handling, processing, storage, and disassembly of DOE-controlled enriched uranium (EU) materials and components, as well as depleted uranium and other special materials components.

The DOE defense programs at the Y-12 Plant include the dismantling of nuclear weapons components returned from the national arsenal, serving as the nation's storehouse for special nuclear materials, maintaining nuclear weapons components production and stockpile support capability, and providing special production support for other DOE programs and customers. In addition, as the primary EU repository for the United States, the Y-12 Plant has the facilities and security systems for EU storage, chemical recovery and material purification, and fabrication.

C. Enriched Uranium Operations Restart Phase A1 Activities

The EUO Organization primarily supports DOE defense programs. The facilities involved in this restart will support defense programs. The facilities will process enriched uranium from dismantled nuclear weapons into a form for long-term storage. These facilities also support nondefense programs by producing or recovering enriched uranium from unirradiated research reactor fuel, recovering enriched uranium from salvage materials to support accountability, and providing purified metal to nonweapons customers. Other missions are identified on an as-needed basis by DOE and other customers.

The metal working processes being restarted in Phase A1 are in E-wing of Building 9212 (casting), M-wing of Building 9215 (machining), and O-wing of Building 9215 (rolling and forming). The Phase A1 accountability processes are in the Building 9212 complex and the Building 9818 complex. These processes are supported by the radiography and density inspections performed in Building 9981 and dimensional inspections performed in Building 9998.

1. Building 9212 Operations Area

The enriched uranium casting operation employs vacuum-induction casting furnaces, metal shearing and breaking, light machining, and casting by-product handling. This operation is located in Building 9212 E-Wing.

The enriched uranium accountability operations are performed by bulk reduction, dissolution, and evaporation. Enriched uranium is placed in can and safe bottle arrays for in-process storage. These equipment and storage areas are located in the Headhouse and B-1, C-1, D-1, and E- Wings of Building 9212. Operation of the dissolution process is supported by the chemical makeup; organic treatment; and nitric acid and aluminum nitrate recycle operations in the Building 9818 complex located west of Building 9212.

Ancillary equipment (such as exhaust fans) is located in C-1 Wing, adjacent buildings, or on the roof of Building 9212.

Uranium oxides are produced from a uranyl nitrate solution using dissolution, precipitation, furnaces, and particle-sizing operations in Rooms 1021, 1022, and 1010 of Building 9212. Shipping and receiving are conducted in Room 1004.

Radiography and density inspections in support of EUO are performed in Building 9981.

2. Building 9215 Operations Area

The machining operations of enriched uranium are performed in M-Wing of Building 9215. These operations are performed on the numerically-controlled/manually-operated lathes, mills, borers, and grinders. Significant support equipment for these operations includes chuck vacuum and machining coolant systems. The enriched uranium chips generated by the machining operations are transported to E-Wing of Building 9212 for further processing or storage. This chip processing includes cleaning, drying, and briquetting of the chips prior to recasting.

Enriched uranium rolling and forming are performed in O-Wing of Building 9215. Equipment and operations necessary to produce a wrought part include molten salt baths, a rolling mill, water rinse systems, mechanical leveling and shearing, heat treatment ovens, hydroform, and several material conveyance devices.

Dimensional inspections in support of enriched uranium casting and forming operations are performed in Building 9998, which is connected to M-Wing of Building 9215.

II. PURPOSE

The Phase A1 ORRs will determine if Y-12 Plant personnel are ready to restart the Enriched Uranium Operations described in Appendix A, Table A1, of the POA.

III. SCOPE

A. Breadth of the ORR

The Phase A1 LMES and DOE ORRs will review the metal working (casting, machining, and rolling and forming) operations plus some supporting accountability processes. The Phase A1 ORRs will also review all administrative and safety management programs (e.g., the emergency management program).

All 32 contractor core objectives (CO) will be assessed during Phase A1. The review will cover both administrative and safety management programs and their implementation for Phase A1 processes.

The scope of the ORRs, as defined in the approved POA, includes the following core objectives. The POA includes additional discussion concerning the scope or focus intended for each CO. The individual CRADs have incorporated this additional specificity.

CO-1. Facility safety documentation is in place that describes the safety envelope of the facility. (CR-4)

- CO-2. The safety documentation characterizes hazards and risks and identifies mitigating measures to protect worker and public safety from the characterized hazards. (CR-4)
- CO-3. Safety systems are defined in the facility safety documentation. (CR-4)
- CO-4. There are adequate and correct safety limits for operating systems. (CR-1)
- CO-5. Programs to control the design and modification of facilities and safety-related utility systems is in place. (CR-4)
- CO-6. Facility systems, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)
- CO-7. There are adequate and correct procedures for operating systems and utility systems. (CR-1)
- CO-8. Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications. (CR-18)
- CO-9. Facility procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)
- CO-10. A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)
- CO-11. Safety systems and other instruments which monitor Technical Safety Requirements are monitored for calibration. (CR-5)
- CO-12. All safety and safety-related utility systems are currently operational and in a satisfactory condition. (CR-5)
- CO-13. Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)
- CO-14. Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)
- CO-15. Modifications to the facility have been reviewed for potential impacts on training and qualification. (CR-18)
- CO-16. Training has been performed to the latest revision of procedures. (CR-18)

- CO-17. Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)
- CO-18. There are sufficient numbers of qualified personnel to support safe operations. (CR-13)
- CO-19. The implementation status for DOE 5480.19, *Conduct of Operations Requirements for DOE Facilities*, is adequate for operations. (CR-12)
- CO-20. Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)
- CO-21. An emergency drill program, including program records, has been established and implemented. (CR-9)
- CO-22. A routine operations drill program, including program records, has been established and implemented. (CR-9)
- CO-23. Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)
- CO-24. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)
- CO-25. A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)
- CO-26. A systematic review of the facility's conformance to applicable DOE Orders has been performed. (CR-7)
- CO-27. Non-conformances to applicable DOE Orders have been justified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)
- CO-28. An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)
- CO-29. A program is established to promote a site-wide safety culture. (CR-14)
- CO-34. Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations. (CR-8)

- CO-35. Training and Qualification programs for operations support personnel have been established, documented, and implemented that cover the range of duties to be performed. (CR-2)
- CO-36. Level of knowledge of operations support personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work practices. (CR-3)

B. Depth of the ORR

Depth refers to the level of analysis, documentation, or action by which a particular CO is assessed. Variations in the depth are obtained by the number of criteria that are used to assess a given CO or by the intensity of the review approaches. The review approaches include documentation checks, interviews, walkdowns, and observation of evolutions. Increased depth is attained by applying more of the review approaches for a given criterion or objective. The depth to which the different COs are assessed varies, depending on the particular facility characteristics and according to the degree to which the requirement contributed to the incident on September 22, 1994. The graded approach, as described in Appendix 1 of DOE-STD-3006-95, is used to assist the team members in determining the appropriate assessment depth.

IV. ORR PREREQUISITES (PR)

Several prerequisites have been identified that must be complete before the Phase A1 LMES ORR begins. These prerequisites consist of management plans and reviews necessary to ensure line management readiness to proceed. Specifically, the prerequisites are as follows:

PHASE A1 LMES ORR

PR-1: The Building 9212 and Building 9215 BIOs and OSRs must be approved and implemented in accordance with approved implementation plans. Criticality Safety Requirements (CSR) must be approved and incorporated into operating documents (applies to COs 1, 2, 3, 4, 9, 10, 11, 12, and 34).

PR-2: Change control and document control procedures must be issued and in use. The change control procedure must ensure that modifications satisfy design requirements; that Unreviewed Safety Question Determinations (USQD) are made as required; and that procedures and training are revised, as appropriate. A document control process must ensure that documents used for decisions affecting safety are current and accurate (applies to COs 5, 6, 7, 8, 9, 15, and 34).

PR-3: Process modifications must be identified in the EUO change request database (applies to COs 6, 8, 9, and 15).

PR-4: For each process the following must be complete: essential modifications and maintenance, process drawings, process procedures or Job Performance Aids (JPA), CSRs, scheduled Operational Safety Requirements (OSR) surveillances, inspection and testing, and scheduled maintenance and calibration (applies to COs 6, 7, 8, 9, 10, 11, 12, 28, and 34).

PR-5: Conduct of Operations practices must be implemented in accordance with the *Nuclear Operations Conduct of Operations Manual* as stated in RFA LMES/Y-12-DOE-5480.19-CSA-162 (applies to COs 10, 11, 19, 20, 24, and 34).

PR-6: Training and qualification requirements must be identified for key operations and support positions. Personnel assigned to positions must be trained and qualified to meet applicable requirements. Alternately, compensatory measures must be in place to support the personnel (applies to COs 13, 14, 15, 17, 18, 20, 23, 28, and 34).

PR-7: Drills and/or exercises must be developed for credible accident scenarios for high-risk processes. Emergency management plans must address hazards as defined in the Bases for Interim Operations (BIO). A representative sample of drills/exercises must be conducted with satisfactory results for these scenarios (applies to COs 21, 22, and 34).

PR-8: Operations and support personnel must be trained and qualified to perform assigned tasks (applies to COs 18, 24, and 34).

PR-9: The operating organization must be in place and key positions must be staffed to or above minimum levels established in the BIO and OSR. Interfaces with tenant and support organizations must be documented and communicated (applies to COs 18, 24, and 34).

PR-10: The Energy Systems Action Management Systems (ESAMS) and EUO deficiency report process must be in place. Open deficiencies and issues must be entered into the appropriate system for tracking and closure. Pre-start deficiencies must be identified and closed, with the exception of a manageable list of findings that have a well-defined schedule for closure before restart (applies to COs 25, 29, and 34).

PR-11: An assessment of compliance with administrative controls for the Standards/Requirements Identification Documents (S/RID) functional areas of interest must be completed. Results must be evaluated and placed in the appropriate deficiency tracking system. Requests for Approval (RFA) must be approved by DOE for noncompliances with DOE Orders important to health and safety (applies to COs 26,27, and 34).

PR-12: A transition plan defining steps to reach normal operations must be developed and approved. The plan must define the organization, process start-up controls, and compensatory measures that will be in effect during each restart phase and into steady-state operation. The restart plan provides a basis for the transition plan (applies to CO 28).

PR-13: Line management must clearly communicate to all personnel a commitment to safety and environmental compliance (applies to CO 29).

PR-14: A management self assessment (MSA) must be performed to assess readiness for the LMES ORR. The MSA must verify that these prerequisites are complete and that the facility is ready for the LMES ORR. Deficiencies must be evaluated and corrective actions must be approved.

PR-15: The vice president, Restart Operations, must certify that readiness has been achieved for the Phase A1 LMES and DOE ORR.

V. OVERALL APPROACH

The ORR will provide LMES senior management with an independent, objective measurement of the readiness to resume Phase A1 of Enriched Uranium Operations. The ORR will also be an indicator that the Y-12 Plant has a management team with a satisfactory level of proficiency to resume these activities. The following paragraphs outline the sequence of the ORR.

A. Y-12 Line Management Readiness-to-Proceed Certification

Upon completion of the Y-12 management self assessment (MSA), including resolution of all prestart findings (with the exception of a manageable list of open prestart findings that have a well defined schedule for closure) the vice president, Restart Operations, will issue a readiness-to-proceed certification discussed in prerequisite PR-15. The LMES ORR will not begin until the vice president, Restart Operations, has provided this certification of readiness.

B. ORR

The ORR team members will review documentation and procedures; inspect equipment, systems and buildings; interview personnel; and observe simulated or actual evolutions as they are performed. The reviews conducted by each ORR team members will be guided by a set of CRADs included as Appendix 1. The level-of-knowledge interviews will determine the awareness of fundamentals and the retention of material included in the training programs. For specific evolutions, the team members will review the records and procedures, observe the evolution, witness the execution of the procedure and the generation of the records, and then follow up on pertinent issues with interviews. For example, if a mistake is noted during an evolution, operators with similar qualifications may be questioned concerning their response to a similar situation.

The ORR will place emphasis on reviewing samples of results or observing performance for adequacy. It will place less emphasis on systematic review of program structure and organization. However, if any portion of the review indicates a weak program, then further analysis of that program may be required.

The ORR is conducted in two phases, the first being a review of documents associated with the implementation of prescribed programs, for example, corrective actions following the September 22, 1994 event, revised procedures, radiological controls procedures implementation, and completed surveillances. These reviews will be evaluated against DOE and facility requirements. The second phase stresses preparation for operations to permit evaluation of the operational proficiency developed in preparation for resumption of Enriched Uranium Operations activities. This phase evaluates the level of knowledge of operators and selected support personnel. Emphasis is placed on any areas of concern identified during operations to determine if problems noted are of a general nature or are unique to an individual. This manner of review provides the ORR team with a focused picture of the readiness to resume Phase A1 of Enriched Uranium Operations activities.

At the completion of the ORR, a report will be prepared summarizing the review and commenting upon the readiness of Phase A1 of Enriched Uranium Operations to restart.

C. ORR Results Briefings

The team will give briefings on the conduct and results of the Phase A1 ORR to Y-12 management and, upon request, to senior LMES or DOE management for their information and to help them form their decision regarding startup.

VI. ORR TEAM PREPARATIONS

Prior to commencement of on-site ORR activities, training and familiarization for ORR team members will be conducted. It will consist of site and facility familiarization, necessary radiological and safety training for facility access, and development of the ORR implementation plan and associated CRADs. Each team member has assessment experience or appropriate training. No team member has any connection with EUO activities that impact his independence to review assigned functional areas. By their selection, the team manager certifies that team members are technically competent, have appropriate assessment experience, are independent, and will become familiar with the facility through the familiarization process described above. Team assignments and qualification summaries are contained in Appendix 2.

VII. LMES ORR PROCESS

The team manager, assisted by team members, has developed the CRADs for this review. These CRADs provide defined bases for conducting the ORR within the scope set forth by the core requirements and derived core objectives of DOE Order 425.1. The team manager will review the efforts of the team members to ensure that all objectives are thoroughly assessed. The CRADs are based on the combined expertise of the team members, DOE Orders and other requirements, the potential hazards of operations, and the findings of internal and external review groups.

VIII. ADMINISTRATION

The team will meet daily during the on-site review. These meetings will permit the team members to discuss significant observations or problems identified during the day and will permit the team manager to identify any trends or areas in which more detailed information may be required. It will also allow potential schedule difficulties or possible information gaps to be identified in time to take corrective action.

Responsibility for the quality of the review process rests with the team manager and includes selection of all LMES ORR team members and daily on-site review of the findings of the team members.

IX. REPORTING AND RESOLUTIONS

A. Forms

During the conduct of the ORR, documentation of findings and observations and the assembly of objective evidence of operational readiness will be the responsibility of the individual team members in accordance with specific directions given below. Two types of administrative forms will be used to accurately document on-site inspection activities, findings, and observations.

The Assessment Form (Form 1) is used to document the methods and actions by a team member taken in his criteria evaluation process. Each Form 1 lists the means the team member has used to measure the site's performance relative to the objective provided in the CRADs. The form will be complete enough to allow an outside agency reviewing the form to follow the assessment logic and means used to verify the site's performance with respect to the objective and to thereby validate the ORR's completeness and adequacy. The write-up will clearly describe the approach taken to review the criterion. If for some reason the approach used does not exactly match the approach described in the CRAD, the reason will be documented. The conclusion will specify if the criteria for the particular objective have been met.

The Deficiency Form (Form 2) is used to document the issues revealed during the criteria evaluation process. A separate Form 2 should be generated for each issue related to a particular objective. For instance, in reviewing a CRAD or portion of a CRAD, a team member will generate a single Form 1 that describes the methods used in the investigation. If one distinct issue is discovered, the team member would then generate one Deficiency Form to detail the deficiency. A single Deficiency Form may be used to identify a generic problem for which a number of individual examples are listed. Clear communication is the objective, and the specific number of Deficiency Forms used to detail issues will necessarily be up to the discretion of the team member and team manager. Sample Assessment and Deficiency Forms are located in Appendix 3.

B. Finding Classification

A single issue or a group of related issues that have been documented on Deficiency Forms may constitute a finding. The team manager, in consultation with the team member(s), determines whether a finding is prestart or poststart. Appendix 4 provides the criteria to be used to aid in this determination. The results of this determination are documented on the Deficiency Form.

C. Lessons Learned

The team manager will report any problems or successes specific to the conduct of the ORR as Lessons Learned to aid future ORRs and will incorporate them into the final report. These will include lessons learned with respect to the ORR process itself, technical issues relating to the safe operation of DOE facilities, and interfaces with DOE in the ORR process.

D. Final Report

The team manager will develop a report to document the results of the ORR. This report will identify findings and observations found in the review and will identify findings as prestart or poststart.

Team members will be asked to sign the report, showing they concur with the report in the areas of their expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The team manager will transmit the ORR report to the vice president, Restart Operations.

The ORR report will be written with this format as a guide:

TITLE PAGE - The title page is the report cover and will state the subject and dates of the ORR.

SIGNATURE PAGE - This page will be for the signature of all ORR team members and will be used by the team manager in the final version of this report.

TABLE OF CONTENTS - The table of contents will identify all sections and subsections of the report, illustrations, tables, charts, figures, and appendices.

EXECUTIVE SUMMARY - This is a brief summary of the review process, the major or pre-start findings, and the readiness determination with appropriate recommendation.

INTRODUCTION - The introduction will provide information regarding the facility reviewed, the reason for the shutdown, and the purpose and the scope of the ORR. It will also contain a brief discussion of the overall objectives of the ORR, the review process, and team composition.

ORR EVALUATION - For each functional area, the report will discuss the objectives, the pre-start and post-start findings of that area, and provide conclusions as to readiness to commence operations.

LESSONS LEARNED - Problems or successes encountered during the review that could be applied to future ORRs, or to the construction, design or decommissioning of DOE facilities will be identified and documented in the report.

APPENDICES - Appropriate data will be provided as appendices to support the conclusions drawn in the report. These will include the following:

- a. Implementation Plan
- b. Criteria and Review Approach Documents (CRAD)
- c. Team List and Qualification Summaries
- d. Assessment Forms (Form 1)
- e. Deficiency Forms (Form 2)
- f. Dissenting Opinions (if applicable)

X. SCHEDULE

The LMES ORR is expected to begin approximately one week after line management certification of readiness and endorsement by the vice president, Restart Operations. The LMES ORR will require about two weeks to complete.

APPENDICES

- Appendix 1: Criteria and Review Approach Documents
- Appendix 2: Team Assignments and Qualification Summaries
- Appendix 3: ORR Assessment and Deficiency Forms
- Appendix 4: Finding Classification Criteria

APPENDIX 1

Criteria and Review Approach Documents (CRAD)

SAFETY DOCUMENTATION (SD)

Objectives

- CO-1 Facility safety documentation is in place that describes the safety envelope of the facility. (CR-4)
- CO-2 The safety documentation characterizes hazards and risks and identifies mitigating measures to protect worker and public safety from the characterized hazards. (CR-4)
- CO-3 Safety systems are defined in the facility safety documentation. (CR-4)
- CO-4 There are adequate and correct safety limits for operating systems. (CR-1)

Criteria

1. Safety documentation has been approved.
2. Safety documentation has been implemented according to approved plans.
3. Structures, systems, and components (SSC) credited for facility safety are identified in Section 2.6 of the Bases for Interim Operations (BIO).
4. Safety limits are discussed in Section 2 of the Operational Safety Requirements (OSR).

Approach

Record Review:

1. Review the following documents to ensure they were approved by appropriate LMES and DOE personnel:
 - Y/MA-7252, *The Basis for Interim Operations for Building 9212 Enriched Uranium Operations Complex*
 - Y/MA-7290, *The Basis for Interim Operations for Building 9215 Complex - Enriched Uranium Operations*
 - Y/MA-7255, *The Operational Safety Requirements for Building 9212 Enriched Uranium Operations Complex*
 - Y/MA-7291, *The Operational Safety Requirements for Building 9215 Complex - Enriched Uranium Operations*

2. Review at least the following number of Criticality Safety Requirements (CSR) from Table A1 of the Plan of Action to ensure they were reviewed and approved by appropriate personnel:

<u>AREA</u>	<u>MINIMUM # OF CSRs TO REVIEW</u>
Accountability	4
Casting	4
Machining	2

3. Review any implementation plans for BIOs, OSRs, and CSRs to determine that schedules are being met.
4. Review the BIOs and associated hazards analyses to determine that SSC credited for facility safety are contained in Section 2.6.
5. Review the BIOs, OSRs, and associated hazards analyses to ensure appropriate safety limits are discussed in Section 2 of the OSRs.
6. Review surveillance requirements to ensure they verify SSC operability.

Interviews:

Interviews will be scheduled as necessary after record reviews are completed.

Shift Performance:

1. If appropriate, observe the implementation of any specified compensatory measures to determine that they are correctly implemented and effective.
2. Verify the implementation of OSR surveillances by walking down three surveillance procedures.
3. Walkdown safety systems to determine physical condition and housekeeping.

MODIFICATIONS (MD)

Objective

CO-5 Programs to control the design and modification of facilities and safety-related utility systems are in place. (CR-4)

Criteria

1. The change control procedure has been approved.
2. The change control procedure requires Unreviewed Safety Question Determinations (USQD) or USQD screening work sheets to be performed.
3. Personnel are trained on the change control procedure.
4. Modifications are installed in accordance with approved procedures.

Approach

Record Review:

1. Review the change control procedure to verify it has been approved.
2. Review the change control procedure to verify it requires completion of USQDs and USQD screening work sheets when appropriate.
3. Review training records to verify personnel are trained on the change control procedure.
4. Review modification packages to verify that modifications were installed in accordance with approved procedures.

Interviews:

Interview personnel associated with the configuration management program to assess their understanding of program requirements and responsibilities.

Shift Performance:

1. Perform a facility walkdown to determine if there are uncontrolled modifications to systems.
2. Verify that at least two recent modifications are installed as described in the modification package.

Objective

CO-6 Facility systems, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)

Criteria

1. Processes are physically and functionally consistent with their descriptions in the BIOs, OSRs, and CSRs.
2. Approved USQDs document how facility modifications are consistent with safety documentation.

Approach

Record Review:

Review completed USQDs and USQD screening work sheets to verify they ensure that modifications are consistent with safety documentation.

Interviews:

Interview personnel responsible for developing, reviewing, and approving USQDs and supporting safety analyses for proposed activities to assess their understanding of the program, individual responsibilities, and safety basis documents.

Shift Performance:

1. Observe in-progress work for compliance with USQ review requirements.
2. Walk down a temporary modification, if one is in effect, and evaluate the accuracy of the temporary modification records and drawings.

Objective

CO-8 Modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications. (CR-18)

Criteria

1. Modification packages for approved modifications to processes require a review for impact on operating procedures.
2. A change control process is in place to ensure that future modifications are reviewed for impact on procedures.

Approach

Record Review:

1. Review modification packages to ensure appropriate procedure changes were identified and the procedure changes were completed prior to declaring the modified system operable.
2. Review the change control procedure to verify it requires modifications to be reviewed for impact on procedures and requires procedure changes to be completed prior to declaring the modified system operable.

Interviews:

Interviews will be conducted as part of CO-5.

Shift Performance:

None

Objective

CO-15 Modifications to the facility have been reviewed for potential impacts on training and qualification. (CR-18)

Criteria

1. Training materials and activities associated with modifications are consistent with operating procedures.
2. Modification packages for approved modifications to processes are reviewed for impact on training requirements.
3. A change control process is in place to ensure that future modifications are reviewed for impact on training requirements.

Approach

Record Review:

1. Review training material associated with modifications to ensure it is consistent with operating procedures.
2. Review modification packages to ensure appropriate training requirements were identified and completed prior to declaring the modified system operable.
3. Review the change control procedure to verify it requires modifications to be reviewed for impact on training and requires training to be completed prior to declaring the modified system operable.

Interviews:

Interviews will be conducted as part of CO-5.

Shift Performance:

None

SURVEILLANCES (SV)

Objective

CO-10 A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)

Criteria

1. OSR-required surveillance procedures are approved.
2. OSR-required surveillance procedures are current.
3. Future OSR-required surveillances are scheduled.
4. Preventive maintenance (PM) and calibration required to keep systems operable, as defined by OSRs, are identified.
5. PM and calibration required to keep systems operable, as defined by OSRs, are scheduled.
6. Deficiencies in SSC credited for facility safety are identified.
7. Deficiencies in SSC credited for facility safety are categorized.
8. Pre-start deficiencies in SSC credited for facility safety are corrected.
9. SSC credited for facility safety is confirmed to be operable after maintenance.

Approach

Record Review:

1. Review OSR-required procedures to verify they are approved.
2. Review surveillance records to verify OSR-required surveillances are current.
3. Review surveillance schedules to verify future OSR-required surveillances are scheduled at appropriate intervals.
4. Review the OSRs and PM and calibration programs to verify that OSR-required PMs are identified.
5. Review the OSRs and PM and calibration programs to verify that OSR-required PMs are scheduled.
6. Verify that there are adequate and correct procedures for operating systems and utility systems.

7. Verify that modifications to the facility have been reviewed for potential impacts on procedures and procedures have been revised to reflect these modifications.
8. Verify that facility procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis.
9. Review maintenance records for SSC to verify that appropriate operability determinations are made before declaring equipment operable.

Interviews:

Interview personnel associated with the surveillance test program to assess their understanding of program requirements and responsibilities.

Shift Performance:

Observe the performance of at least three surveillances.

Objective

CO-11 Safety systems and other instruments that monitor Technical Safety Requirements are monitored for calibration. (CR-5)

Criteria

Instruments that monitor OSR requirements are calibrated.

Approach

Record Review:

1. Review calibration records to verify that instruments that monitor OSR requirements are calibrated.
2. Review calibration procedures to ensure they are consistent with the requirements of safety documentation.

Interviews:

Interview personnel associated with the calibration program to assess their understanding of program requirements and responsibilities.

Shift Performance:

Observe at least one calibration activity.

Objective

CO-12 All safety and safety-related utility systems are currently operational and in a satisfactory condition. (CR-5)

Criteria

Systems credited for facility safety will be operable as defined.

Approach

COs 10 and 11 address this CO.

OPERATIONS (OP)

Objective

CO-17 Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance (CR-3)

Criteria

Operations personnel have adequate knowledge of processes and requirements to fulfill their duties.

Approach

Record Review:

1. Review at least three completed qualification or certification examinations to determine if examinations adequately verify facility-specific level of knowledge.
2. Review the results of the examination administered during the MSA.

Interviews:

Interview at least two operators and two line managers, including front-line supervisors, to determine if they understand procedures, JPAs, OSRs, and CSRs.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.
2. Administer a written examination to operators/supervisors in two different qualification/certification areas to determine their level of knowledge.

Objective

CO-18 There are sufficient numbers of qualified personnel to support safe operations. (CR-13)

Criteria

1. Only qualified personnel are assigned to operations positions.
2. There are adequate numbers of qualified operators available to fill positions defined in operating procedures.

Approach

Record Review:

1. Review the documents that define the numbers and qualifications of operating personnel necessary to perform the tasks specified in the operating procedures to verify they require adequate numbers of operators for normal and off-normal conditions.
2. Review the tasks listed in procedures and determine if sufficient operating personnel are qualified on each task.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to determine if the numbers and qualifications of operating personnel are adequate.

Objective

CO-19 The implementation status for DOE 5480.19, *Conduct of Operations Requirements for DOE Facilities*, is adequate for operations. (CR-12)

Criteria

1. Programmatic elements of conduct of operations (COO) are in place, as defined in the *Nuclear Operations Conduct of Operations Manual*.
2. Personnel have been trained in key COO principles.
3. Weaknesses in COO have been identified and corrective or compensatory actions are in place.

Approach

Record Review:

1. Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles.
2. Review identified weaknesses in COO and compensatory actions.

Interviews:

1. Interview operators and supervisors to assess their understanding of the conduct of operations principles in the performance of their duties.
2. If these orders are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as current compensatory measures in the interim.

Shift Performance:

1. Observe at least three simulations/evolutions to determine if the facility is effectively implementing the conduct of operations requirements.
2. Attend shift turnovers, incident critiques, and pre-job briefings and observe control room activities, operator rounds, panel walkdowns, procedure use, communications, response to alarms, control of system status, and lockout/tagout activities.
3. Observe the implementation of any specified compensatory measures within the facility to determine their effectiveness.

PROCEDURES (PR)

Objective

CO-7 There are adequate and correct procedures for operating systems and utility systems.
(CR-1)

Criteria

1. Approved operating procedures, including job performance aids (JPA) exist for normal, abnormal, alarm, and emergency conditions.
2. Operating procedures incorporate the requirements of the safety documentation.

Approach

Record Review:

1. Compare operating procedures with their associated CSRs to verify they are consistent with each other.
2. Verify that OSR requirements are contained in applicable operating procedures.
3. Review site and/or divisional procedure(s) to verify a viable system exists for the control and issuance of procedures and CSRs.
4. Verify the existence of a document control center that contains the latest revision of procedures, CSRs, and OSRs.

Interviews:

1. Interview operations personnel and supervisors to assess their understanding of the CSR and procedure revision process and how they verify the latest approved revision of a CSR or a procedure.
2. Interview operations support personnel for understanding of the procedure and CSR control processes.

Shift Performance:

1. Walk down at least five CSRs to verify the conditions in the field match the conditions required in the CSRs.
2. Verify that procedures, JPAs, and CSRs in use are the latest revisions.

3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures and JPAs, and they are adequate and correct.
4. Observe response to at least one abnormal alarm or emergency condition.

Objective

CO-9 Facility procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CR-15)

Criteria

1. A process is in place to ensure installed modifications are reflected in procedure revisions.
2. A process is in place to ensure procedure revisions are reviewed for consistency with safety documentation.

Approach

Record Review:

1. Review installed modifications to ensure they are reflected in procedure revisions.
2. Review the procedure change process to verify it requires procedure revisions to be reviewed for consistency with safety documentation.

Interviews:

Interview personnel associated with the procedure change process to assess their understanding of program requirements and responsibilities.

Shift Performance:

None

DRILLS (DR)

Objective

CO-21 An emergency drill program, including program records, has been established and implemented. (CR-9)

Criteria

1. The EUO emergency drill program has drills that cover the hazards identified in the BIOs.
2. Facility personnel are trained on the emergency response program.
3. Scheduled drills have been completed with satisfactory results.
4. Drill deficiencies have been adequately addressed.

Approach

Record Review:

1. Review the emergency drill program to ensure it contains drills that cover the hazards identified in the BIOs for processes.
2. Review TMS and other training records to ensure facility personnel have been trained on the emergency response program.
3. Ensure records for all emergency drills conducted in the last 12 months show that drill results were satisfactory and all identified deficiencies were satisfactorily addressed.
4. Review emergency drill records for the last 12 months to verify that EUO personnel have participated in at least one drill.
5. Review emergency drill program records to verify they meet the requirements of applicable procedures.
6. Review emergency drill scenarios to determine if they are adequate to satisfactorily assess personnel response to the simulated hazard.

Interviews:

1. Interview the Emergency Management Program Operations Manager to assess the adequacy of methods used to select drill scenarios and drill participants. Also assess his level of knowledge of the emergency drill program.

2. Interview the senior drill monitor for each emergency drill observed during the ORR to assess level of knowledge of the drill program.
3. Interview at least two EUO shift operations personnel to discuss their participation in the emergency drill program.

Shift Performance:

Observe at least one emergency drill, including pre-drill and post-drill activities.

Objective

CO-22 A routine operations drill program, including program records, has been established and implemented.

Criteria

1. The EUO operations drill program is documented.
2. Credible routine operations drill scenarios involving processes are identified.
3. Drills and exercises have been developed for each process scenario.
4. Records show that a representative sample of drills and exercises have been conducted with satisfactory results.
5. Drills and exercises have been conducted for credible accident scenarios for high-risk processes.

Approach

Record Review:

1. Review documentation of the EUO operations drill program to ensure it is formalized, approved, and meets the requirements of higher directives.
2. Review EUO drill scenarios to ensure they are credible and involve appropriate processes.
3. Verify drills and scenarios have been developed for each process scenario.
4. Review records to verify that a representative sample of drills and exercises have been conducted with satisfactory results.
5. Review drill records to verify drills and exercises have been conducted for credible accident scenarios for high-risk processes.

Interviews:

1. Interview the EUO routine operations drill program manager to assess the adequacy of methods used to select drill scenarios and drill participants. Also assess his level of knowledge of the routine operations drill program.
2. Interview the senior drill monitor for each routine operations drill or exercise observed during the ORR to assess level of drill program knowledge.
3. Interview at least two EUO shift operations personnel to discuss their participation in the routine operations drill program.

Shift Performance:

Observe at least two routine operations drills, including pre-drill and post-drill activities. Each drill will be in a different process area. One drill will be a credible accident scenario for a high risk process.

STARTUP PROGRAM (S/U)

Objective

- CO-28 An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

Criteria

1. A formal plan exists to ensure smooth transition from restart to routine operations.
2. The plan to ensure smooth transition from restart to routine operations provides monitoring and control when processes are initially used for production or normal operation.
3. Controls are in place to ensure that qualified personnel, during initial use, can operate equipment within applicable safety limits using the new or revised operating procedures of job performance aids (JPA).

Approach

Record Review:

1. Verify a formal and approved plan exists to ensure smooth transition from restart to routine operations.
2. Review the plan to ensure it adequately addresses monitoring and control when processes are initially used for production or normal operation.
3. Verify the plan delineates adequate controls to be in place to ensure qualified personnel, during initial use, can operate equipment within applicable safety limits using the new or revised operating procedures or JPAs.
4. Review system and equipment test records to verify process equipment has been adequately tested.
5. Verify all portions of the plan scheduled to be completed before restart have been completed.
6. Verify the plan includes all process equipment and systems.

Interviews:

None

Shift Performance:

Shift performance will be observed as part of COs-17, 18, and 19.

TRAINING AND QUALIFICATION (TQ)

Objective

CO-13 Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed.

Criteria

Operations personnel whose actions or decisions may directly impact the safety envelope must have training and qualification requirements documented in an EUO training and qualification program description.

Approach

Record Review:

1. Verify an EUO training and qualification program exists that satisfies DOE Order 5480.20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*.
2. Verify the program in (1) describes the training and qualification requirements for operations positions listed in Table A3 of Y/MA-7316, *Operational Readiness Review Plan of Action for EUO, Restart Phase A*.

Interviews:

None

Shift Performance:

None

Objective

CO-14 Technical qualifications of contractor personnel responsible for facility operations are adequate.

Criteria

1. Operations personnel (including the EUO organization manager and the nuclear operations manager) whose actions or decisions may directly impact the safety envelope, satisfy the technical qualification requirements of DOE Order 5480.20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*.
2. Technical qualifications for operations personnel are documented in an EUO training and qualification program description.
3. Records show that operations personnel meet the requirements of the EUO training and qualification program description or that an approved compensatory action is in place.

Approach

Record Review:

Verify that records show the individuals assigned to each of the operations positions in Table A3 of Y/MA-7316, *Operational Readiness Review Plan of Action for EUO, Restart Phase A*, meet the requirements of the EUO training and qualification program description or that an approved compensatory action is in place.

Interviews:

None

Shift Performance:

None

Objective

CO-16 Training has been performed to the latest revision of procedures.

Criteria

1. New or revised operating procedures have been reviewed for training implications.
2. Affected operations personnel have been trained, as required, in accordance with the *Nuclear Operations Conduct of Training Manual* before using a procedure.

Approach

Record Review:

1. Review records that list new or revised operating procedures.
2. Review records that indicate the procedures in (1) have been reviewed for training requirements.
3. Review records that list personnel that are required to be trained on the procedures in (1).
4. Review procedure training records and the pre-job briefing paperwork to verify involved personnel were trained in accordance with the *Nuclear Operations Conduct of Training Manual*.
5. Select ten procedure change notices and verify involved personnel were trained in accordance with the *Nuclear Operations Conduct of Training Manual*.

Interviews:

None

Shift Performance:

1. Observe two classroom training sessions held to train operations personnel on operating procedures.
2. Ensure operations personnel using new or revised operating procedures in operations and evolutions observed been trained on the applicable operating procedures in accordance with the *Nuclear Operations Conduct of Training Manual*.

Objective

CO-23 **Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)**

Criteria

1. Management qualifications are defined.
2. EUO management personnel and subcontractors who supplement EUO management personnel meet the defined management qualifications.

Approach

Record Review:

1. Verify that written and approved documentation defines management qualifications.
2. Review records to identify the individuals assigned to the managerial positions listed in Table A3 of Y/MA-7316, *Operational Readiness Review Plan of Action for EUO, Restart Phase A*, the EUO organization manager, and the nuclear operations manager.
3. Review records to identify subcontractors who supplement the EUO managers in (2).
4. Review records to determine any compensatory measures that have been established for managerial qualifications.
5. Review training records to verify the individuals listed in (2) and (3) meet managerial qualification requirements and compensatory measures.

Interviews:

None

Shift Performance:

Assess managerial awareness and performance of job responsibilities while observing evolutions to determine if they adequately promote and require necessary administrative and safety-basis requirements.

Objectives

- CO-35 Training and Qualifications programs for operation support personnel have been established, documented, and implemented that cover the range of duties to be performed.
- CO-36 Level of knowledge of operations support personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work practices.

Criteria

1. Area-specific requirements for support organization personnel are established in procedures, Memorandums of Understanding, or landlord/tenant agreements.
2. Each EUO support organization has documentation demonstrating that their personnel working in EUO facilities meet area-specific requirements.
3. The training and qualification programs of the operations support organizations are consistent with the Y-90 series plant procedures.

Approach

Record Review:

1. Review EUO procedures, Memorandums of Understanding, and landlord/tenant agreements to verify area-specific requirements for support organization personnel are established in them.
2. Review list of support organization personnel in the positions designated in Table A5 of Y/MA-7316, *Operational Readiness Review Plan of Action for EUO, Restart Phase A*.
3. Review EUO support organization documentation to verify it demonstrates the personnel in (2) meet area-specific requirements.
4. Review area-specific training and qualification programs for support personnel to verify they are consistent with the Y10-027, *Plant Training Program*, plant training procedure.

Interviews:

None

Shift Performance:

None

MANAGEMENT (MG)

Objectives

- CO-20 Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)
- CO-29 A program is established to promote a site-wide safety culture. (CR-14)

Criteria

1. Management establishes and communicates a commitment to safety and environmental compliance.
2. Safety problems are reported, prioritized, and tracked in a tracking system.
3. Operations personnel exhibit awareness of, and commitment to, applicable requirements from OSRs, CSRs, environmental permits, radiological work permits, and operating procedures.
4. Support personnel exhibit awareness of, and commitment to, applicable requirements from OSRs, CSRs, environmental permits, radiological work permits, and operating procedures.

Approach

Record Review:

1. Verify the existence of procedures, policies, etc. that promote the identification and promulgation of safety concerns to employees and provide the opportunity for employees to report safety issues.
2. Verify that safety problems are reported, prioritized, tracked, and closed in a timely manner.

Interviews:

Interview senior EUO management to establish management expectations with regard to worker safety and environmental compliance policies.

NOTE: Discussion of these issues is covered in CRADs that address operations and support personnel level of knowledge.

Shift Performance:

None

Objective

CO-24 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

Criteria

1. The EUO organization is clearly documented.
2. The EUO organization is known to division personnel.
3. Interfaces with tenant and support organizations are clearly documented.
4. Responsibilities for key operations positions are clearly documented.
5. Operations management is clearly documented as being responsible for safe operation.

Approach

Record Review:

1. Review the documents that define the EUO organization.
2. Review the documents that define the interfaces between EUO and support personnel.
3. Review the documents that define responsibilities for key operations positions.
4. Verify there are documents that define operations management as being responsible for safe operations.

Interviews:

Interview at least three line managers, including front-line supervisors, and three mentors to verify they understand the compensatory measures in place.

Shift Performance:

While observing evolutions, verify that the specified functions, assignments, responsibilities, and reporting relationships are properly implemented.

Objective

CO-25 A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

Criteria

1. Formal deficiency identification and handling processes are established.
2. The deficiency identification and handling processes are understood by operations personnel.
3. Health and safety deficiencies are categorized as pre- or post-start.
4. Pre-start deficiencies are corrected or on schedule to be completed before restart.
5. Post-start deficiencies are tracked for closure.

Approach

Record Review:

1. Verify that formal deficiency identification and handling systems exist.
2. Review the list of open findings and corrective actions to determine adequacy of pre- or post-start status and the scheduled completion dates support resumption.
3. Select five findings or corrective actions closed since November 1997 and review the associated files for adequacy of evidence of closure.
4. Verify that post-start findings are being tracked and schedules are realistic and are being met.

Interviews:

1. Interview personnel with open items to determine that items are understood and pre-start findings will be closed prior to restart.
2. Interview personnel to verify they understand how deficiencies are identified, prioritized, tracked, and closed.

Shift Performance:

Field verify the implementation of the five corrective actions selected above.

Objectives

- CO-26 A systematic review of the facility's conformance to applicable DOE Orders has been performed. (CR-7)
- CO-27 Non-conformances to applicable DOE Orders have been justified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

Criteria

1. Y-12 programs must implement the applicable standards/requirements identification documents (S/RID) in the following functional areas:

Management Systems
Quality Assurance
Configuration Management
Training and Qualification
Emergency Management
Engineering
Construction
Operation
Maintenance
Radiation Protection
Fire Protection
Packaging and Transportation
Waste Management
Facility (Nuclear) Safety
Occupational Safety and Health
Environmental Protection

2. Corrective actions are being implemented as approved by DOE in Request for Approval (RFA) LMES/Y-12-ORIG-1300.X1A-CSA-130, *Configuration Management on Standards/Requirements Identification Documents*.
3. Non-compliances have been identified and corrected or included in the RFA.

Approach

Record Review:

1. Review a representative sample of the records of compliance reviews for the DOE orders applicable to the functional areas above.
2. For those orders where non-compliances were identified, verify the existence of approved schedules for gaining compliance and compliance with those schedules.
3. Review the RFA to verify it is approved by DOE personnel.

4. Review the RFA to identify needed corrective actions (non-compliances).

Interviews:

1. Interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as current compensatory measures in the interim.
2. Interview individuals responsible for corrective actions to ensure the corrective actions are on schedule.

Shift Performance:

Observe activities to verify any necessary compensatory measures are in place.

Objective

CO-34 Management programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure support services are adequate for operations. (CR-8)

Criteria

1. The management programs identified in Section 5.8 of the OSR are in place.
2. Environmental permit compliance programs are in place.
3. The personnel specified in program documents are assigned as specified.
4. The facilities and equipment specified in program implementing documents are available.

Approach

Record Review:

1. Review the programs identified in Section 5.8 of the OSRs.
2. Review environmental permit compliance programs.

Interviews:

Interview selected personnel described in the programs specified in Section 5.8 of the OSRs to determine that required personnel are assigned.

Shift Performance:

Walk down selected facilities and equipment identified in Section 5.8 of the OSRs to verify they are available.

APPENDIX 2

Team Assignments and Qualification Summaries

TEAM LIST

<u>NAME</u>	<u>AREA(s)</u>
Joe Flynn	Team Manager
Floyd Freeman	Drills (CO-21, CO-22)/ Startup Program (CO-28)
Ron Shaffer*/Joe Flynn	Safety Documentation (COs-1-4)/ Management (CO-20, CO-24, CO-25, CO-26, CO-27, CO-29, and CO-34)
Jim Sprenkle*/Bill Hill	Operations (CO-17, CO-18, and CO-19) /Procedures (CO-7 and CO-9)
Keith Stalnaker*/Terry Betz	Training and Qualification (CO-13, CO-14, CO-16, CO-23, and CO-35, CO-36)
George Zagursky	Modifications (CO-5, CO-6, CO-8, and CO-15)/Surveillances (CO-10, CO-11, and CO-12)
Jim Bazley	Criticality Safety (All COs)

*Lead evaluator for assigned area



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Joseph P. Flynn

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TEAM MANAGER

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Electrical Engineering, Purdue University Honors Program
- U.S. Navy Nuclear Power Program - six years
- Commercial Nuclear Plant Experience
 - Engineer
 - Maintenance Manager
 - Senior Reactor Operator
 - Operations Manager
 - Technical Manager
 - Assistant Plant Manager
- Institute of Nuclear Power Operations (INPO)
 - Maintenance Department Assistant Manager
 - Operations Department Manager
 - Developed "Guidelines for the Conduct of Operations at Nuclear Power Stations"
 - Events Analysis Department Manager
 - Technical Development Department Manager
 - Plant and Corporate Evaluation Team Manager - more than 20 evaluations
- Consultant in areas of Operations and Maintenance
- Manager of the LMES Performance Evaluation Group

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- See INPO experience.
- Participated in 13 LMES Performance Evaluation Group evaluations as a consultant to the team manager
- Operational Readiness Review Training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

- Led LMES RA for Y-12 Depleted Uranium Operations, Disassembly and Assembly, and Quality Evaluations
- Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

- The Manager, Performance Evaluation Group, reports to the vice president, Defense & Manufacturing.

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Floyd E. Freeman

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

DRILLS (DR): Core Objectives 21 and 22
STARTUP PROGRAM (S/U): Core Objective 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Mechanical Engineering, University of South Carolina
- U.S. Navy Nuclear Power Program - 22 years
- Lockheed Martin Energy Systems (LMES) Performance Evaluation Group - six years

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Certified as LMES Performance Evaluation Group team manager and lead evaluator
- Served as team manager and as lead evaluator that evaluated operations, maintenance, and health and safety areas at LMES facilities
- Operational Readiness Review Training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in one LMES Performance Evaluation Group evaluation of Y-12
- Overview training by Y-12 Management
- Participated in management self assessment of Y-12 Receipt, Shipment, and Storage, Quality Evaluation, Disassembly and Assembly, and Depleted Uranium Operations

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Normally assigned to the LMES Performance Evaluation Group
- No direct responsibility for Y-12 Nuclear Operations Activities

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Ronald D. Shaffer

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MANAGEMENT (MG): Core Objectives 20, 24, 25, 26, 27, 29, and 34
SAFETY DOCUMENTATION (SD): Core Objectives 1, 2, 3, 4

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Mechanical Engineering, Ohio State University
- U.S. Navy Nuclear Power Program - eight years
- Commercial Nuclear Plant Experience
 - Engineering
 - Licensing
 - Senior Reactor Operator
 - Operations Advisor
 - Maintenance Manager
 - Startup Engineer
 - Training Manager
 - Consultant to the NRC
- Consultant in the areas of Engineering, Operations, and Maintenance
- Lead Consultant for DOE Headquarters Offices of Nuclear Safety and Environment, Safety, and Health

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in over 40 SSFIs and EDSFIs in commercial nuclear facilities
- Led over 100 integrated assessments at DOE and commercial nuclear facilities
- Member of the Management Subteam on two Tiger Teams
- Subteam leader for DOE HEU Vulnerability Assessment team
- Participated in 10 DOE Headquarters ORR for initial startup and restart of facilities

SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in LMES RA in Y-12 Disassembly & Assembly and Quality Evaluations
- Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Has not personally performed any work for the Y-12 facility management responsible for Enriched Uranium Operations.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: James R. Sprenkle

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 17, 18, and 19

PROCEDURES (PR): Core Objectives 7 and 9

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Nuclear Engineering, The Pennsylvania State University
- M.A., Business, Webster University
- U.S. Navy Nuclear Power Program - 20 years
- Lockheed Martin Energy Systems (LMES) Performance Evaluation Group - six years

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Certified as LMES Performance Evaluation Group team manager and lead evaluator
- Served as team manager and as lead evaluator for operations in environmental, safety, and health evaluations of LMES facilities
- Operational Readiness Review training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

- Served as team manager for one LMES Performance Evaluation Group evaluation of Y-12
- Overview training by Y-12 management
- Participated in management self-assessment of Y-12 Receipt, Shipment, and Storage, Depleted Uranium Operations, and Disassembly and Assembly
- Participated in LMES RA for Y-12 Quality Evaluations

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Normally assigned to the LMES Performance Evaluation Group
- No direct responsibility for Y-12 Nuclear Operations activities

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: William E. Hill

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 17, 18, and 19
PROCEDURES (PR): Core Objectives 7 and 9

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Nuclear Engineering, University of Tennessee
- U.S. Navy Nuclear Power Program - six years
- Participant in LMES evaluations in operations arena since 1991
- Experience
 - Engineer
 - Facility Manager at four ORNL facilities
 - Senior Reactor Operator; 800+ startups; 15,000+ control room hours
 - Writer
 - Wrote HFIR Surveillance Test Procedures
 - Rewrote TSR-II Technical Specifications
 - MBA alternate for two MBAs

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Qualified as LMES Performance Evaluation Group evaluator; participated in three evaluations
- ORR Team Member for shipment of HFIR fuel utilizing GE-2000 Fuel Cask
- Managed removal of leaking spent fuel from TSF, managed removal of activated beryllium reflector from HFIR pool - both projects underwent successful ORRs and were accomplished without incident

SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in two Y-12 evaluations, one was a training assessment
- Overview training by Y-12 management
- Participated in LMES RA for Y-12 Quality Evaluations

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Normally assigned to Research Reactors Division, ORNL
- No direct responsibility for Y-12 Enriched Uranium Operations

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: C. Keith Stalnaker

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 23, 35, and 36

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Engineering, The Ohio State University
- M.B.A., Ohio University
- Lockheed Martin Energy Systems (LMES) Performance Evaluation Group - four years
- Professional engineer registration
- Certified safety professional

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Certified as LMES Performance Evaluation Group team manager and lead evaluator
- Served as team manager and as lead evaluator for health and safety in operations evaluations of LMES facilities
- Operational Readiness Review training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in one LMES Performance Evaluation Group evaluation of Y-12
- Overview training by Y-12 management
- Participated in management self-assessment of Y-12 Receipt, Shipment, and Storage and Disassembly and Assembly
- Served as team leader for management self-assessment of Y-12 Depleted Uranium Operations
- Participated in LMES RA for Y-12 Quality Evaluations

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Normally assigned to the LMES Performance Evaluation Group
- No direct responsibility for Y-12 Nuclear Operations activities

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Terry L. Betz

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 23, 35, and 36

SUMMARY OF TECHNICAL QUALIFICATIONS:

- U.S. Navy Nuclear Power Program - six years
- Idaho National Engineering and Environmental Laboratory (INEEL)
 - Support of EH-31 in development of technical training policy, orders, standards, and implementation guidelines
 - Operations and supervision at the Advanced Test Reactor
 - Evaluation and consultant for the Nuclear Regulatory Commission

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Numerous training program assessments at various DOE facilities
- Member of two ORR teams at Rocky Flats

SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in review of the training program in the Y-12 Plant Disassembly and Storage Organization.

BASIS FOR ACCEPTABLE INDEPENDENCE:

- INEEL employee with no involvement in preparing EUO for restart.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: George P. Zagursky

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MODIFICATIONS (MD): Core Objectives 5, 6, 8, and 15
SURVEILLANCES (SV): Core Objectives 10, 11, and 12

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Nuclear Engineering, Mississippi State University
- M.B.A., University of Miami Executive Program
- Ph.D., Nova Southeastern University
- Commercial Nuclear Experience
 - Start-up Engineer and Hot Functional Coordinator
 - Technical Support Supervisor
 - Design Engineering Mechanical/Nuclear Group Manager
 - Senior Reactor Operator (SRO) trained
- Institute of Nuclear Operations (INPO)
 - Assistant to the Vice President of Analysis & Engineering
 - Technical Support Plant/Corporate Evaluator and Section Head
 - Design Engineering Lead Corporate Evaluator
 - Developed INPO's position on Configuration Management, which was published in document #INPO-87-003
 - Developed the original INPO Design Engineering corporate evaluation performance objectives and criteria
- DOE Experience
 - Senior Consultant in the areas of Management, Operations, Design Change Process, Configuration Management (CM), Training, and Business Process Re-engineering
 - Helped develop various management and technical programs at Y-12, K-25, Pantex, Savannah River, Fernald, et al.
 - Washington team member for DOE-STD-1073-93 on CM

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in 27 INPO plant and corporate evaluations
- As a consultant, lead/participated in over 30 additional NRC/INPO style evaluations, audits, and assessments at various commercial nuclear plants and DOE facilities

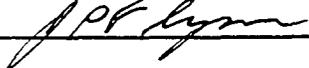
SUMMARY OF FACILITY FAMILIARIZATION:

- Participated in LMES RA of Y-12 Disassembly & Assembly
- Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

- LMES subcontractor with no regular interface with Y-12

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: James J. Bazley

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

Criticality Safety Assistance in Several Core Objectives

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., Nuclear Engineering, University of Arizona
- DOE and NRC Nuclear Industry Criticality Safety - thirteen years
 - Knowledgeable of handbook data and the SCALE/KENO computer code
 - Familiar with high enriched uranium fuel fabrication, compound conversions, chemical recovery, laboratory operations, materials packaging, and waste generation and disposal
- Consultant in criticality safety field, member of various ANSI/ANS criticality safety standards writing groups and national workgroups

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in and led numerous appraisal and audits of nuclear facilities at the Idaho National Engineering & Environmental Laboratory and Babcock and Wilcox - Naval Nuclear Fuel Division from a criticality safety and/or nuclear safety perspective
- Management Oversight and Risk Tree Training
- Operational Readiness Review Training, May 1994
- Quality Assurance Audit Techniques, 1992

SUMMARY OF FACILITY FAMILIARIZATION:

- Familiar with similar processes in other DOE and NRC facilities
- EUO orientation

BASIS FOR ACCEPTABLE INDEPENDENCE:

- Has not personally performed any work for Y-12

ACCEPTABLE TO TEAM MANAGER



APPENDIX 3

ORR Assessment and Deficiency Forms

ORR ASSESSMENT FORM

Functional Area:	Core Objective Number:	Date:
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Method of Appraisal (short narrative description):

Personnel contacted/position:

Records & other documents reviewed:

Evolutions/operations witnessed:

Discussion:

Conclusion:

Inspected by:	Approved by: _____ ORR Team Manager
	Date:

ORR DEFICIENCY FORM

Functional Area:	Core Objective Number:	Date: ID #:
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Requirement:

Reference(s) (specific as to section):

Finding _____

Observation: _____

Discussion:

Finding Designation: Prestart _____ Poststart _____	Inspector: _____
Group Leader: _____ Date: _____	Approved by: _____ ORR Team Manager Date: _____

APPENDIX 4

Finding Classification Criteria

Appendix 4: Finding Classification Criteria

This checklist will be used by the ORR team to determine whether a deficiency must be corrected prior to startup.

A. Initial Screening

1. Does this issue involve a safety system?
2. Does this issue involve processes, functions or components identified in the Technical Safety Requirements/Operational Safety Requirements or nuclear safety control procedures?
3. Does this issue involve potential adverse environmental impact exceeding regulatory or site specific release limits?
4. Does this issue impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?
5. Is this issue non-compliant with a Energy Systems approved startup document?
6. Does this issue indicate a lack of adequate procedures or administrative systems?
7. Does this issue indicate operational or administrative non-compliance with procedures or policy?
8. Has this issue occurred with a frequency that indicates past corrective actions have been lacking or ineffective?
9. Does this issue require operator training not specified in existing facility training requirements?
10. Does the issue involve a previously unknown risk to worker or public safety and health or a previously unknown threat of environmental insult or release.

If the response to any of the above is yes, further evaluation, in accordance with the issue impact criteria below is required. If the response to all of the above is no, the issue may be resolved after restart.

B. Issue Impact

1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?
2. Does the loss of operability of the item require operator action in less than ten (10) minutes to prevent or mitigate the consequences of events described in the Safety Analysis?
3. Does the loss of operability of the item cause operation outside the TSR/OSRs or Safety Analysis?
4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the Safety Analysis?

5. Does the issue indicate a lack of control which can have a near term impact on the operability or functionality of safety related systems?
6. Does the issue involve a violation or potential violation of worker safety or environmental protection regulatory requirements which poses a significant danger to workers, the public, or of environmental insult or release?

If the response to any of the above questions is yes, the item should be considered a startup item.

