DOE F 1325.8
(4/93)

United States Government | **Department of Energy**

Oak Ridge Operations Office

memorandum

DATE: March 26, 1996

REPLY TO ATTN OF: DP-811:Christenson

SUBJECT: **Y-12 SITE OFFICE RESTART TEAM DISASSEMBLY AND ASSEMBLY ACTIVITIES CLOSURE REPORT**

TO: Robert J. Spence, Y-12 Site Manager, DP-81, ORO

Attached is the final "Y-12 Site Office Restart Team Disassembly and Assembly Activities Closure Report," dated March 26, 1996. This report is submitted to meet the near-term deliverable N.4.2 of the 94-4 Implementation Plan, and it summarizes the activities conducted to close the DOE Readiness Assessment pre-restart findings identified during the review of Disassembly and Assembly Activities.

If you should have any question or need additional information, please contact Dale Christenson at 4-3964 or me at 6-9854.

for Thomas S. Tison
Restart Team Manager

cc w/attachment:
D. L. Wall, DP-81

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 SITE OFFICE RESTART TEAM

DISASSEMBLY AND ASSEMBLY ACTIVITIES CLOSURE REPORT

MARCH 26, 1996

D&A Resumption Area Lead: _____ **Date:** 3/26/96
Frank S. Poppell

D&A Team Leader: Mark A. Lundie for DE Christenson **Date:** 3/26/96
Dale E. Christenson

Restart Team Manager: Mark A. Lundie for TS Tison **Date:** 3/26/96
Thomas S. Tison

U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 Site Office Restart Team

Disassembly and Assembly Activities Closure Report

A DOE Readiness Assessment (RA) was performed for the resumption of the Disassembly and Assembly (D&A) mission area from February 26 through March 7, 1996, as mandated by DOE Order 5480.31, *Start-up and Restart of Nuclear Facilities*. The DOE RA was necessary following a stand-down of Y-12 Plant facilities on September 22, 1994. The resumption strategy resumes Y-12 nuclear operations by mission area. D&A was the third mission area to be resumed under this strategy. The DOE RA team's report, *Readiness Assessment for Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant*, dated February 26 through March 7, 1996, identified three pre- and five post-restart for resolution and closure by Lockheed Martin Energy Systems (LMES). These findings were formally transmitted to LMES by the DOE Y-12 Site Office (YSO). One pre-restart and one post-restart finding was identified for resolution and closure by DOE. The YSO is responsible for closure of all findings with the exception of the one pre-restart DOE finding which was closed by the Office of the Assistant Manager for Environment, Safety, and Quality.

Prior to resumption of D&A, the Y-12 Site Office Restart Team (YSORT) verified adequate implementation of the LMES corrective actions for the pre-restart findings and validated the corrective action plans for the post-restart findings. Verification of the post-restart findings will also be performed by DOE as LMES submits findings for closure in accordance with established closure dates. Weekly meetings between DOE and LMES are held to discuss the status of the corrective actions for resolution of the post-restart findings. The findings and associated corrective action plans have been entered into the LMES Energy Systems Action Management System (ESAMS). The closure packages for LMES actions in response to the DOE RA findings are available in the Quality Organization and YSORT evidence files.

Four areas of concern were identified during the DOE RA related to; 1) training program and control of personnel certification, 2) LMES start-up plan to integrate management of follow-on graded operations, 3) enhanced DOE oversight plan to support the integrated LMES resumption, and 4) audible/visual alarm capability of Criticality Accident Alarm System (CAAS). The DOE RA team concluded that D&A activities can be safely restarted upon correction of LMES Management Self-Assessment, LMES RA, and DOE RA pre-restart

findings. Specific corrective actions to all DOE RA pre-restart findings are as follows:

Finding No. MG7-1: "Planned oversight coverage to support resumption of the Disassembly and Assembly operations has not been documented."

Corrective Actions: LMES Procedure Y10-190, *New Activity Start-up Control*, was reviewed for adequacy. It was determined that initial fissile material disassembly operations that deal with the actual unit disassembly will require additional oversight by YSO. The Y-12 Site Manager issued a memorandum to the Lead Facility Representative (FR) and the YSO Branch Chiefs directing these oversight requirements. In addition, the Y-12 Site Manager issued a letter to LMES directing timely notification of all disassembly activities. The FRs will observe both operations and management's supervision of the initial disassembly work. The FRs shall continue observation of disassembly activities until they are confident that operations can proceed on a routine basis at which point the Y-12 Site Manager shall approve decreased observation activity. The YSO ES&H and Program Management Branches will review those safety programs related to D&A operations as part of the "Y-12 Site Office Annual Assessment Plan," and will concentrate on continuous improvement in the areas of conduct of operations, document control, procedures, criticality safety, training, and lessons learned for all continuing nuclear operations at the Y-12 Plant following the restart of D&A. For future D&A activities, the contractor will be required to evaluate changes to procedures, equipment, training, and personnel using Procedure Y10-190. YSO will monitor the contractor's evaluation and make a judgement as to its effectiveness prior to the start-up of the new activity.

Finding No. OP5-1: "An adequate start-up plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment,

the viability of procedures, and the adequacy of training of operators."

Corrective Actions: LMES developed a generic start-up plan for D&A and disseminated this plan to the Nuclear Operations organization to ensure normal operations are resumed in a safe and efficient manner following restart approval. To address the programmatic implications of this finding, a procedure change request was issued requesting that the start-up plan requirements be added to Procedure Y10-190 during the next revision.

Finding No. SE1-2: "The alarm signal for the CAAS in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs)."

Corrective Actions: Modified portable radiation detection devices have been provided to organizations that are required to use them. These detectors provide audible and visual indications that a criticality may have occurred and latches in the alarm condition upon activation. A Standing Order (SO) was issued by the Vice President of Defense and Manufacturing to operations, utilities, emergency response, and maintenance personnel providing guidance on the control of operational activities in high-noise areas covered by the CAAS and establishes requirements for the use of the portable radiation detection devices in these areas. For a period of several weeks as routine shift turnover occurs, personnel are being re-briefed on the proper use of these devices prior to their use. In addition, post-restart corrective actions have been developed to perform an Unreviewed Safety Question Determination (USQD) of the as-found condition along with an OSR revision, if necessary, and to complete an engineering study of the high-noise areas including a risk analysis of the study's recommendations to determine long-term corrective action.

Finding No. TR1-1: "Procedures and practices to remove certifications from personnel who do not maintain proficiency are not

established. A qualified personnel list is not maintained for the Quality Organization."

Corrective Actions: The Operations Manager issued Standing Order No. SO-9204-2E-96-014 providing instructions for maintaining certification and proficiencies. This SO establishes requirements for maintaining a program that will track, record, evaluate, and reestablish proficiency and is applicable to those personnel who are required to be certified to perform fissile material activities within the facility. A list of qualified personnel from the Quality Organization who support the D&A mission area was developed and issued to the Operations Manager. Quality Organization SO Nos. 96-06, *Instructions for Maintaining Proficiencies*, and 96-07, *Instructions for Maintaining Certifications*, were issued to establish requirements for maintaining a program that will track, record, evaluate, reestablish proficiency and establish a list of qualified personnel. In addition, post-restart corrective actions have been developed to identify Quality Organization personnel assigned to support conduct of operations implementation in Buildings 9204-2 and 9204-2E as defined in SO No. 95-05, *Building 9204-2/2E Memorandum of Understanding*, and to provide training to these personnel on Chapters I, II, V, VI, VIII, IX, XV, XVI, and XVIII of the Nuclear Operations Conduct of Operations Manual.

Based on review and verification of the corrective actions developed for the above-mentioned findings, there is sufficient evidence to conclude that the findings were adequately closed and that the corrective actions have been adequately implemented. The post-restart findings have been incorporated into both ESAMS and YSO tracking systems for closure. The YSO will continue to monitor the contractor's continuing operations in D&A, in subsequent resumption areas, and in special operations to ensure lessons learned from this restart review are incorporated. This will be accomplished through the established assessment programs of the FRs, the YSO ES&H and Program Management Branches, and the YSORT.

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: March 15, 1996

REPLY TO ATTN OF: SE-33:Rothrock

SUBJECT: FINAL REPORT FOR THE READINESS ASSESSMENT FOR DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

TO: James C. Hall, Manager, M-1
Thur: Robert W. Poe, Assistant Manager for Environment, Safety, and Quality, SE-30

At your direction the Y-12 Disassembly/Assembly Readiness Assessment (RA) was conducted during February 26 through March 7, 1996. It is the conclusion of the RA Team that Disassembly/Assembly operations can be safely started upon the completion of corrective actions for the pre-start LMES and DOE findings outlined in the attached final report. There has been no change in the key issues since the outbrief on March 7, 1996.

I recommend that the Y-12 Site Office (YSO) be responsible for closure of the LMES pre-start findings and that the Office of the AMESQ be responsible for closure of the DOE pre-start findings. The YSO should also be able to approve the corrective action plans for all the post-start findings in accordance with the Department of Energy Operational Readiness Review standard DOE-STD-3006-93.

If you have any questions or require further assistance, please contact me at (423) 576-0830.

John D. Rothrock

John D. Rothrock, Team Leader
Y-12 Disassembly/Assembly
Readiness Assessment Team

Attachment

cc w/attachment:
See Page 2

cc w/attachment:
S. Richardson, M-2
D. Rhoades, DP-24 (3)
B. Spence, DP-81, Y-12
R. Nelson, DP-80
T. Tison, YSORT
F. Gustavson, LMES (5)
R. Lagdon, EH-11
D. Knuth, DP-30
W. Andrews, DNFSB
Team Members

cc w/o attachment:
X. Ascanio, DP-31
W.F. Hensley, DP-31
J. King, DP-311

READINESS ASSESSMENT FOR DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

VOLUME I

February 26–March 7, 1996

U.S. Department of Energy
Oak Ridge, TN 37830

I, by signature here, acknowledge that I concur with the TEAM LEADER in the findings and conclusions of this report in my assigned functional area.

Ken Rhyne
Criticality Safety

Doug Outlaw
Criticality Safety

Cliff Hsieh
Management

Jim Grise
Management

David Allen
Operations

Bob Baeder
Operations

Lon Brock
Procedures

Tom Donovan
Procedures

John Conlon
Safety Envelope

Ken Kellar
Safety Envelope

Ted Hinkel
Training and Qualification

Ed Little
Training and Qualification

CONCURRENCE: Jeffry Roberson
Senior Advisor — Date 3/7/96

APPROVED: John Rothrock
RA Team Leader — Date 3/7/96

TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Readiness Assessment (RA) is one of several activities to be completed prior to resuming Disassembly/Assembly (D/A) operations at the Oak Ridge Y-12 Plant. The Manager, Oak Ridge Operations Office (ORO) will rely, in part, on the results of this assessment in determining whether the criteria for safe operations have been met.

The Y-12 Plant is a government-owned, contractor-operated facility located in Oak Ridge, Tennessee. For many years, the primary mission at Y-12 was the production of uranium weapons components. In recent years, Y-12 has been assigned roles in support of stockpile reduction initiatives. The D/A processes are a key portion of the Y-12 activities and are essential to the completion of national commitments in the reduction of nuclear stockpiles worldwide.

The D/A processes at Y-12 include the disassembly and assembly of nuclear weapons components.

The D/A mission area encompasses two facilities, Buildings 9204-2 and 9204-2E. Disassembly activities are conducted in Building 9204-2E and include manual techniques and a single-lathe operation. Disassembled parts are identified, verified, weighed, and transferred to the materials management area for disposition. Assembly activities, conducted in Building 9204-2E, include component certification, verification, pretreatment, and assembly.

At the direction of the Manager, ORO, this RA was conducted February 26 through March 7, 1996, in conformance with the Department of Energy (DOE) Order 5480.31/ O 425.1 and associated standards. The RA was a systematic inquiry into the ability of Lockheed Martin Energy Systems (LMES) to operate the Y-12 D/A operations safely. The review stressed six areas: Criticality Safety; Management, Operations, Procedures, Safety Envelope, and Training. Specifically, the areas identified in the DOE Plan-of-Action (POA) for D/A which were considered direct contributors to the September 1994 shutdown were stressed.

The criteria are based upon departmental policy as promulgated through DOE safety rules and orders. The judgment of experienced technical experts was used in applying the requirements to a performance-based review of operations.

The material condition of the facility is satisfactory to support the resumption of operations. There is an increased sensitivity to both criticality safety and conduct of operations concerns. An improved site-wide safety culture has been established. Personnel performance is adequate to support D/A operations.

There were four areas of concern noted during this RA:

1. The alarm signal for the Criticality Accident Alarm System (CAAS) in 9204-2E does not provide an audible or visual warning in all areas of the facility as required by the Operational Safety Requirements (OSRs). The Y-12 Site Office issued guidance to address this condition, including a

requirement to conduct an engineering evaluation to identify permanent solution. The evaluation has not been conducted and current compensatory measures are inadequate for long term operation.

2. A startup plan has not been developed that will confirm operability of equipment, the viability of procedures, and the training of operators during the initial stages of resumption of operations. D/A implementation plans have focused primarily on the completion of the RA process. A plan that integrates management of follow-on graded operations is necessary to ensure safety and facilitate problem resolution.

3. Planned DOE oversight coverage to support resumption of D/A operations is not documented. Enhanced DOE oversight during the integrated LMES resumption activities is the next step in proceeding to routine D/A operations.

4. Procedures to ensure that only certified personnel are permitted to perform D/A operations are not in place.

In addition, a deficiency was noted in implementation for training on the C-5 mock-up disassembly. This training was not formally conducted. Critiques of the evolutions did not capture lessons learned. Differences between the mock-up and the actual device were not delineated. As a result, full training value was not realized.

It is the conclusion of the RA Team that D/A operations can be safely restarted upon: (1) correction of remaining Management Self-Assessment (MSA) and LMES identified pre-start discrepancies that existed at the commencement of this review, and (2) correction of the pre-start findings listed in this report. Successful completion of all findings should be verified by the Y-12 Site Office with the exception of the finding concerning DOE's oversight plan which should be closed by ORO. The DOE Y-12 Site Office was determined to be capable of fulfilling its responsibilities for oversight of D/A operations.

Following is a list of the pre-start findings. A finding is defined as a deficiency requiring corrective action. Pre-start findings must be corrected before startup and a plan-of-action for post start findings must be approved prior to startup. Observations are comments that are intended to assist in improving operations. Findings and observations for each functional area are listed at the end of the summary for that functional area.

Findings: Pre-start

MG7-1 Planned oversight coverage to support resumption of the Disassembly and Assembly operations has not been documented. (Pre-start)

OP5-1 An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. (Pre-start)

SE1-2 The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area (MAA) does not provide an audible or visual warning in all areas the 9204-2E Facility as required by the Operational Safety Requirements (OSRs). (Pre-start)

TR1-1 Procedures and practices to remove certifications form personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization. (Pre-start)

READINESS ASSESSMENT REVIEW FOR THE RESUMPTION OF DISASSEMBLY/ASSEMBLY ACTIVITIES AT THE OAK RIDGE Y-12 PLANT

February 26 - March 7, 1996

1.0 INTRODUCTION

Department of Energy (DOE) Orders 5480.31, O 425.1, and Standard DOE-STD-3006, promulgate policy and prescribe the process for obtaining approval for the startup or restart of a facility and include the requirements for the conduct of the DOE Readiness Assessment (RA) and resolution of identified items. The purpose of this RA is to comply with the cited directives and verify the readiness of the Oak Ridge Y-12 Plant (Y-12) to resume Disassembly/Assembly (D/A) of nuclear weapons components.

The Y-12 Site is a government-owned site operated under contract by Lockheed Martin Energy Systems, Inc. (LMES). Overall management and operations of Y-12 are contracted responsibilities to LMES. DOE oversight is provided by the Oak Ridge Y-12 Site Office with support from the Oak Ridge Operations Office through the Environment, Safety, and Health matrix organization.

The Y-12 Site is one of three installations in Oak Ridge, Tennessee. Activities for restart of operations for Y-12 are divided into mission areas which are defined by programmatic mission description and needs. This RA addresses the D/A activities at Y-12. Disassembly activities, conducted in Building 9204-2E, include manual techniques and a single-lathe operation. Disassembly begins with receipt of the unit on the second floor of Building 9204-2E from the storage area. The unit is transported by forklift truck to the tear-down area inside the Material Access Area, which consists of approximately 7,500 square feet of floor space. The unit is removed from its container and placed on a worktable using an overhead crane and unit-specific lifting device. Disassembly of the unit is performed in a recirculating walk-in hood using manual hand tools and pneumatic devices. A small lathe is used for disassembly activities outside the walk-in hood. As parts are removed, they are identified, verified, weighed, and segregated for further disassembly operations or transfer out of the area. Transferred parts go to the materials management area for final disposition to recovery processing areas.

The DOE conducted the RA in conformance with an approved RA Implementation Plan dated January 30, 1996, and a Plan-of-Action dated January 8, 1996. A team of technical experts reviewed the Y-12 D/A documentation and procedures; inspected equipment, systems and buildings; interviewed personnel; and observed simulated and actual operations. The reviews conducted by each RA team member were guided by the Criteria and Review Approach Document (CRAD) which contain the objectives, criteria, and the approach to satisfy the criteria.

1.1 BACKGROUND

In September 1994, Disassembly/Assembly operations were suspended by LMES, in response to observed violations of administrative safety controls associated with material storage arrays. Operations personnel, upon discovery of the criticality safety violation, did not immediately execute required actions. As an initial step following the event, all Criticality Safety Approvals were walked down, and seven categories of criticality safety nonconformances were identified, with a total of 1,344 individual observations.

Examination of the data from the evaluation of the Criticality Safety Approvals walkdowns, the occurrence report covering the initial infraction, the Type C investigation, and the Defense Nuclear Facilities Safety Board recommendation 94-4, indicate the basic cause to be lack of rigor in Conduct of Operations that permitted less-than-strict compliance with procedures. The DOE RA of Y-12 concentrated on verifying Y-12's readiness to resume operations with respect to material, personnel, and programs in those areas which contributed to the events leading to the shutdown. The specific causal factors (procedural compliance and conduct of operations) related to criticality safety were the focus of the in-depth review. Management and training, areas which also contributed to the shutdown, were fully reviewed. The remaining areas in the core requirements specified in the Implementation Plan were reviewed to the extent necessary to evaluate their contribution to the shutdown.

1.2 SCOPE

The breadth of the RA is defined in the Implementation Plan, Section 3.0. The scope is further defined and detailed in the CRAD which are included in Volume II of this document. These CRADs were written to focus the review on the causal factors of the D/A operations shutdown.

The RA team reviewed the following facilities, systems/equipment, and areas:

Facilities: All facilities, procedures, and processes associated with the D/A function at Y-12, specifically Building 9204-2E.

Systems/Equipment: All systems, equipment, components, and instruments associated with these D/A processes. Specifically selected systems and equipment important to worker and process safety were included, such as:

- Criticality Accident Alarm Systems
- Fire Suppression Systems

NOTE: Refer to the Plan-of-Action, page A-IV-1, for complete listing of additional systems subject to review.

Functional Areas: Those functional areas associated with the D/A mission that contributed to the September shutdown. If inadequacies were observed or identified in a particular functional area that were a result of programmatic deficiencies, then a review of those specific higher level aspects also occurred. The functional areas reviewed were:

Criticality Safety (CS)
Management (MG)
Operations (OP)
Procedures (PR)
Safety Envelope Verification ( )
Training (TR)

2.0 OVERALL READINESS ASSESSMENT PROCESS

The RA Team consisted of a Team Leader, Senior Advisor, technical experts (selected for their knowledge and experience in the functional areas reviewed), and administrative assistants. Each team member had assessment experience, and no team member had any connection with Y-12 D/A operations that impacted their independence to review their assigned functional area. Team member biographies are contained in Appendix I of this report. All team members received site and facility familiarization training, necessary radiological and safety training, and completed additional required reading to familiarize themselves with the RA objectives and review criteria.

The team included members with previous experience in the Operational Readiness Assessment/Review process, as well as technical experts from the DOE-ORO and Headquarters staff. Many of the team members participated in the RA of Receipt, Storage, and Shipment Operations at Y-12.

The Y-12 D/A operations RA was a performance-based review with emphasis on observing performance for adequacy rather than simply reviewing program structure and organization. The RA was conducted in three phases. The first phase was a review of the program documents associated with the functional areas above, procedures used to implement these programs, and actual plant records of completed actions associated with these programs. These documents were evaluated against DOE and facility mandatory requirements. The second phase consisted of observing actual and simulated operations and drills at the facility. This allowed an in-depth evaluation of operator and equipment performance, as well as the quality of procedures. The third phase was an evaluation of level of knowledge for operator and support personnel. Emphasis was placed on the areas of concern observed during operations. This gave the team members an opportunity to determine whether the problems noted were programmatic or unique to an individual.

2.1 CONDUCT OF THE READINESS ASSESSMENT

The RA onsite review was conducted February 26 - March 7, 1996. The draft RA report was submitted at the close-out briefing. Team members were afforded the opportunity to review the final report before publication. Their agreement with the conclusions of this report is documented herein.

The Team met daily during the onsite review. Team members discussed significant observations or problems identified during the day. These discussions permitted the Team Leader an opportunity to identify any trends or areas where more detailed information was required. Potential schedule difficulties and information gaps were identified and corrected at team meetings.

2.2 READINESS ASSESSMENT DOCUMENTATION PROCESS

Documentation of findings and the assembly of the objective evidence of operational readiness were responsibilities of each team member. Two types of administrative forms were used to accurately document onsite assessment activities and findings.

The Assessment Form (Form 1) was used to document the methods and actions taken by a team member in the criteria evaluation process. Each Form 1 is designed to cover a specific objective defined in the CRAD and lists the means the team member used to measure the site's performance relative to that objective. A final Form 1 is complete enough for an outside agency reviewing the form to follow the inspection logic and means used to verify the site's performance and validate the RAs completeness and adequacy.

The Deficiency Form (Form 2) was used to document the issues identified during the assessment and evaluation process. A Form 2 documents an issue related to a particular objective when deficiencies are discovered within the objective.

All Forms 1 and 2, are attached to this document in Volume II. The determination of whether a finding was pre-start or post start was the responsibility of the Team Leader. That determination was made in consultation with the team member documenting the specific issue and weighed against the criteria set forth in Appendix 3, Volume II, *Determining Pre-start/Post Start Findings*.

This final report is the full compilation of information gained from the RA process and is documented in the forms used to review activities and identify issues. It is signed by the Team Leader and team members. Each team member was given an opportunity to make a statement regarding any differing technical opinion(s) for attachment to this report.

3.0 SUMMARY OF RESULTS

This Section of the report summarizes the information contained in the Forms 1 and 2, which provide the total and complete description of the review activities and results. The results of each functional area are summarized, followed by a list of specific findings and observations. The Team Leader, in consultation with technical experts using the criteria of Appendix 3 of the RA Implementation Plan, determined the category of the findings, either pre-start, post start, or observation. A finding is defined as a deficiency requiring corrective action. Those designated as pre-start must be corrected prior to restart of the D/A activities. Those designated post start must have an approved POA prior to restart. An observation is a comment that provides information that could improve operations. Successful completion of all findings should be verified by

the Y-12 Site Office with the exception of the finding concerning DOE's oversight plan which should be closed by ORO. Upon request, individual members of the RA team are available to assist ORO and the Y-12 Site Office in verifying satisfactory closure of these findings.

Programs and practices to ensure safe operations have improved significantly as compared to the conditions noted at the time of the September 1994 shutdown. The following issues require corrective action prior to resumption:

- o Prompt action has not been taken to resolve a deficiency in alarm coverage of the Criticality Accident Alarm System (CAAS).
- o The contractor has not developed an adequate plan to perform a controlled resumption of D/A operations.
- o DOE has not documented oversight plans for resumption activities.
- o Procedures to ensure that only certified personnel are permitted to perform D/A operations are not in place.

The alarm signal for the CAAS in Building 9204-2E does not provide an audible or visual warning in all areas of the facility as required by the OSR. The Y-12 Site Office issued guidance to address this condition, including a requirement to conduct an engineering evaluation to identify a permanent solution. The evaluation has not been conducted. The compensatory action approved by the Y-12 Site Office was temporary and is not adequate to support operations in the long term.

A startup plan has not been developed that will confirm operability of equipment, the viability of procedures, and the training of operators during the initial stages of operations. D/A implementation plans have focused primarily on the completion of the RA process. Differences exist between the available training (mock-up) and the actual operation which must be managed. D/A does not have a startup plan to complete corrective actions and final requirements to manage the startup effort.

Planned DOE oversight coverage to support resumption of D/A operations is not documented. It is appropriate to have a heightened level of DOE oversight during the initial stages of operations to ensure resumption preparations have adequately prepared the facility and operators for D/A activities. Enhanced DOE oversight of the integrated LMES resumption activities is the next step in proceeding to routine D/A operations.

Training on mock-up disassembly was not formally conducted and much of the available training benefit was not realized. Critiques of the evolutions did not capture lessons learned. This hampered improvements to the process during the follow-on mock-up training. Differences between the mock-up and the actual device were not delineated. Adequate operator knowledge, however, was demonstrated during simulated disassembly operations.

Quality Organization (QO) personnel are not trained on revisions to Tri-Plant procedures such as Equipment, Testing, and Inspection (ETI) procedures.

Additionally, the QO has not upgraded technical procedures to current requirements. This issue was identified by the LMES RA and identified appropriately for correction. The DOE RA Team concurs in this disposition and the finding should be corrected prior to restart.

The closure of findings from YSORT and the LMES RA was incomplete. A review of the evidence files documenting closure of the pre-start findings revealed insufficient information to support closure of items. Also, a Request for Approval documenting a noncompliance with DOE 5480.22 does not include corrective actions to resolve the noncompliance in that a path forward to implement TSRs at the facilities of concern is absent.

The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the OSR. Recent changes to the CAAS were not documented in the safety basis document.

FUNCTIONAL AREA SUMMARIES

Criticality Safety (CS): The objective of this functional area review was to determine if the functions, assignments, responsibilities, and reporting relationships for the criticality safety organization are clearly defined, understood, and effectively implemented with line-management responsibility for control of safety.

A review of the criticality safety organization indicated that it is well established and functioning in support of the operations organization. Their roles, responsibilities, and reporting relationships are clearly described and understood by the management and technical staff within the Nuclear Criticality Safety Department (NCSD). Interviews and records indicated that the criticality safety organization has adequate facilities, equipment, and qualified staff.

The walkdown of the selected Criticality Safety Approvals (CSAs) for the D/A facilities and observations of several evolutions and drills did not identify any criticality safety-related problems. It is apparent that much progress has been made in implementing the changes and improvements to the criticality safety program since the Receipt, Storage, and Shipment Readiness Assessment six months ago.

Review of records and discussions with NCSD staff supporting D/A activities indicate that they are well qualified and adequately trained. Interviews and in-plant observations indicated that they understand the facilities, are well aware of the criticality safety limits, and are well aware of the required actions when reporting abnormal and emergency conditions.

The interviews also indicated that, with the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system. Several external reviews of the Y-12 criticality safety program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Over the past . . months, NCSD, in conjunction with Y-12 operating departments, support organiz. ions, facility safety, and the DOE site office, initiated visits to three other sites to identify areas for improvement and best of practices that could be adapted to the Y-12 Plant Criticality Safety Program. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicate that many good ideas were obtained from other plants. This process to make the long-term improvements to the Y-12 Criticality Safety Program suggested by many outside reviewers appears to be progressing and should be continued. (CS1-1)

A baseline compliance status of DOE Order 5480.24 has been performed, and three Requests for Approval of Compliance Schedule Agreements have been approved by DOE. The contractor did not identify compensatory measures for these order requirements, and none is required for restart of D/A activities.

The personnel and management systems associated with this functional area were reviewed, and it was judged that the criticality safety program and personnel could support a safe restart of D/A operations.

Observation

CS1-1 Long-Term Improvements to Y-12 Criticality Safety Program should continue.

Management (MG): The objective of this functional area review was to assess Disassembly/Assembly management (DOE and/or LMES) readiness in the following areas: training and qualification; organization and functions; implementation of management systems used to identify, evaluate, and resolve deficiencies and recommendations made by internal and external assessment groups; implementation of the DOE standards program; safety culture improvements; satisfactory completion of the LMES Readiness Assessment; effectiveness of the Facility Representative program; and the satisfactory completion of the Y-12 Site Office self assessment-to determine readiness of their oversight capabilities.

Manager selection criteria, training, and qualification were determined to be satisfactory. Manager level of knowledge and experience is adequate to support increased awareness of safety and continuous improvement.

The organizational structure is well documented, and the managers' roles and responsibilit s are adequate. Managers understand their roles and accept their responsibility for safety in the facilities. Mentor functions are adequately described, and mentors performed satisfactorily in their role to support performance improvements. The guidelines for removal of mentors as a compensatory measure for facility safety are clearly defined.

The LMES process for identification, evaluation, and resolution of deficiencies is now under review for process revision. Management attention has improved use of the current system, and adequate results were verified by review of several closure packages. Documentation of the closure verification methods were deficient.

The standards program was determined to be satisfactory and meets the requirements of DOE directives. The requirement to conduct assessments to routinely verify adherence to standards is being improved.

The program to establish a site-wide safety culture is effective and well understood by the work force.

The LMES Readiness Assessment satisfies the requirements of the approved Plan of Action and the Readiness Assessment Implementation Plan. The Readiness Assessment Team was comprised of well-qualified and experienced personnel. The final report was well written and very useful for the conduct of the DOE assessment. The LMES RA process was an effective assessment of facility readiness to resume operations.

The Facility Representative Program is well established. Also, the assigned personnel are adequately trained, qualified, and provide proper oversight of the facility. There is no documented plan to provide additional oversight coverage for the startup period.

The YSO self-assessment of their readiness to support resumption is adequate and verifies DOE readiness to oversee resumption. Review of YSO closure verification activities disclosed a weakness in documentation of the closure verification methods.

In conclusion, the organization, management staffing, training, and qualification are satisfactory. Programs that promote safety are effective and understood by the work force. Line management has demonstrated effective control of facility safety. Mentor participation is effective in improving operations. The Issues Management and Corrective Action Programs are improving. DOE is prepared to provide oversight of operations, but needs to document the resumption coverage requirements. D/A operations can be safely conducted upon correction of the pre-start finding below.

Findings: Pre-start

MG7-1 Planned oversight coverage to support resumption of the Disassembly and Assembly Operations has not been documented.

Findings: Post start

MG3-1 LMES RA evidence files do not contain the necessary verification documentation for pre-start finding closures.

MG8-1 YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures.

Observations:

MG2-1 Upper level management support, counsel and team building could use improvement.

Operations (OP): Operations were reviewed to determine whether the knowledge and numbers of operations personnel are adequate to support safe D/A operation, and whether personnel have an adequate and practical understanding of safety and conduct of operations. Documents were reviewed, and various drills and evolutions were observed to determine whether the Conduct of Operations Implementation is in compliance with DOE Order 5480.19, "Conduct of Operations", and is adequate to support safe D/A operations. Personnel were interviewed and observed in the performance of their jobs to determine if they demonstrated a commitment to public and worker safety, health, and environmental requirements. In conjunction with the Critical Safety (CS); Management (MG); Procedures (PR); Safety Envelope (SE); and Training and Qualification (TR) sections, the operability of equipment, the viability of procedures, and the training of operators were reviewed to determine if LMES was ready to resume D/A activities.

The initial stage of the implementation of the Conduct of Operations has commenced. Y-12 D/A is implementing these requirements in a phased approach, but there must be dedicated, consistent, and continuous development in this area as the project matures. The D/A operational performance during evolutions and drills for this Readiness Assessment was satisfactory. The Y-12 D/A compliance assessments of DOE Orders 5000.3B and 5480.19 have been completed, noncompliances have been addressed, and the D/A operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions. D/A has a program for periodic management assessment of the continued need and adequacy of the compensatory measures.

The Y-12 D/A Implementation Plans to date have focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations. An appropriate restart program has not been developed for the identified processes, and the processes are fully operable to perform their intended function: to document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of training to the intended use of the restarted equipment. (OP5-1)

Revisions to the OSR in September 1995 helped to clarify the issue of the numbers of staff required to support safe operations. The addition of a standing order to provide further detail on the minimum staffing levels based upon the building status further clarified staffing.

In conclusion, the operations and support personnel have been properly trained and are ready to safely perform their jobs upon correction of the pre-start finding identified below.

Findings: Pre-start

OP5-1 An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

Procedures (PR): The objective of the procedures functional area of the RA was to determine whether there were adequate and correct procedures for operating systems and utility systems. Also, the system for the control of the issuance and use of procedure revisions was evaluated for viability.

Approximately thirty D/A procedures were reviewed in varying detail during the assessment. Procedures reviewed included technical procedures from both the Disassembly and Storage Organization (DSO), and the Quality Organization (QO). DSO procedure revisions began at an earlier date than QO as a result of the amount of management attention given to DSO during the RSS restart effort. However, the QO did not benefit from this readiness attention. Following the LMES RA for D/A that identified QO procedure deficiencies, renewed management attention was focused on the problem and a QO Manager of Procedures, Training, and Document Control was appointed on February 23, 1996, just prior to the beginning of the RA.

DSO has indicated that of the sixty procedures requiring revision, approximately 47 have been completed with the remainder being primarily administrative. QO on the other hand had approximately twenty-six technical procedures to revise. At the beginning of the RA, 17 remain to be revised to the 9/1/95 revision of Y10-102. Of the 17 remaining to be revised, seven had associated CSAs. The implementation of the CSA revisions has been previously identified by a LMES RA as pre-start and post-start findings. This is an appropriate disposition of the findings.

Better procedure history files and more adequate records of verification and validations are noted improvements to the procedures program. The history files for recent revisions to procedures for QO indicate that the revision process is being conducted in accordance with Y10-102 with records of verification and validation, and USQ screens being a part of the process.

The D/A personnel interviewed had a good understanding of step-by-step procedure compliance and the concept of and mechanics of working copies of procedures. All of the D/A personnel interviewed concerning procedure use were sufficiently familiar with the stop and recover requirement where difficulties are encountered with the evolution of a procedure. No difficulties were identified in the evolutions observed.

An adequate knowledge of the procedure process was demonstrated through the shift evolution and drill process observed. Implementation of the procedures for these activities was adequate.

Findings:

None

Safety Envelope Verification (SE): The objective of this functional area review was to verify that adequate and correct safety limits for operating systems have been established; to verify that programs are in place to calibrate safety system components; to confirm and periodically reconfirm the condition and operability of safety systems; and to verify that the safety systems are currently operable.

The Operational Safety Requirements (OSRs) adequately ensure the operability of the D/A safety significant systems. However, the system configuration and surveillance requirements for the CAAS do not match the description provided in the system's technical basis document referenced in the OSRs. (SE1-1)

The CAAS was determined to be fully operable in accordance with the OSRs with the exception there was no audible or visual alarm in one area on the third floor of Building 9204-2E. (SE1-2)

Although the safety limits and controls are adequate for the D/A activities, the D/A OSRs and their supporting safety documentation do not comply with the requirements of DOE Orders 5480.22 and 5480.23. The Request for Approval to address noncompliances with DOE Order 5480.22 does not provide clear actions or a schedule that will result in satisfactory development and approval of Technical Safety Requirements (TSRs). (SE5-1)

The program to calibrate equipment for the safety significant systems adequately tracks the calibration requirements for all necessary equipment. However, improvements were identified that would add value to the CAAS maintenance program. (SE3-1)

In summary, the D/A safety envelope was examined through record reviews, interviews of personnel supporting D/A activities, and observation of shift evolutions. It was determined that D/A operations will maintain the safety envelope upon correction of the pre-start finding identified below.

Findings: Pre-start

SE1-1 The alarm signal for the CAAS in the Building 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the OSRs.

Findings: Post start

SE1-2 The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the OSRs.

SE5-1 The D/A facilities do not have TSRs that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions or schedule to develop TSRs.

Observations:

SE3-1 The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector.

Training (TR): The objective of this functional review was to ensure that the training and qualification process and the execution of the training program was sufficient to resume Disassembly and Assembly operations at the Oak Ridge Y-12 Facility.

Procedures to ensure that only certified personnel are permitted to perform duties are not in place. These requirements must be met to ensure operations are safely conducted and must be implemented prior to restart. A strong relationship between line management and the training organizations has not yet been established at Y-12. Training programs have achieved excellence as a result of the extensive oversight associated with resumption activities. The training program for the Quality Organization has only recently been upgraded.

Training on the C-5 Unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock-up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training are of insufficient detail and lack review of senior managers.

Training has been performed to the latest revision to procedures. The administrative process for ensuring that Quality Organization personnel are trained to the latest revisions to procedures is deficient as there is no system to ensure that revisions to Tri-Plant Equipment, Testing, and Inspection (ETI) procedures are screened for training.

A baseline compliance review of the requirements of DOE Order 5480.20A within the areas of Disassembly and Assembly activities has been performed. Noncompliances are appropriately identified, corrective measures are documented, and are now being implemented. The administration of the drill program is effective and has improved since the Readiness Assessment for Receipt, Shipment, and Storage.

Improvements in training performance since the Readiness Assessment for Receipt, Storage, and Shipment were noted. It was determined that training is adequate to support the resumption of D/A operations upon correction of the pre-start finding identified below.

Findings: Pre-start

TR1-1 Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A qualified personnel list is not maintained for the Quality Organization.

Findings: Post-start

TR2-1 Training on the C-5 Unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock- up and the actual disassembly of a C-5 Unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers.

TR4-1 Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures.

Observations:

TR1-2 Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management.

4.0 LESSONS LEARNED

DOE O 425.1, Startup and Restart of Nuclear Facilities, requires lessons learned with respect to the RA process and to the operations, design, and maintenance of DOE facilities. The following lessons learned are provided for this readiness assessment.

Core Requirement #10 of DOE O 425.1 specifies as an objective that "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." This objective is often misunderstood by activities/facilities preparing for restart. Most organizations evaluated in ORRs/RAs assume that plans and activities are necessary up to the conduct of the ORR/RA, but do not prepare plans to address measures appropriate to safely restore full operations following the ORR/RA. Conditions normally exist which prevent achievement of full readiness for a period of time after the ORR/RA is completed. Operational restrictions may still be in place. Final operator qualification may not yet be achieved. Testing restrictions may still remain. Actual use (vice walkthrough) of operational procedures is often not possible. Many facilities/activities have experienced procedural problems, equipment failures, and training deficiencies which have delayed proceeding to full operation when they do receive permission to resume operations following the ORR/RA. A graded plan which describes the process to be used to perform operations with adequate oversight and supervision sufficient to assure safety and facilitate problem resolution is required. This requirement should be clearly stated in Core Requirement #10.

During this RA some interviews were scheduled during the operations phase. This resulted in coordination problems for the inspected activity and difficulties for the RA team personnel in observing operations and conducting interviews at the same time. Some interviews were missed as a result. While this lesson has probably been learned before, it is reiterated that a dedicated period for interviews should be planned to occur after the record reviews and operations phases of the ORR/RA.

For some of the interviews, multiple interviews were scheduled in the same room. Even with a large size room, this does not promote the correct environment for conducting interviews. This practice should be avoided.

This RA essentially involved the review of two separate activities, the D/A operations and the Quality Organization. As a result, it was necessary for the team to visit personnel in various buildings and to review records at several locations during the RA. This resulted in a lack of optimum efficiency for the team. Where possible, it is recommended that records locations and personnel contacts be assigned by the evaluated activity so as to maximize the efficiency of the review process.

APPENDIX 1

Y-12 RA FUNCTIONAL AREA ASSIGNMENTS AND BIOGRAPHICAL SKETCHES FOR RA TEAM MEMBERS

APPENDIX 1

DISASSEMBLY/ASSEMBLY READINESS ASSESSMENT
FUNCTIONAL AREA ASSIGNMENTS

FUNCTIONAL AREA	TEAM MEMBER
TEAM LEADER	JOHN ROTHROCK
SENIOR ADVISOR	JEFF ROBERSON
RA COORDINATORS	DONNA CLEVENGER-EGAN JO KERSH
CRITICALITY SAFETY (CS)	KEN RHYNE DOUG OUTLAW
MANAGEMENT (MG)	CLIFF HSIEH JIM GRISE
OPERATIONS (OP)	DAVID ALLEN BOB BAEDER
PROCEDURES (PR)	LON BROCK TOM DONOVAN
TRAINING (TR)	TED HINKEL ED LITTLE
SAFETY ENVELOPE VERIFICATION (SE)	JOHN CONLON KEN KELLAR

APPENDIX 1

BIOGRAPHICAL SKETCHES FOR RA TEAM MEMBERS

Allen, David R. (Operations) is the Chief of the Environmental Operations Branch, Environmental Protection Division, Department of Energy-Oak Ridge Operations Office. He holds a BS in Mechanical Engineering from the University of Kentucky and is a licensed Professional Engineer. He has 15 years experience working with both private and Federal nuclear facilities and equipment. The first three years of his career were with the Tennessee Valley Authority where he was a lead Mechanical Engineer responsible for the construction and installation of both safety and non-safety related piping and components at the Watts Bar Nuclear Plant. He then spent one year as a Facility Safety Engineer with the Clinch River Breeder Reactor Project. After cancellation of that project, he served as a Mechanical Engineer in the Enriching Operations Division, responsible for all aspects of the Paducah Gaseous Diffusion Plant, but primarily focusing on the operational aspects of the facilities. In 1986, he was selected as the Site Manager and Contracting Officer's Representative for the Department of Energy's Paducah Gaseous Diffusion Plant where he served until 1991 when he assumed his current position. He has led several multi-disciplinary functional appraisals of the Oak Ridge Operations Office facilities, looking at compliance with all aspects of Environmental, Safety, and Quality program implementation. He led a team of specialists in conducting a nuclear regulatory inspection of both the Paducah Gaseous Diffusion Plant, and the Portsmouth Gaseous Diffusion Plant. He also was the Team Leader of Type A Investigation Board investigating a fatality on the Oak Ridge Operations Office Reservation.

Baeder, Bob (Operations) is a senior engineer with XL Associates supporting the Department of Energy for Defense and Environmental Management Programs. He holds a B.S. in Naval Engineering from the United States Naval Academy, Masters' Degrees in Naval Architecture and Marine Engineering from the Massachusetts Institute of Technology, and he is currently earning his Ph.D. in Management. He has more than 24 years of naval experience as a nuclear submarine officer. His experience in the Navy Nuclear Power Program includes tours as the Reactor Control Officer on a new construction submarine, the Engineer Officer for a submarine completing a regular overhaul, and the Executive Officer during a reactor refueling submarine overhaul. Additionally, he served as the Associate Chairman of Mechanical Engineering at the United States Naval Academy and taught thermodynamics, fluid mechanics, and nuclear engineering. He also served for the Chief of Naval Operations in Program Management for the Navy's Ashore and Afloat Command, Control, and Communications Systems (C3). In that capacity, he participated in a complete assessment of the Navy's C3 systems and developed major changes to align afloat and ashore C3 systems in a program of common engineering development. As a result of his significant military experience in nuclear power and his solid academic background, Mr. Baeder brings extensive expertise in reactor plant operations, nuclear and thermodynamic/fluid mechanics engineering, maintenance, and mechanical design. Mr. Baeder retired from the Navy in September 1994, and immediately joined XL Associates Inc., serving for the DOE support in Operational Readiness Reviews (ORRs), Readiness Assessments (RAs), Standards and Requirements Implementation, and Performance Assessments and Self-Assessments. In these capacities, he has recently served on the Savannah

River Site (SRS) Replacement Tritium Facility (RTF) Validation and Verification (V&V), the SRS In-Tank Precipitation (ITP) Assessment, the Oak Ridge Y-12 Receipt, Storage, and Shipment (RSS) Restart Readiness Assessment, the Oak Ridge K-25 Deposit Removal Project (DRP) ORR, and the SRS F-Canyon Phase II Restart ORR. Additionally, he is presently scheduled to participate in the Nevada Test Site (NTS) Combined Device Assembly Facility (CDAF) ORR.

Brock, Lon (Procedures) is a member of the Facility Safety Engineering Team in the Quality and Facility Safety Division, DOE-ORO. He holds a M.S. degree in Physics and a B.S. degree in Engineering Physics, both from the University of Tennessee. He has a total of 28 years experience with DOE and in commercial nuclear power, aerospace, and manufacturing. He has been with DOE since 1991 where he has served as the ORO Standards Co-Manager for technical concerns and as the ORO Metric Transition Coordinator. His nuclear experience includes facility safety, quality assurance, design, and licensing, and he has managed a PWR engineering procedures program. His experience in quality engineering includes reviews of procedures, quality assurance plans, nonconformance reports, root cause analyses, design change requests, engineering services task packages, construction workplans, maintenance requests, post-maintenance testing, and post-temporary alteration testing.

Clevenger-Egan, Donna (Lead RA Coordinator) is currently a support contractor serving the DOE-ORO Quality and Facility Safety Division as a Senior Quality Assurance Specialist. She completed the two year Office Administration Program from the University of Tennessee in 1983. Ms. Clevenger-Egan has six years of experience providing administrative support services to quality assurance related missions and over seven years of management experience, all of which has been gained during the provision of support services at the Department of Energy Oak Ridge Operations Office. She has diverse administrative and management skills, and has successfully served as the readiness review coordinator on several DOE restart reviews, including the Y-12 Receipt, Storage, and Shipment Readiness Assessment, and the K-25 Deposit Removal Operational Readiness Review. She completed the Operational Readiness Review training in December 1994.

Conlon, John (Safety Envelope) has a B.S. in civil engineering and more than twelve years of experience in the nuclear and environmental management fields. Mr. Conlon was in the U.S. Navy Nuclear Propulsion Program where he served as the engineering department head on board a nuclear powered submarine and as the operations officer at a landbased prototype reactor. Mr. Conlon has been a senior project engineer for PAI Corporation since 1993. During his time with PAI, he has supported the U.S. Department of Energy (DOE) in operations, safety, and environmental management projects at several facilities. He evaluated safety documentation and operating limits for the tritium and high level waste facilities at the Savannah River Site. He developed a training and qualification program for DOE facility representatives at the nuclear material separations facilities at Savannah River. He evaluated occurrences at the F- and H-Canyons in Savannah River and provided recommendations for corrective actions. He conducted conduct of operations appraisals of facilities at Lawrence Livermore Laboratory and waste management facilities on the Oak Ridge reservation. He was a team member for a ESH&QA management appraisal of the K-25 Site. He has participated in ESH&QA functional appraisals of the Portsmouth and Paducah Gaseous Diffusion Plants. He participated in the Readiness Assessment of

Receipt, Storage, and Shipment at Y-12, and the Operational Readiness Review for the K-25 Deposit Removal Program.

Donovan, Thomas K. (Procedures) is a senior consultant with XL Associates. He holds bachelors and masters degrees in Biology and a Sc D in Environmental Health. He has over thirty years of experience in Environmental, Safety, and Health activities. The first twenty plus years were spent in various capacities with the Tennessee Valley Authority including positions in project management and investigation of employee concerns over the safety of nuclear plants. For the past seven years, he has been a consultant to DOE. As a consultant at Rocky Flats, he was involved in the preparation of the Environmental Assessment for the Plutonium Recovery Modification Project as well as recent activities for the FRETS Comprehensive Risk Assessment. He managed a technical support group providing services to DP in Washington that included assessments, Tiger Teams, and EH assessment action item activities. At the Pinellas Plant, he provided environmental engineering and health and safety services including preparation of several environmental analyses, Tiger team action plan preparation, and safety analyses. For ORO, he managed a support services contract that provided Environmental, Safety, & Health, Quality Assurance, and engineering services to the site offices and with LMES for the GAAT-TS. His activities at LANL include serving as the Lead Industrial Safety Mentor where his activities included supporting LANL management with restart activities, and assisting with the TA-55 Upgrade CDR and LANL Site Wide EIS. His most recent experiences have centered on providing management assistance in the areas of procedure preparation and formality of operations.

Grise, James E. (Management) is a Senior Executive Consultant with SMS Corporation. He holds a [illegible]ngineering and an MS in Marine Affairs. Mr. Grise has 35 years of e[illegible]e in the engineering and nuclear fields. The first 29 years of his c[illegible]were spent in the Navy, including 24 years in the Nuclear Propulsion Pro[illegible]. He spent six years as the Commanding Officer of two nuclear submarines. Post-submarine command tours included assignments in nuclear maintenance, operations, inspections, and training. As Commanding Officer of the Navy's largest afloat facility for nuclear plant repairs, he was responsible for the supply and repair of 13 submarines. In 1988, Mr. Grise retired from the Navy. Since that time, he has served as a consultant to the Department of Energy in the areas of training, inspections/appraisals, Operational Readiness Reviews, and as a Conduct of Operations monitor at various facilities. As a result of his Navy nuclear experience, he possesses expertise in most areas of nuclear operation and maintenance, particularly training, management, and inspection/oversight. Additionally, Mr. Grise has three years of experience at Savannah River Site, one and one-half years at Rocky Flats several months at Pantex, and two years at Los Alamos National Laboratory. Mr. Grise has participated in Operational Readiness Reviews at K-Reactor, ITP Facility, F-Canyon and FB-Line at Savannah River Site, the Building 707 Contractor Operational Readiness Review at Rocky Flats, the Plutonium Facility Readiness Assessment at Los Alamos National Laboratory and the AT-400A packaging Contractor Readiness Assessment at Pantex.

Hinkel, Ted (Training and Qualification) is employed by the Department of Energy (DOE) as a Technical Training Specialist in the Training and Development Division, Oak Ridge Operations Office. He holds a BS in Mechanical Engineering. Mr. Hinkel has 15 years experience in the Nuclear Field. He spent 14 years in the Naval Nuclear Propulsion field as a Shift Test Engineer, Fluid and Mechanical Systems Nuclear Engineer and Supervisory Nuclear Engineer. His experience involved reactor plant operations and maintenance and eight years with Naval Nuclear Technical Training Programs in Procedure Preparation, QFI, Radiological Controls and specialized nuclear maintenance evolutions. Mr. Hinkel has also been employed with a contractor to DOE, working on Decontamination/ Decommissioning and Technical Training Program projects at Hanford and Rocky Flats. He has been a member of numerous naval nuclear propulsion program radiological controls practice evaluations and midterm inspections. Mr. Hinkel recently transferred to the DOE and completed Operational Readiness Review training against the new Order 5480.31.

Hsieh, Cliff (Management) is an Electrical Engineer serving as a Senior Quality Engineer for the Quality and Facility Safety Division, Department of Energy-Oak Ridge Operations Office. He holds a B.S. in Electrical Engineering from the University of Illinois and a MS in Environmental Engineering from the University of Tennessee. His professional experience includes first 20 years in commercial nuclear power design, construction, and preoperation while serving as an electrical engineer with the Tennessee Valley Authority (TVA). During this period, 10 years was devoted to construction and system operations as he was responsible for various auxiliary and back-up systems for reactor control. His diverse background led to other important functions as auditor and procedure writer, and was instrumental in the development of inspection programs at TVA. As a certified lead auditor with TVA, he led and participated in numerous audits and inspections. As a Department of Energy employee since 1988, his major responsibility is the oversight of contractor waste management programs that require his involvement in the reviews of technical and safety specifications, conduct of operations, and quality issues. Mr. Hsieh has participated and led numerous multifunctional reviews, including leading two successful operational readiness evaluations for the Highly Enriched Uranium Refeed Activity at Portsmouth Gaseous Diffusion Plant, and one operational readiness review for the Deposit Removal Project at the Oak Ridge K-25 Plant.

Kellar, Ken (Safety Envelope) is employed by the Department of Energy as a Nuclear Engineer. He holds a BS in Engineering Physics and is currently working on his MBA. He spent the first seven years of his career as an officer in the Naval Nuclear Propulsion Program. His Navy experience involved nuclear plant operations culminating in qualification as Chief Engineer. During his later duty, he was an instructor of Reactor Operations and Supporting Theory. Mr. Kellar came to the Department of Energy in 1992. His primary duties have consisted of performance of assessment activities. Those activities include: Nevada Test Site and Kansas City Plant Technical Safety Appraisals; Building 707, Rocky Flats Operational Readiness Review (training assessment); review of training and operator proficiency for the Los Alamos, Omega West Reactor, Type B Investigation; Pantex, Zone 4 Stage Right, Operational Readiness Review (training assessment); Weapons Complex Training Surveys in support of the Defense Nuclear Facilities Safety Board Recommendation 93-3; and the Defense Waste Processing Facility ORR for the Savannah River Site (quality assurance).

Kersh, Jo is employed by the Department of Energy as a Secretary and ORR Coordinator for the Defense Programs' Office of Engineering, Operations, Security, and Transition Support. She has nine years experience as an administrative and technical support assistant in Government service. The last eight years have been with the Department of Energy. She has provided coordination and technical support for the Defense Programs' Technical Safety Appraisal at Kansas City Plant, the Replacement Tritium Facility Operational Readiness Review, FB-Line, and F-Canyon, F-Canyon Phase II, and DWPF, Operational Readiness Reviews at Savannah River site, and the Receipt, Storage, and Shipment Readiness Assessment at the Oak Ridge Y-12 Plant.

Little, Edward S. (Training and Qualification) has over 30 years of operational and technical management experience in the U.S. Navy. His experience included extensive involvement in the management, supervision, performance based training, material, and management assessment of naval nuclear reactors. He is currently employed as a Principal Analyst with Sonalysts, Inc. As a nuclear trained submarine officer, he served on five nuclear powered submarines. His submarine shipboard assignments included responsibilities as an Engineering Department Division Officer, Engineer Officer, Executive Officer, and Commanding Officer. Significant navy staff assignments included duties as a member of the Atlantic Fleet Navy Nuclear Power Examining Board, as a member of the staff of ADM H.G. Rickover, and as a Deputy Squadron Commander. He served as Commanding Officer of a nuclear submarine repair ship and was responsible for the resupply and repair of a squadron of ten nuclear powered submarines. His experience with DOE has included participation in a DOE ORR for Building 771 at the Rocky Flats Plant; the evaluation of the state of training at four DOE sites in response to Defense Nuclear Facilities Safety Board Recommendations 92-7 and 93-3; and the review and evaluation of the effectiveness of DOE directives concerning the assembly, disassembly, and testing of nuclear weapons in response to Defense Nuclear Facilities Safety Board Recommendation 93-1.

Outlaw, Doug (Criticality Safety) is an Experimental Nuclear Physicist with a broad background in technical assessment and policy analysis of environmental, safety and health issues and problems for Department of Energy, NASA, and other Federal agencies. His principal efforts at SAIC have been supporting the Department of Energy and NASA Headquarters and the major contractors operating the Department of Energy sites in safety and environmental analysis. This has included preparation of Safety Analysis Reports and various environmental documents, such as Environmental Assessments and Impact Statements. He is currently serving as a Senior Program Manager and Senior Scientist at SAIC. Dr. Outlaw served as a technical expert in the areas of safety analysis, criticality safety, and other safety-related areas for facility reviews of the Department of Energy Defense Programs facilities. Between 1991 and 1993, Dr. Outlaw has served as a technical expert in eight Department of Energy-Headquarters/Defense Programs sponsored Technical Safety Appraisals of major Department of Energy facilities, including the Mound Plant, Lawrence Livermore National Laboratories, the Pantex Plant, the Nevada Test Site, and the Kansas City Plant. Since 1993, Dr. Outlaw has served on Operational Readiness Reviews for Zone 4 at Pantex, and F-Canyon Phases 1 and 2, FB-Line, ITP, and DWPF at the Savannah River Site, Building 771 at Rocky Flats, and Receipt, Storage, and Shipment at Y-12. Dr. Outlaw has

served as the technical expert in the areas of safety envelope, criticality safety, emergency preparedness, engineering support, and configuration management.

Rhyne, Ken (Criticality Safety) is a Nuclear Engineer with a background in systems engineering and safety analysis. He is presently serving as a program manager for DOE-OR's Oak Ridge National Laboratory (ORNL) Site Office. His duties in this capacity include oversight of ORNL's programs in the areas of facility safety documentation upgrades, criticality safety, fire protection, nuclear materials control and accountability, quality assurance, configuration management, and Unreviewed Safety Question Determinations (USQD). Prior to this assignment, his other DOE-ORO assignments were with the Safety and Health Division performing safety documentation reviews, and the High Flux Isotope Reactor Site Office providing a liaison between DOE and the operating contractor. His professional experience prior to DOE involved systems engineering with the Tennessee Valley Authority at both the Sequoyah and Watts Barr Nuclear Plants. Mr. Rhyne participated in the September 1995 Y-12 Readiness Assessment for Receipt, Storage, and Shipment.

Roberson, Jeff (Senior Advisor) is a Nuclear Engineer with the Department of Energy Defense Programs. He holds a BS in Nuclear Engineering from the Georgia Institute of Technology. He has 13 years experience in the nuclear field. He spent the first years of his career at the E.I. Hatch, Nuclear Generating Facility of the Georgia Power Company, Baxley, Georgia, in the Reactor Controls Division, conducting fuel transfer operations during two refueling outages. He then served in the Navy's Nuclear Power Program where he served as Assistant Engineer on a nuclear submarine. He was certified as a Chief Nuclear Engineer by the Naval Reactors Branch of the Department of Energy. As a result of his Navy and civilian experience, he has significant background in many areas of nuclear operations, maintenance, health physics, and nuclear design. Mr. Roberson separated from the Navy in 1990 and spent one year as a Programs Manager for a major acquisition program for the Department of the Navy. Mr. Roberson joined the Department of Energy in 1991. Since then, Mr. Roberson has worked in the Defense Programs' Office of Inspections as a Team Leader for the 1992 Defense Programs Technical Safety Appraisal at the Lawrence Livermore National Laboratory and Functional Area Leader on several other Technical Safety Appraisals. Mr. Roberson served on the Operational Readiness Review of the Replacement Tritium Facility at the Savannah River Site in the Conduct of Operations area. He also served on the Pantex Zone 4 Operational Readiness Review as the Area Leader in Conduct of Operations, as the Assistant Team Leader for the 1994 Operational Readiness Review of Building 707, Rocky Flats, and for the F-Canyon Operational Readiness Review in the Maintenance and Safety Envelope functional areas. Mr. Roberson's areas of expertise are conduct of operations, maintenance, safety envelope, and radiation protection.

Rothrock, John (Team Leader) is the Director of the Safety and Health Division for the Oak Ridge Operations Office. He holds a BS in Electrical Engineering from Washington State University and a Master of Engineering degree from Texas A&M in Industrial Engineering. He is a former Army officer. He has 25 years of government experience with the last 15 years being spent with the Department of Energy. The first years of his career were spent as a Radar Engineer on the PATRIOT missile system. He joined the Department of Energy in 1980 as a

Contracting Officer's Representative and Senior Plant Representative at Goodyear Aerospace Corporation, where he managed production of gas centrifuge machines for the Department of Energy Uranium Enrichment Program. In 1985, he became the Director of the Oak Ridge Operations Office Quality and Reliability Division with responsibility for the Quality Assurance, Reliability, Maintenance Management, and Energy Conservation Programs. In 1991, Mr. Rothrock became the Safety and Health Director with responsibility for health physics, criticality safety, fire protection, industrial safety, industrial hygiene, and transportation safety. Mr. Rothrock has extensive appraisal and investigation experience. He is Department of Energy Operational Readiness Review and Tiger Team trained. He was a member of the Technical Safety Appraisal at the Plutonium Finishing Plant at Hanford. Mr. Rothrock chaired the Department of Energy Type B investigation of the embrittlement of the High Flux Isotope Reactor pressure vessel. Over the last few years, Mr. Rothrock was the Team Leader of several multi-disciplinary Environmental, Safety, and Health functional appraisals at the Oak Ridge Operations Office sites. He has also served as a team member on the Y-12 Receipt, Storage, and Shipment Readiness Assessment, and Quality Verification Inspections at several of the Department of Energy reactors, including the FFTF at Hanford and EBR-II and NRAD at ANL-West.

APPENDIX 2

CRITERIA AND REVIEW APPROACH DOCUMENTS

VOLUME II

Table of Contents

APPENDIX 2

CRITERIA AND REVIEW AND APPROACH DOCUMENTS

CRITICALITY SAFETY (CS)

OBJECTIVE (CO-24)

CS.1 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined, understood and effectively implemented. This includes confirmation that nuclear criticality management and staff clearly understand and accept their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of personnel assigned to augment/strengthen the criticality safety organization have been defined. The conditions under which temporary (non-permanent and/or borrowed personnel) can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the disassembly/assembly operations records to ensure that the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined for disassembly/assembly functions. Focus should be on disassembly/assembly operations and change since the Receipt, Storage, and Shipment Readiness Assessment. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of temporary (non-permanent and/or borrowed personnel) assigned to the nuclear criticality safety organization. The conditions under which these personnel can be removed is documented. (5480.19, Ch. I and III)

Interviews: Check that management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization specific to disassembly/assembly, ensure communications between Criticality Safety Organization and line management are clear. Verify that individuals understand their assignments, responsibilities, and reporting relationships and conditions under which temporary personnel may be released.

Shift Performance: Observe how management communicates and has implemented control of safety.

OBJECTIVE (CO-27)
CS.2 A baseline compliance status review of Department of Energy Order 5480.24 has been performed. Noncompliance items have been addressed. (CORE REQUIREMENT #7)

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Request for Approval have been adequately addressed for the facility/activity. (Y/AD-623, Plan for Continuing and Resuming Operations, dated October 1994, states this requirement)

Compensatory measures specified in the Criticality Safety Approval are adequately understood and implemented by operations managers. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the Order compliance package for Department of Energy Order 5480.24, including all applicable Compliance Schedule Agreements, exemptions and compersatory measures. For identified Requests for Approvals, verify that schedule commitments have been met and compensatory measures identified.

Interviews: Interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the Order requirements, and any interim compensatory measures.

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

MANAGEMENT (MG)

OBJECTIVE (CO-23)
MG.1 The management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENT #19)**

Criteria

The Oak Ridge Y-12 Site contractor operations line management, up to and including the Manager of Nuclear Operations, have sufficient applicable experience and/or training to adequately understand facility operations and safety systems under their cognizance. (DOE-STD-1063-93, para 4 and 5, 5480.20A, para 9, Ch. I, para 7, and Ch. 4, 5480.19, para 3.a., 5000.3B, para 5.d, 8, and 9.h)

Entry-level requirements are established for each operations management position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, para 9, Ch. 1 and 4)

Approach

Discuss training and qualification review results with the Readiness Assessment team members evaluating the training area.

Interviews: Interview members of the contractor operations and safety organizations and mentors in place as compensatory measures and assess understanding of disassembly/assembly operations and the safety envelope. Verify whether management effectively promotes awareness of requirements for safe operation as reflected in Criticality Safety Approvals, Operational Safety Requirements and appropriate procedures by interviewing operations personnel.

Shift Performance: Observe management personnel interactions with operations personnel during evolutions and drills to assess qualification.

OBJECTIVE (CO-24)
MG.2 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined, understood and effectively implemented. This includes confirmation that line management clearly understands and accepts their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures have been defined. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the records to ensure that the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of mentors assigned as compensatory measures. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Interviews: Interview selected managers to verify that line management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations). Verify that individuals understand the conditions under which mentors can be removed.

Shift Performance: Observe how line management communicates and has implemented control of safety.

OBJECTIVE (CO-25)
MG.3 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. **(CORE REQUIREMENT #6)**

Criteria

The outstanding open findings and corrective actions have been assessed by the contractor to determine if their lack of closure may preclude safe operations and if appropriate actions have been taken for those determined to have impact. (5480.19, Ch. VI and VIII; 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), and Attachment I, para II.A.3.)

Approach

Record Review: Review the Energy Systems Action Management System and any other systems used to identify, evaluate, and resolve deficiencies, selecting representative issues and assessing the adequacy of the program. Assess the backlog and prioritization system for reducing it. This will include the Lockheed Martin Energy Systems, Inc. Operations Manager's reevaluation of internal and external assessment performed on their operations since October 1993. Determine if the corrective actions have been appropriate as discussed in Y/AD-623 and if Lockheed Martin Energy Systems, Inc. operations' response to outside reviewer comments and findings are adequate.

Interviews: Interview operational and management personnel to establish their understanding of the program.

Shift Performance: Evaluate the line management's understanding of the control of safety during a simulated off-normal safety condition.

OBJECTIVE (CO-27)
MG.4 A systematic review of the facility's conformance to applicable Department

of Energy Orders has been performed, any contractor non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Requests for Approvals have been adequately addressed for the facility/activity. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments. (Y/AD-623, Standards/Requirement Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

The Order Compliance Self-Assessment program is an ongoing and viable program supporting line management needs. (Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Confirm that the noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance and if the actions described in the Requests for Approvals have been adequately addressed for the facility/activity.

Interviews: Interview operations managers and operations personnel to assess their understanding of compensatory measures that are in place for existing non-compliances and actions in progress to gain compliance.

Shift Performance: Observe and assess the adequacy of any compensatory measures that are in place during the conduct of evolutions and drills.

OBJECTIVE (CO-29)
MG.5 A program is established to promote a site-wide safety culture. (CORE REQUIREMENT #14)

Criteria

An increased awareness and understanding of criticality safety and conduct of operations principles has been achieved. Training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Approach

Record Review: Spot check that the training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. Review any processes used by management to continue to maintain and communicate these safety priorities.

Interviews: Interview a cross-section of personnel to spot check for the level of awareness and understanding of criticality safety and conduct of operations. Compare the observed level of awareness and understanding with description of the causal factors.

Shift Performance: During shift performance and drills monitor the level of supervisory and operator concern for criticality safety and conduct of operations principles.

OBJECTIVE (CO-30)

MG.6 The results of the responsible contractor "Readiness Assessment" are adequate to verify the readiness of hardware, personnel, and management programs for safe operations. The Y-12 Site Office has reviewed the contractor Readiness Assessment and management self-assessment and completed a management self-assessment which verifies the readiness of the Y-12 Site office to oversee resumed facility operations. **(CORE REQUIREMENT #17)**

Criteria

The contractor Readiness Assessment and management self-assessment were adequately executed and it is confirmed that the scopes were properly established. A sufficient breadth of activities, facilities, and management systems were reviewed. The contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria and Review Approach Documents as written. Corrective actions and closure packages for restart findings have been verified to formally document, manage and resolve the Readiness Assessment restart findings. The contractor has issued a Readiness-to-Proceed Memorandum which is endorsed by the Y-12 Site Office and transmitted to the Restart Authority. (5480.31, para 9.b. (9) and (10))

Approach

Record Review: Review the contractor Readiness Assessment plan, findings, recommendations, implementation plans, and schedules to ensure they are complete in scope and adequate in detail. Verify the rationale for contractor acceptance of any noncompliance items. Decide whether the contractor has systematically analyzed findings for root causes and generic implications. Review the qualifications of the contractor Readiness Assessment team. Verify the contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria Review and Approach Documents as written. (Input should be solicited from each functional area for this objective.) Review the contractor management self-assessment plan, findings, recommendations, and schedules to ensure they are complete in scope and adequate in detail. Review the qualifications of the management self-assessment team. Decide whether the contractor has adequately verified readiness assessment prerequisites and core objectives as identified in the Plan of Action and verified completion of other commitments in Document Y/AD-623, *Plan for Continuing and Resuming Operations*.

Interviews: Interview contractor Readiness Assessment team and Management Self-Assessment team leaders to verify the adequacy of their assessments.

Shift Performance: Select previously identified findings to determine if corrective actions have been effective in resolving the issue.

OBJECTIVE (CO-31)
MG.7 Y-12 Site Office facility representatives are assigned and qualified to oversee and provide direction and guidance to the contractor. **(CORE REQUIREMENT #16)**

Criteria

Qualification of the Oak Ridge Y-12 facility representatives is in accordance with locally developed interim qualification standards. Long-term plans are developed for eventual qualification. There are sufficient numbers of facility representatives for oversight of conduct of operations and criticality safety. If a facility representative has not completed interim qualification, a mentor is assigned as a compensatory measure and mentoring requirements are defined and adequate. (DOE-STD-1063-93, para 4 and 5; 5480.20A, para 9, Ch. I, para 7, and Ch. 4; 5480.19, para 3.a.; Order 232.1, para 5.d, 8, and 9.h)

Approach

Record Review: Discuss the facility representative training and qualification review results with the Readiness Assessment team members evaluating the training area. Review facility representative's assignments. Review Facility Occurrence Report process.

Interviews: Interview Y-12 Site Office facility representatives to determine the degree of understanding of operations, safety envelope, past incidents and occurrences, conduct of operations principles, and stop work authority.

Shift Performance: Perform a walk through of the facility, with a qualified facility representative, to determine the facility representative's understanding of criticality safety and conduct of operations. Observe any interaction of the Oak Ridge Y-12 Site personnel during shift operations for related knowledge and required action.

OBJECTIVE (CO-31)
MG.8 A Y-12 Site Office management self-assessment has been completed and has verified the readiness of the Y-12 Site Office to oversee the resumed facility operations. **(DP-1 PREREQUISITE CONCERN)**

Criteria

The management self-assessment has verified the post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are completed. The Phase II items identified as restart issued in document, "Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant," have been dispositioned and required prestart actions completed.

Approach

Record Review: Review the results of the Y-12 Site Office management self-assessment.

Interviews: Interview the team leaders and selected Y-12 Site Office personnel who participated in the management self-assessment.

Shift Performance: None.

OPERATIONS (OP)

OBJECTIVE (CO-18)
OP.1 There are sufficient numbers of qualified personnel to support safe operations. **(CORE REQUIREMENT #13)**

Criteria

Minimum staffing requirements have been established for operations personnel, supervisors, shift technical advisors, and managers. These staffing levels are met and are consistent with the safety analysis report requirements and assumptions. (Facility Safety Basis Documentation, 5480.20A, para 9)

Sufficient numbers of qualified operations personnel, supervisors, shift technical advisors, and managers are available to carry out facility operations. Staffing levels are consistent with the technical safety requirements. (Facility Safety Basis Documentation, 5480.20A, para 9)

Approach

Record Review: Compare Operational Safety Requirements and Limiting Condition for Operations staffing requirements, including both normal and postulated emergency conditions, with qualified personnel assignments to assess the ability of the facility to field the required personnel.

Interviews: Interview operators and supervisors to ensure they understand their responsibilities and roles with regards to minimum staffing requirements during all phases of facility operations.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy and ability to satisfy administrative and safety basis requirements.

OBJECTIVE (CO-17)
OP.2 Level of knowledge of operations personnel is adequate based on reviews of examinations, examination results, selected interviews and observation of work performance. **(CORE REQUIREMENT #3)**

Criteria

The level of operator fundamental knowledge is adequate to operate safely. (5480.19 Ch. XIII; 5480.20A, Ch. I, section 7 and 8, and Ch. IV, section 5).

Operations personnel retain a practical and adequate understanding of facility systems and operations. These personnel also give adequate attention to and retain an adequate knowledge of health, safety and environmental protection issues. (5480.19, Ch. XIII; 5480.20A, Ch. I, Section 7 and 8, and Ch. IV, Section 5).

Operators demonstrate the ability to carry out normal, abnormal, and emergency procedures. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7).

Operators demonstrate a working knowledge of facility systems and components related to safety. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7)

Approach

Record Review: None. (Review of examinations to decide if they adequately test the operator's understanding of technical fundamentals, facility systems, and operating procedures will be done under the Training [TR] area)

Interviews: Interview operators and supervisors to assess their understanding of facility processes, procedures, and fundamentals of disassembly/assembly as they relate to the restart effort. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues. Verify the level of worker understanding and adequate use of applicable operating procedures, Criticality Safety Approvals and Operational Safety Reviews.

Shift Performance: Observe drills, simulations, routine evolutions and normal operations to assess technical understanding and ability of the operators and supervisors to conduct their duties and to safely operate systems and components according to approved plant procedures.

OBJECTIVE (CO-19)
OP.3 The implementation status for Department of Energy Order 5480.19, "Conduct of Operations Requirements for Department of Energy Facilities," is adequate for operations. **(CORE REQUIREMENT #12)**

Criteria

Program requirements have been developed and issued for the topics addressed in the Order. (5480.19, para 5.a.)

Operations personnel demonstrate the principles of the conduct of operations requirements during the shift performance period. Adequate performance will be demonstrated in the following areas of the Order:

- Operations organization and administration;
- Shift routines and operating practices;
- Control of on-the-job training;
- Investigation of abnormal events;
- Control of equipment and system status;
- Required reading;
- Timely orders to operators; and
- Operator aid posting.

(Note: Procedural aspects of Department of Energy Order 5480.19, Ch XVI, are covered under Criteria Review and Approach Document PR.1) (5480.19, para 5.a. and b.)

Approach

Record Review: Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles. Review documentation of required shift operating practices, directives for control of on-the-job training, procedures for investigation of abnormal events, procedures for control of equipment and reporting of system status, evidence that required reading is being read, review of logs indicating timely orders to operators, and operator aid posting. Review the written directives for placement of operator mentors in the operating areas, where full compliance with the conduct of operations requirements cannot be met prior to resumption of operations.

Interviews: Interview operators and supervisors to assess their understanding of the conduct of operations principles and their personal responsibilities in the performance of their duties for safe operations. In those areas where conduct of operations requirements cannot be met prior to resumption of operations, interview qualified operator mentors and determine their level of experience and training to act as mentors. Interview operators to check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration.

Shift Performance: While observing evolutions and drill response, determine if the facility is effectively implementing the conduct of operations requirements. Attend shift turnovers, incident critiques, and pre-job briefings. Observe operator rounds, panel walk downs, required reading use, procedure use, response to alarms, and control of system status. Observe briefings for operator mentors and preparation for shift operations.

OBJECTIVE (CO-20)
OP.4 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.
(CORE REQUIREMENT #14)

Criteria

Site programs actively promote safety through a broad range of activities possibly including, but not limited to, safety bulletins, lessons learned briefings and/or employee concerns programs. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Contractor personnel will exhibit awareness of the safety-related policies and procedures necessary for daily operations. Personnel will exhibit awareness of requirements for safe operations as set forth in Criticality Safety Approvals, Operational Safety Reviews, and appropriate operating procedures. (5480.19)

Approach

Record Review: Verify the existence and use of mechanisms (policies, procedures, etc.) which promote the identification and promulgation of safety concerns to employees and provide the employee the opportunity to report safety issues.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2 and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.)

OBJECTIVE (CO-28)
OP.5 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 adequacy of training of operators. **(CORE REQUIREMENT #10)**

Criteria

The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)

Approach

Record Review: Evaluate the status of actions under the Implementation Plan. Ensure a phased approach to normal operations and inclusion of procedures, operator qualification and equipment startup testing as required.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents 1-3, covering operations and the level of knowledge of operations support personnel.)

OBJECTIVE (CO-27)
OP.6 A baseline compliance status review of Department of Energy Orders 5000.3B and 5480.19 has been performed. Noncompliance items have been addressed. Documentation of compensatory measures is complete and are understood by contractor and Department of Energy Y-12 Site Office personnel. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board, especially Department of Energy Orders 5000.3B and 5480.19, have approved schedules for gaining compliance and if the actions described in the Request for Approvals have been adequately addressed for the facility/activity. Operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions taken to address the nonconformances. A program for periodic management assessment of the continued need and adequacy of compensatory measures is implemented. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Review the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified. Verify that documentation of compensatory measures is complete and that there is a documented program for periodic assessment of compensatory measures.

Interviews: For order requirements not fully implemented, determine if management understands areas of noncompliance and actions necessary for full implementation. In addition, determine if management is aware of any required compensatory measures associated with these noncompliances. Interview selected Department of Energy Y-12 Site Office personnel to determine their understanding of compensatory measures, when they are required, and when they can be removed.

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.

PROCEDURES (PR)

OBJECTIVE (CO-7, CO-19)

PR.1 There are adequate and correct procedures for operating systems and utility systems. **(CORE REQUIREMENTS 1, 15, and 18)**

Criteria

Criticality Safety Approvals and operating procedures applicable to disassembly/assembly activities (refer to "Disassembly/Assembly Procedures (U)", dated January 4, 1996) are technically accurate, consistent with each other, and incorporate the appropriate safety limits. A viable system for the control of the issuance and use of procedure revisions by the field and by the training organizations exists. (5480.19, Ch. XVI; 5700.6C, para 9.b.(2)(a); 4330.4B, Ch. II, Section 6, 5480.22, para 9)

Approach

For Criticality Safety Approvals contained in Appendix II of the Oak Ridge Y-12 Site's Readiness Assessment Plan-of-Action, and procedures listed in document "Disassembly/Assembly Procedures", dated January 4, 1996, review validation, walk down, and reviewer comments for recent procedure changes on safety systems. Review procedures for implementation of the safety envelope. Assess the adequacy of the review and approval process for procedures and changes to procedures. Review documented basis for test acceptance criteria. Assess the currency of procedures and verify that current configuration of safety systems is reflected in operations, maintenance and surveillance procedures.

Interviews: Interview operators and supervisors to assess their understanding of the temporary procedure change process, and how they verify the latest approved revision of a procedure. Interview support staff personnel responsible for procedure writing and revision to assess their understanding of procedure control requirements, validation process, and implementation of safety requirements. Interview operators and supervisors to assess their understanding of site procedure compliance policy. Interview personnel from the field and training organizations to ensure that they understand the system for control of the issuance and use of procedural revisions.

Shift Performance: While observing evolutions and drill response, determine if the facility is operating with current, approved procedures (with valid changes if applicable) which allow full compliance and execute the required function. Determine if the facility procedures are adequate in content, level of detail, and acceptance criteria, and if they properly implement safety requirements. If temporary procedure changes are necessary, assess the steps taken by an operator and his supervisor in the review and approval process. Verify that procedures used by the operators are properly controlled to ensure only the latest revision is used. Verify that operators are following site procedure compliance policy.

SAFETY ENVELOPE VERIFICATION (SE)

OBJECTIVE (CO-4)
SE.1 There are adequate and correct safety limits for operating systems. **(CORE REQUIREMENT #1)**

Criteria

The Operational Safety Requirements for disassembly/assembly facilities are technically accurate and consistent with the physical facility configuration. The designated equipment and systems are present as described in the Operational Safety Requirements and the Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified. (5480.22, para 9.e, 5480.19, Ch. XVI)

Approach

Record Review: Review several safety requirements and decide if the associated operating, and maintenance procedures correctly set up the limiting conditions. Verify these limits are specified in sufficient detail and rigor to allow unambiguous measurements (clear pass/fail criteria). Verify that the Operational Safety Requirements for the facilities are technically accurate and consistent with the physical facility configuration. Verify compliance with the applicable Operational Safety Requirements.

Interviews: Interview a cross section of management, operations, and maintenance personnel to ensure that personnel are knowledgeable in the significance of the safety limits and have a general knowledge of their basis.

Shift Performance: Observe the performance of surveillances and operator rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified, and that procedures adequately provide for prompt corrective action and communications upon the identification of an out of normal condition. Verify safety system configurations through walk downs. Verify that the designated equipment and systems are present as described in the Operational Safety Requirements and that the Operational Safety Requirements can be technically accomplished.

OBJECTIVE (CO-10)
SE.2 A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety-related process systems and safety-related utility systems. **(CORE REQUIREMENT #5)**

Criteria

Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures. The facility is in compliance with these requirements. (5480.22, para 9, 10, Attachment I, Background, 5480.23, para 8, Attachment I, Section 4)

Note: The scope of the Readiness Assessment does not include an assessment of the maintenance Recall-A and calibration programs and procedures themselves, but will

verify entry of applicable systems in the appropriate Recall/calibration program.

Approach

Record Review: Review completed periodic condition and operability reconfirmations and verify they have been performed according to the schedule and requirements of the Operational Safety Requirements and/or Criticality Safety Approvals. Through review of these records, verify the status of the safety systems and safety-related process system components in the maintenance Recall-A program and other inspection and calibrations programs are maintained and operational impacts of status changes are understood.

Interviews: Interview personnel associated with the program for periodic condition and operability reconfirmations. Also, interview personnel who manage the safety systems and safety-related process system components in the maintenance Recall-A program, other inspection, and calibration programs to determine how well they understand and use these programs.

Shift Performance. Walk down one or more safety-related systems to assess operability and condition. Ensure that the status is consistent with the condition specified in the building's vital safety system status board (or other method of status control). Observe the conduct of a periodic condition and operability reconfirmation.

OBJECTIVE (CO-11)
SE.3 Safety system and other instruments which monitor Technical Safety Requirements are monitored for calibration. **(CORE REQUIREMENT #5).**

Criteria

Calibration has been properly performed at the required frequency for all safety systems. The calibration status of the safety systems and safety-related process systems components meets operational requirements. (Note that the Oak Ridge Y-12 Site has Operational Safety Requirements instead of Technical Safety Requirements.) (5480.22, para 9, 10).

Approach

Record Review: Review the calibration tracking system to assess the mechanism used for scheduling, performing, reporting results and dispositioning deficiencies. Review the safety systems and safety-related process system components to determine if each safety system has an adequate calibration process. Verify that the current status supports the Oak Ridge Y-12 Site Operational Safety Requirements.

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

Shift Performance: Observe performance of the safety system calibration process to assess operability and condition, and that the status is consistent with the condition specified for safety system operation.

OBJECTIVE (CO-12)
SE.4 All safety and safety-related utility systems are currently operational and in a satisfactory condition. **(CORE REQUIREMENT #5)**

Criteria

The operational status and condition has been determined by satisfactory evaluation of the calibration and surveillance status for the safety systems. (5480.22, para 9, and 10)

Approach

Record Review: Review the safety systems tracking program to assess the mechanism used for monitoring, testing, reporting testing results and dispositioning deficiencies. Review the safety systems to decide if safety system operations are within the limits define by the Operational Safety Requirements and Criticality Safety Approvals. Review outstanding safety system and safety-related process system deficiencies identified through the corrective maintenance program, preventive maintenance program, test program, or other reporting processes to assess the condition of facility systems to support safe operations.

Interviews: Interview personnel associated with the safety system operation to assess their understanding of program requirements and responsibilities. Interview operations and management personnel to determine if the safety system's status is effective for safe operations.

Shift Performance: Walk down and observe the performance of safety systems to assess operability and condition, and if the status is consistent with the condition specified for safe operation.

OBJECTIVE (CO-27)
SE.5 A baseline compliance status review of Department of Energy Orders 5480.22 and 5480.23 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliance issues are adequately addressed by Department of Energy approved Compliance Schedule Agreement or exemptions. The Compliance Schedule Agreements include an adequate technical basis and schedule for attaining compliance. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable Compliance Schedule Agreements and Request for Approvals, exemptions, and compensatory measures. For identified Requests for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the order requirements along with any interim compensatory measures. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments.

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

TRAINING (TR)

OBJECTIVE (CO-13)

TR.1 Training and qualification programs for Disassembly/Assembly operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed. (CORE REQUIREMENT #2)

Criteria

Procedures are developed and implemented that describe the qualification process, including examination requirements for qualification and/or certification of disassembly/assembly operations, quality, and technical support personnel. Procedures describing requalification, maintenance of proficiency, granting of exceptions and extensions, alternatives to educational requirements, remediation and evaluations by facility and training management are developed and implemented. (5480.20A, Ch. I, para 7)

Goals, objectives, and plans are in place to describe the implementation of the training and qualification programs.

Training programs incorporate formal on-the-job and hands-on evaluation of skills.

The qualification program includes requirements for successful completion of written, oral, and operational evaluations for operations and maintenance personnel.

Procedures are in place to ensure that non-resident personnel will receive the proper training for unescorted access to disassembly/assembly facilities and are current in their training requirements.

Approach

Record Review: Review training and qualification records for disassembly/assembly operations, quality, and technical support personnel, including results of written, oral and operational evaluations, to ensure the training program is being formally administered and controlled.

Review training records to ensure they are maintained in an auditable manner and support management information needs by providing required data on each individual's training participation, performance, and qualification/certification.

Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the evaluation/self assessment program for involvement by facility and training management in program, instructor (classroom and on-the-job), and training materials assessment.

Review the continuing and remedial training program for adequacy.

Review the written goals and objectives related to the implementation of the training and qualification process and ensure they are documented in strategic plans, mission statement and that the goals and objectives adequately address the current issues that are important to both Department of Energy and contractor management.

Interviews: Interview training personnel to decide if they have sufficient experience and qualifications for assessing disassembly/assembly operations, quality, and technical support personnel.

Shift Performance: Attend oral or operational evaluations of operator, supervisor, or operations support personnel. Verify that personnel demonstrate knowledge of activities and requirements that were included in their training program. Evaluate an initial or continuing training classroom presentation or field training activity for technical and administrative adequacy. Evaluate the degree to which on-the-job training is used to reinforce classroom activities.

OBJECTIVE (CO-35)
TR.2: The training and qualification programs encompass the range of duties and activities required to be performed. **(CORE REQUIREMENT #2 and 9)**

Criteria

The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements. The training program is based on the results of the analysis. Learning objectives are derived from this analysis.

Requirements for continuing training have been adequately defined and programs have been developed. Continuing training includes conduct of realistic drills to maintain proficiency in responding to abnormal and accident situations, including those involving radiological hazards. (5480.20A, Ch I, para 7.d)

Training programs for disassembly/assembly, quality and technical support personnel include training on the requirements contained in the approved operating basis for the facility. (5480.20A, Ch I, Para 7)

Training programs for operations and maintenance personnel emphasize the importance of compliance with procedures and safety requirements. (5480.20A, Ch I, Para 7)

The training department uses post-training feedback, internal evaluations (self assessment), and operating experience to modify the training program when needed. This includes:

- Using feedback on training effectiveness from trainees and supervisors,
- Incorporating feedback from operating experience at the site and from other Department of Energy sites,
- Conducting formal reviews of training effectiveness,

- o Incorporating of comments from line management self-assessments and other audits.

Records demonstrate that facility representatives assigned to cover facility operations are qualified.

Approach

Record Review: Review disassembly/assembly and quality personnel lesson plans for incorporation of safety requirements, operational safety requirements, and procedure compliance. Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the continuing training program plan and drill schedule to verify adequacy in supporting safe facility operations.

Review completed facility representative Qual-Cards, oral and written exam results proving qualification in accordance with the Oak Ridge Y-12 Site qualification guidelines.

Review training programs to ensure that subject matter experts, line management, and training staff develop and maintain a valid facility-specific task list as the basis for the training program; the facility specific list of tasks selected for training is reviewed periodically and updated as necessary by changes in procedures, facility systems/equipment, job scope, advances in technology, and Department of Energy or other appropriate training guidelines are used for selecting,sequencing and verifying training program structure and content.

Review examinations (written and oral) and performance evaluations to verify that they are based on learning objectives, are reviewed by subject matter experts, are changed frequently to avoid compromise and are formally controlled.

Interviews: Interview training personnel responsible for continuing and drill scenario development and implementation. Interview personnel responsible for establishing training needs for disassembly/assembly, quality and technical support personnel.

Shift Performance: Observe operator and maintenance support personnel response to drills. Evaluate a continuing training classroom lecture simulator training session or field training activity for technical and administrative adequacy.

OBJECTIVE (CO-14)
TR.3 The technical and management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENTS 13 and 19)**

Criteria

The technical qualifications of contractor personnel involved in disassembly/assembly activities, including management who are responsible for facility, up to the Manager, Nuclear Operations are verified. Entry-level requirements are established for each operations position, as applicable, including minimum education, experience, technical, and medical requirements.

These requirements also include managers who are responsible for facility, up to the Manager Nuclear Operations. (5480.20A, Ch. I, para 9).

The applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel have the required minimum education and experience levels. (5480.20A, Attachment IV)

Approach

Record Review: Review the procedures or policies that describe the personnel selection and entry-level requirements to ensure these requirements address the minimum physical attributes a trainee must possess, and the minimum educational, technical and experience requirements necessary for the employee to meet job requirements according to the requirements of the Oak Ridge Y-12 Site Training Implementation Matrix.

Review training records for the applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel and verify the required minimum education and experience levels are met. Review training records for managers to determine if they have received adequate training in disassembly/assembly activities. Review training and qualification requirements for those mentors in place as compensatory measures.

Interviews: Interview operators and supervisors to ensure they understand the minimum staffing requirements for all phases of facility operations. Verify that the training and qualification of personnel are at a level sufficient to support resumption.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy. Verify they satisfy administrative and safety basis requirements.

OBJECTIVE (CO-16)
TR.4 Procedures in use at the facility have been reviewed for potential impacts on training and qualification. Training has been performed to the latest revision of procedures. **(CORE REQUIREMENT #18)**

Criteria

Training has been completed and documented for the latest revisions of procedures performed by disassembly/assembly, quality and technical support personnel. (5480.20A, Ch. I, para 7)

Training programs incorporate formal on-the-job training and hands-on evaluation of skills based on the latest revisions of procedures performed by disassembly/assembly and quality personnel.

Approach

Record Review: Review the process used to evaluate disassembly/assembly, quality

and technical support personnel training needs based on procedure revisions. Review lessons plans, and supporting examinations. Determine if lesson plans accurately reflect procedure changes. Review the examinations for appropriate scope and content. Review the degree to which on-the-job training and hands-on evaluations for operations and maintenance personnel are used to reinforce classroom activities.

Interviews: Interview training personnel to determine their involvement with procedure changes affecting lesson plans. Interview supervisors to determine how they incorporate procedure revisions into work planning.

Shift Performance: Observe disassembly/assembly, quality and technical support personnel in the performance of on-the-job training. Observe classroom training or a field training activity. During observation of operations using procedures, verify proper conduct and understanding of the procedures by the operators.

OBJECTIVE (CO-27)
TR.5 A baseline compliance status review of Department of Energy Order 5480.20A has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance.

Compensatory measures specified in the Compliance Schedule Agreements are adequately understood and implemented by operations managers.

Approach

Record Review: Review the order compliance package for Department of Energy Order 5480.20A, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If this Order is not fully implemented, interview management personnel to ensure their awareness of the noncompliance(s) along with actions necessary to fully implement the order requirements, and all interim compensatory measures. Ensure operations managers have reviewed the compensatory measures and corrective actions taken to address the non-conformance for site level programmatic and facility-level compliance and adherence-based assessments.

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

OBJECTIVE (CO-22)
TR.6 A routine operations drill program, including program records, has been established and implemented **(CORE REQUIREMENT #9)**

Criteria

An effective routine (non-emergency) operations drill program has been established to assure operator readiness and knowledge of appropriate responses to indicators. Drills and exercises are conducted and an adequate response capability is demonstrated to exist. (5480.19, Ch. VI, 5480.20A, Ch. I, Section 7)

Approach

Record Review: Review the drill records which describe the routine drills that have been conducted in the past year. Determine if the drill scenarios were adequate and if the requisite number of drills have been conducted to fully test personnel and, procedures and equipment in a broad range of facility operations. Determine if lessons learned from drills are factored into subsequent drills and training.

Interviews: Interview personnel responsible for the development and conduct of drills to evaluate their understanding of the purpose of the drill program, and their ability to execute it.

Shift Performance: Attend and assess drill preparations, pre-briefs, conduct and critiques. Determine if operational drills test operators and operations support personnel with realistic and challenging scenarios. Evaluate whether an adequate response capability exists.

APPENDIX 3

DETERMINING PRE-START/POST START FINDINGS

APPENDIX 3

DETERMINING PRE-START/POST START FINDINGS

This checklist will be used by the Operational Readiness Review team to evaluate if an issue 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 Lockheed-Martin Energy Systems, Inc. or Department of Energy - Oak Ridge Operations Office 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 this issue involve a potential adverse impact on worker safety?

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 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 Technical Safety Requirements/Operational Safety Requirements, 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 of worker safety or environmental protection regulatory requirements?

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

APPENDIX 4
FORMS 1 AND 2

RA ASSESSMENT FORM 1
Criticality Safety

FUNCTIONAL AREA: CS	OBJECTIVE 1, REV. 0 DATE: March 6, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined, understood and effectively implemented. This includes confirmation that nuclear criticality management and staff clearly understand and accept their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of personnel assigned to augment/strengthen the criticality safety organization have been defined. The conditions under which temporary (non-permanent and/or borrowed personnel) can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the disassembly/assembly operations records to ensure that the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization are adequately defined for disassembly/assembly functions. Focus should be on disassembly/assembly operations and change since the Receipt, Storage, and Shipment Readiness Assessment. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of temporary (non-permanent and/or borrowed personnel) assigned to the nuclear criticality safety organization. The conditions under which these personnel can be removed is documented. (5480.19 Ch. I and III)

Interviews: Check that management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the Criticality Safety Organization specific to disassembly/assembly, ensure communications between Criticality Safety Organization and line management are clear. Verify that individuals understand their assignments, responsibilities, and reporting relationships and conditions under which temporary personnel may be released.

RA ASSESSMENT FORM 1
Criticality Safety

Shift Performance: Observe how management communicates and has implemented control of safety.

Records Reviewed:

- Organization chart, "Nuclear Criticality Safety Department," dated 2/20/96
- Roster, Nuclear Criticality Safety Department, dated 5/16/95
- "Roles and Responsibilities in the Nuclear Criticality Safety Department," Y/DD-680, 5/9/95
- "List of Qualified Personnel," Y/DD-587, Rev. 13, 2/9/96
- "Qualification Program Nuclear Criticality Safety Department", Y/DD-694, Rev.1, 8/29/95
- "Training Implementation Nuclear Criticality Safety Department", Y/DD-696, Rev.1, 8/29/95
- Resumes and training records for key member of the Nuclear Criticality Safety Department supporting D/A activities
- Letters, K.J. Carroll to distribution, appointing criticality safety engineers to various committees and positions, 4/95 to 8/95
- K.J. Carroll, "Oak Ridge Y-12 Plant Nuclear Criticality Safety Improvement Action Plan," Y/DD-699, 8/25/95
- "Nuclear Criticality Safety Program," Procedure No. Y70-150, 8/25/95 (effective 9/24/95) and Change Directive Y70-150-1 dated 9/8/95
- "Criticality Accident Alarm System," Procedure Y70-151, 8/21/92 and Change Directive dated 7/28/94
- "Mock-Ups", Procedure Y70-153 dated 12/20/95
- "Nuclear Criticality Safety Standards for Identification and Limits Posting," Procedure 70-159, 12/15/89 and Change Directives 70-159-1 dated 2/16/95 and Change Directive 70-159-2 dated 11/2/95
- "Criticality Safety Approval System," Procedure No. Y70-160, 8/23/95 (effective 9/24/95) and Change Directive Y70-160-1 dated 9/8/95
- "Nuclear Criticality Safety Training Program," Procedure No. Y70-162, 7/6/94 and Change Directives Y70-162-1 and 2 dated 10/28/94 and 1/5/94 (actually 1/5/95), respectively
- "General Nuclear Criticality Safety Requirements", Procedure Y70-01-150, 3/15/95 and Change Directives Y70-01-150-01 to Y70-01-150-06, 5/18/95 to 1/31/96.
- "Document Control", Procedure Y10-189
- "Nuclear Criticality Safety Analysis, Approval, and Control System," Procedure No. Y50-66-CS-325, 2/3/95 and Change Directives Y50-66-CS-325-1, 2, and 3 dated 3/30/95, 4/5/95, and 4/11/95, respectively.
- "Nuclear Criticality Safety Incidents," Procedure No. Y50-66-CS-327, 4/24/94
- "Quality Assurance for Nuclear Criticality Safety Computer Calculations," Y50-66-CS-328, 8/10/93
- "Nuclear Criticality Safety Department External Monitoring Program", Procedure No. Y70-66-CS-330, dated 11/22/95
- G.R. Handley et al, "The Y-12 Plant Nuclear Criticality Safety Program Description," Y/DD-500, 2/24/93

- P.R. Wasilko to R.K. Roosa, "Management Self Assessment Report for Disassembly and Assembly," 1/5/96
- "Y-12 Site Office Restart Team Assessment of the Disassembly and Assembly Activities at the Y-12 Plant", 2/23/96
- T.R. Butz to R.J. Spence, "Corrective Action Plan for Task 2 Assessment: Defense Nuclear Facilities Safety Board (DNFSB) 94-4, 1/30/96
- T.R. Butz to R.J. Spence, "Corrective Action Plan for Task 3.2 Assessment: Defense Nuclear Facilities Safety Board (DNFSB) 94-4, 1/30/96
- "Corrective Action Plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-4 Task 4 Assessment of Conduct of Operations at Y-12", Y/AD-623, 1/30/96
- C.C. Edwards, "Nuclear Criticality Safety Management Plan for 1995 Resumption," Y/DD-669
- "Management Plan for Assessing Y-12 Plant Criticality Accident Alarm System Coverage," Y/DD-673, Rev.1, 1/11/96
- "Charter for the Nuclear Criticality Safety (NCS) Independent Technical Review Board (ITRB)," Y/DD-675, 6/15/95
- K.J. Carroll, "Interim Plan to Correct Nonconformances Found During the 1994 Walkdowns of Criticality Safety Approvals," Y/DD-677, Rev. 1, 4/5/95
- K.J. Carroll, "Management Plan for Criticality Safety Approvals (CSAs) for Continued Operations," Y/DD-683, 5/5/95
- "Nuclear Criticality Safety Incident Reports" for 4/94 - 3/95
- Superintendent, Nuclear Criticality Safety Department to distribution,
  - "This Standing Order delineates the requirements for issuance of Standing Orders," Standing Order SO-9110-95-01, 7/10/95
  - "To establish the requirements and standards in conducting the annual Operational Reviews as required by ANSI/ANS 8.1," Standing Order SO-9110-95-02, 7/11/95
  - "This Standing Order discusses the need for Group Leaders to ensure that the personnel they assign to work items understand their responsibilities and are suited to the work assigned," Standing Order SO-9110-95-04, 7/12/95
  - "This Standing Order defines the requirements and method for documenting all NCSD technical direction or advice to Operations, resulting from Conferences or Conversations," Standing Order SO-9110-95-05, 9/15/95
  - "NCSD Monthly On-Call List", Standing Order SO-9110-95-08, 9/26/95
  - "NCSD Independent Validation of Draft CSAs", Standing Order SO-9110-95-09, 10/21/95
  - "NCSD Procedure Development", Standing Order SP-9110-96-15, 1/22/96
- "Writer's Guide for Y-12 Plant Technical Information", Y10-103, revision 1/18/96
- Bidinger, G.H. et al, "An Evaluation of the Nuclear Criticality Safety Program at the Y-12 Site," 1995
- NCS Deficiency Reports for D/A activities, 10/94-2/96
- "Nuclear Criticality Safety Department Operational Review of Procedure Performance" Reports for D/A activities, 2/95-1/96
- "Operational Review of Process Conditions" Reports for D/A activities, 7/95-9/95

- Y-12 Criticality Safety Committee, "1994 Criticality Safety Review of Enriched Uranium Operations, Disassembly and Storage Operations, and the Nuclear Criticality Safety Department", 4/21/95
- "Central Safety Meeting Minutes," 8/24/95
- "Criticality Incident Review Meeting Minutes," for 6/7/95, 7/10/95, 8/2/95, 9/6/95, 10/4/95, 11/8/95, 12/6/95, and 1/3/96 meetings
- Criticality Safety Approvals and supporting evidence files, including "CSA Verification Checklists", "Facility/CSA Field Validation Checklists", and "Operational Review of Process Conditions", for D/A operations.
- "Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area", Y/TS-1314, Revision 1, 9/18/95.
- "Mentor Program Description for Y-12 Resumption", Y/AD-627, 3/27/95
- "Trip Report on Criticality Safety Bench Marking Efforts", Draft Rev. 1, 2/96
- "Fissile Material Container Abnormal Condition Response", Drill Guide No. 2-0001, Rev. B, 1/1/7/96.
- "Injured and Potentially Contaminated Worker", Drill Guide No. 2-0015, Rev. 0, 3/1/96

Interviews Conducted:

- Superintendent, Nuclear Criticality Safety Department
- Deputy Superintendent, Nuclear Criticality Safety Department
- Scientific Advisor, Nuclear Criticality Safety Department
- Resumption Coordinator, Nuclear Criticality Safety Department
- Group Leader, Metals and Nuclear Materials Control and Accountability (NMC&A) Group, Nuclear Criticality Safety Department
- Nuclear Criticality Safety Engineers (4), Metals and NMC&A Group, Nuclear Criticality Safety Department
- DOE Facility Representative, D/A Building
- Facility Manager, Bldg. 9204-2E
- Operations Manager, Bldg. 9204-2E
- DSO CSA coordinator
- Bldg. 9204-2E CSA coordinator
- DSO management and shift personnel within D/A facility (during CSA walkdowns and evolutions)
- Quality Organization Area Supervisor
- Quality Organization Area CSA Coordinator
- Quality Organization Radiography Area Supervisor
- Quality Organization shift personnel within D/A facility (during CSA walkdowns and evolutions)

Shift Performance Evolution:

- Walkdown of the major Disassembly and Storage Organization (DSO) CSAs in Building 9204-2E

- o Walkdown of the major Quality Organization (QO) CSAs in Building 9204-2E
- o Mockup disassembly
- o Radiography operation in quality evaluation unit
- o Assembly & verification/weld rings degreasing, electropolishing, electron beam welder, part marking, and inspection
- o DSO drill involving response to a fissile material container found in an abnormal condition
- o DSO drill involving injured and contaminated worker

Discussion of Results:

Record Review: The Health and Safety Procedure Y-70-150 clearly establishes the nuclear criticality safety program at Y-12 that supports D/A activities, defines the responsibilities of each of the operations, management, and support organizations, and establishes the Nuclear Criticality Safety Department (NCSD). Other Health and Safety Procedures (Y-70-150 to Y-70-162) clearly establish the activities and operating procedures of the NCSD. The functional layout, staffing levels, and reporting relationships of the NCSD are clearly presented in an organization chart. Roles and responsibilities within the department are defined in Y/DD-680. Collectively, these documents clearly lay out the functions, assignments, responsibilities, and reporting relationships for the NCSD and identify the relationships and responsibilities of the NCSD and the operations organization in criticality safety.

At the time of the Receipt, Storage, and Shipment (RSS) Readiness Assessment (RA) (August - Sept., 1995), a number of significant changes in the NCSD organization, procedures, and processes were being proposed and implemented. These included a new version of the basic NCSD procedure (Y70-150), expansion and improvement of the CSA review process with a significant revision to procedure (Y70-160), hiring of additional staff, restructuring of the NCSD, increased emphasis on the quality of CSAs and procedures, increased emphasis on the clarity of CSAs, more formal periodic review of the operating facilities, and incorporation of criticality safety steps into procedures. It was expected that collectively, those changes would reduce the likelihood of problems with CSAs of the type observed prior to and during the RSS RA and lead to an excellent program.

Approximately six months later, review of the documentation indicates that these changes have now been implemented. New versions of the nuclear criticality safety program procedure (Y70-150) and criticality safety approval system (Y70-160) have now been implemented and represent substantial improvements. In spite of budgetary conditions, additional qualified criticality safety specialists have been added to the department, with adequate attention continuing to be provided to RSS and D/A activities. The current organizational structure offers clear lines of responsibility and reporting relationships which were observed to be effective during this review.

RA ASSESSMENT FORM 1
Criticality Safety

Review of CSAs, supporting evidence files, and selected procedures covering D/A activities indicates that the increased efforts in preparing clear and unambiguous CSAs that were being implemented at the time of the RSS RA have been effective. As a rule, the D/A CSAs are a significant improvement.

A number of areas were reviewed to determine the overall effectiveness of the criticality safety program as applied to D/A. This included the historical record of criticality safety deficiencies associated with D/A operations and the results and corrective action plans of other assessments, including the DOE assessments in response to DNFSB Recommendation 94-4, the LMES RA, and the YSORT assessment. Collectively, these documents indicate that while problems are still being found with CSAs and their implementation in D/A activities, the problems are at a negligible criticality risk level and are promptly corrected.

Review of recent deficiency reports covering D/A activities indicates the number of deficiencies is trending down, with fewer and less severe deficiencies being found. The overall number and rate of CSA deficiencies with D/A activities has declined substantially. In general,the problems that have recently been found with the D/A CSAs are due to subtleties in the wording and interpretation, not fundamental problems.

The process for the NCSD performing operational reviews as required by the ANSI standards has been improved and incorporated into the new procedure Y70-66-CS-330. This procedure requires NCSD personnel, in conjunction with operations, to perform operational review, including field verification, of process conditions and procedural compliance for conformance with criticality safety assumptions, requirements, and limitations.

Applicable CSA requirements are now beginning to be incorporated into facility operating procedures, with the D/A operating procedures effectively serving as a test bed for this process. For the D/A operating procedures reviewed, the applicable CSA requirements and clarifications had been incorporated, with the CSA from which these requirements came listed as "source documents". In cases where the CSA was still needed to perform the activities governed by the procedure, such as the extensive container requirements CSAs, they were listed as "primary references". Until the procedure governing this process is completed (expected to be by 5/31/96), this process is governed by Standing Order SO-9110-96-15.

These results indicate that the changes in the NCSD that had just been implemented during the RSS timeframe have matured.

Review of the current NSCD organization chart (dated 2/20/96) indicates that several temporary subcontractor personnel are being utilized for staff support. Three subcontractor personnel are assigned to the Metals and NMC&A Group, which supports D/A activities. Document Y/DD-587, Rev. 13, lists which subcontractor personnel are qualified for specific NCSD tasks, their specific task and duty assignments, and which NCSD computer codes they are qualified to use. Overall, the documentation indicating their functions, assignments, responsibilities,

reporting relationships, specific qualifications, and experience of personnel for these temporary, subcontractor personnel assigned to augment/strengthen the criticality safety organization have been defined to a level approximately equivalent to permanent NCSD personnel. Each of these temporary, subcontractor personnel serves at the pleasure of the NCSD Superintendent and can be removed at will. If they were removed, adequate staff would remain to serve the essential NCSD functions, including restart of D/A activities. However, other planned restart activities could be impacted.

One person is also indicated as serving as mentor to the Solution, Waste, Plant Laboratory and Development Group Leader. He was formally a member of the Y-12 mentor program but is currently being paid for and used as needed by the NCSD Superintendent. He is not being used as a compensatory measure.

Interviews: Discussions with management and technical staff in the Nuclear Criticality Safety Department (NCSD) supporting D/A activities indicate that they are knowledgeable of their roles, responsibilities, and reporting relationships. The staff is technically excellent and has an excellent understanding of the facilities for which they have responsibility.

Interviews during the RSS RA indicated that staffing levels within the department had been a problem, but activities were under way at that time that were expected to alleviate the concern. In spite of budgetary concerns and constraints, these efforts were successful. With three additional staff members being hired, staffing will be adequate for the current work load within the department.

During the RSS RA, interviews indicated that work demands on key senior staff have been very high. It appears that while key staff are still contributing significant overtime, the addition of staff to the department and the refinement of the processes for CSA and procedure development and review have allowed work levels to return to moderate.

Interviews indicated that much progress has been made in development and refinement of the CSA process since the RSS RA. The changes being made at that time, approximately six months ago, have now been implemented and are functioning adequately. The process has now matured.

The interviews also indicated that most of the changes had been incremental in nature. With the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system, not fundamental changes in the way of doing business. Several external reviews of the NCS Program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Since the RSS RA, the NCSD Superintendent, in conjunction with Y-12 operating departments, support organizations, facility safety, and the DOE site office, initiated visits to three other DOE sites to benchmark areas for improvement in

the Y-12 plant criticality safety program. A small, diverse group visited these sites with the intent of identifying the best of practices at the sites that could be adapted to the Y-12 plant. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicates that many good ideas were seen at other plants. The next steps are to gain concurrence on which ideas to adopt, develop a long-term NCS improvement plan, and begin implementation. Discussions with the NCSD Superintendent indicated that the key factor in the timing of implementing the changes was likely to be budget considerations.

This process to make the long-term improvements to the Y-12 criticality safety program suggested by many outside reviewers appears to be progressing and should be continued. (CS1-1)

Shift Performance: NCSD personnel were observed performing operational reviews of process conditions in conformance with the new procedure Y70-66-330. This new procedure consolidates several reviews that had been performed in the past. The major DSO and QO CSAs for Building 9204-2E were walked down with a criticality safety engineer and a representative from operations.

Observation of several evolutions and activities associated with the walkdown of selected CSAs for the D/A activities in Building 9204-2E indicated that both the operations and NCSD staff are keenly aware of the criticality safety operating limits and respond quickly to potential infractions. Walkdown of the D/A CSAs with three criticality safety engineers supporting D/A activities indicated that they were thoroughly knowledgeable of the facilities and were well aware of the criticality safety issues. Operating personnel interviewed during these walkdowns and evolutions were also well aware of the criticality safety issues and responded correctly when potential incidents were identified. Review of the posted criticality safety operating limits in the operating areas indicated 100% agreement with the CSAs.

During one walkdown, bags of combustible radioactive waste were observed being stored in both fissile and non-fissile material arrays. Operations staff were questioned on how they knew the waste outside the fissile arrays did not contain fissile material. The bags were not clearly labeled with the source of the waste and it could not be quickly determined that they did not contain fissile material. It took over an hour before operations staff could clearly convince the criticality safety staff that based on the historical data and operations in the building, the bags would not contain significant quantities of fissile material. Both operations and NCSD staff performed adequately and there was not a criticality safety deficiency. However, such problems in quickly identifying the source of potentially fissile material could lead to future operational problems since future operations in the building may generate waste contaminated with highly enriched and depleted uranium.

Collectively, the walkdowns of the major D/A CSAs and observations of several evolutions and drills indicate that:

RA ASSESSMENT FORM 1
Criticality Safety

- The use of criticality safety postings has improved since the RSS RA, with clearer, less ambiguous limits and complete correspondence to the CSAs.
- The CSAs and corresponding postings were simplified with the wording on many postings being the same.
- No problems with CSA compliance were observed by any of the team members. While several questions were raised during the walkdowns, none of these issues resulted in a CSA deficiency.
- Both NCSD and operations personnel are well aware of the proper steps to follow when a potential CSA infraction is raised.
- The insertion of CSA requirements into D/A operating procedures worked well.

Overall, the criticality safety requirements developed by the NCSD have been effectively implemented in the proposed D/A operations.

Conclusion: The criticality safety program supporting D/A activities has been substantially refined since the RSS RA and is continuing to improve. The efforts underway to identify and implement the best criticality safety practices from other sites will improve the overall efficiency of the Y-12 criticality safety program and should be strongly supported. The criteria for this objective have been met.

Issue(s):

o Long-Term Improvements to Y-12 Criticality Safety Program Should Continue. (CSI-1)

Reviewer: Doug Outlaw /D. Ken Rhyne, Jr.	Approved: John D. Rothrock John D. Rothrock

RA DEFICIENCY FORM 2
Criticality Safety

Functional Area: CS	Objective No.: 1	Finding Observ. X	Pre-Start Post-Start	Issue No.: 1 Rev. No.: 0 Date: 3/2/96

ISSUE: Long-Term Improvements to Y-12 Criticality Safety Program Should Continue.

REQUIREMENTS: Management shall accept overall responsibility for safety of operations. Continuing interest in safety should be evident. (S/RID Statement Number: 7.a.(1) [ANSI 8.19/4.1])

Management shall provide personnel familiar with the physics of nuclear criticality and with associated safety practices to furnish technical guidance appropriate to the scope of operations. (S/RID Statement Number: 7.a.(1) [ANSI 8.19/4.4])

REFERENCE(S): LMES Standards/Requirements Identification Document, Functional Area: Criticality Safety, incorporates ANSI 8.19 requirements.

DISCUSSION: Since the 1994 criticality safety infraction at the Y-12 plant, a large number of improvements have been made to the criticality safety program. Most of the changes, however, have been incremental in nature. With the exception of the transition to placing the CSA requirements into stand-alone procedures, most of the changes have been refinements and improvements to the old system, not fundamental changes in the way of doing business. Several external reviews of the NCS Program have indicated that while the existing process did not lead to significant safety concerns, other ways of implementing criticality safety might be more efficient.

Since the RSS RA, the NCSD Superintendent, in conjunction with Y-12 operating departments, support organizations, facility safety, and the DOE site office, initiated visits to three other DOE sites to benchmark areas for improvement in the Y-12 plant criticality safety program. A small, diverse group visited these sites with the intent of identifying the best of practices at the sites that could be adapted to the Y-12 plant. Discussions with NCSD personnel and review of a draft report being prepared by NCSD in conjunction with operations and the DOE site office indicated that many good ideas were seen at other plants. The next steps are to gain concurrence on which ideas to adopt, develop a long-term NCS improvement plan, and begin implementation. Discussions with the NCSD Superintendent indicated that the key factor in the timing of implementing the changes was likely to be budget considerations.

CONCLUSION: This process to make the long-term improvements to the Y-12 criticality safety program suggested by many outside reviewers is progressing and should be continued.

Reviewer: Doug Outlaw /D. Ken Rhyne, Jr.	Approved: John D. Rothrock John D. Rothrock

RA ASSESSMENT FORM 1
Criticality Safety

FUNCTIONAL AREA: CS	OBJECTIVE 2, REV. 0 DATE: March 6, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Order 5480.24 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria
All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Request for Approval have been adequately addressed for the facility/activity. (Y/AD-623, Plans of Continuing and Resuming Operations, dated October 1994, states this requirement)

Compensatory measures specified in the Criticality Safety Approval are adequately understood and implemented by operations managers. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach
Record Review: Review the Order compliance package for DOE Order 5480.24, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Requests for Approval, verify that schedule commitments have been met and compensatory measures identified.

Interviews: Interview management personnel to ensure that they are aware of the noncompliance(s) and actions necessary to fully carry out the Order requirements, and any interim compensatory measures.

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

Records Reviewed:

- R.G. Vornehm, "Y-12 Implementation Plan for DOE 5480.24, "Nuclear Criticality Safety," Y/DD-621, Rev. 1, 6/1/94
- Standards/Requirements Identification Documents, "Assessment Summary Report, Nuclear Criticality Safety, DOE Order 5480.24," Programmatic Assessment and Adherence Based Assessment, 2/15/96
- Request for Approval, topic "Items to Include in the Safety Analysis Report," Request No. MMES/Y-12-DOE-5480.24-CSA-46B, 6/15/95
- Request for Approval, topic "Storage of Fissile Materials," Request No. MMES/Y-12-DOE-5480.24-CSA-54C, 9/26/95

- Request for Approval, topic "Monitoring for Accumulations of Fissile Materials," Request No. MMES/Y-12-DOE-5480.24-CSA-126A, 5/10/95

Interviews Conducted:

- Superintendent, Nuclear Criticality Safety Department
- Deputy Superintendent, Nuclear Criticality Safety Department
- Resumption Coordinator, Nuclear Criticality Safety Department
- Group Leader, Metals and NMC&A Section, Nuclear Criticality Safety Department
- Nuclear Criticality Safety Engineers (3), Metals and NMC&A Group, Nuclear Criticality Safety Department
- LMES Order Compliance Coordinator

Shift Performance Evolution:

- None

Discussion of Results:

Record Review: Review of the order compliance package for DOE Order 5480.24 indicated that three Requests for Approval (RFAs) of Compliance Schedule Agreements have been submitted by the contractor to DOE and are approved. Of these three, only two are indicated to apply to the Disassembly and Assembly facility and involve long term corrective actions. These are the requirements that (1) "storage of fissile materials shall be such as to obviate concern with accidental nuclear criticality in the event of fire, flood, earthquake or other natural calamities" and (2) that detailed criticality safety evaluations be included in safety analysis reports. The contractor indicated that compensatory measures were not required for either of these two Order requirements. These two RFAs are not considered as restart requirements for D/A.

It should be noted that DOE 5480.24 has been superseded by DOE 420.1. However, DOE O 420.1 has not yet been added to the LMES/DOE-ORO contract, thus this review continued to concentrate on the compliance status with 5480.24 requirements, which are incorporated into the LMES contract as Standards/Requirements Identification Documents.

Interviews: Discussions of the order compliance issues with senior management in the Nuclear Criticality Safety Department indicated that they were well aware of the DOE Order 5480.24 noncompliance issues and could adequately explain why they believed that compensatory measures were not required. They stated that for the D/A facility, the increased risks are small because a natural phenomena-induced criticality is considered incredible. Additionally, the process analyses supporting the Criticality Safety Approvals were identified as a guarantee that the double contingency principal is fully implemented for the D/A facility, and that the increased risks of postponing operations until the completion of new, approved SARs is small.

RA ASSESSMENT FORM 1
Criticality Safety

Shift Performance: There are no compensatory measures required for implementation of DOE Order 5480.24 requirements. No shift performance observation was required.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: Doug Outlaw /D. Ken Rhyne, Jr.	Approved: John D. Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 1, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENT #19)**

Criteria

The Oak Ridge Y-12 Site contractor operations line management, up to and including the Manager of Nuclear Operations, have sufficient applicable experience and/or training to adequately understand facility operations and safety systems under their cognizance. (5480.20A, para 9, Ch. I, para 7, and Ch. 4, 5480.19, para 3.a.)

Entry-level requirements are established for each operations management position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, para 9, Ch. 1 and 4)

Approach

Discuss training and qualification review results with the Readiness Assessment team members evaluating the training area.

Interviews: Interview members of the contractor operations and safety organizations and mentors in place as compensatory measures and assess understanding of disassembly/assembly operations and the safety envelope. Verify whether management effectively promotes awareness of requirements for safe operation as reflected in Criticality Safety Approvals, Operational Safety Requirements and appropriate procedures by interviewing operations personnel.

Shift Performance: Observe management personnel interactions with operations personnel during evolutions and drills to assess qualification.

Records Reviewed:

- Training and Qualification records of selected managers were reviewed as part of objective TR3 of this Readiness Review.
- Y/AD-627, Rev. 1, Mentor Program Description for Y-12 Resumption

Interviews Conducted:

- Occupational Safety Managers (2)
- Occupational Health Manager
- Radiological Controls Manager
- Engineering Support Manager

RA ASSESSMENT FORM 1
Management

- o Disassembly and Assembly Operations Manager
- o Assigned Mentors (2)
- o Nuclear Maintenance Manager
- o Management Mentor for Nuclear Operations (1) and Balance of Plant (1)

Shift Performance Evolution:

- o Morning Briefing and Plan of the Day Meeting
- o Pre-operation Briefing, C5 Disassembly
- o C5 Disassembly Operation
- o Post Operation Briefing, C5 Disassembly
- o Drill involving contamination control and injured person
- o Pre and post drill briefing

Discussion of Results:

Records Review: Records reviewed indicated that the Managers and Mentors assigned to the Disassembly and Assembly Operation are trained and qualified to perform their assigned tasks. They had been assigned specific training requirements and the records indicated that their training was up to date. The Manager training requirements met the intent of DOE Order 5480.20A. The Mentor training requirements met the intent of the Mentor Program Description.

Interviews: Those interviewed were familiar with the safety requirements involved with the Criticality Safety Approvals (CSAs), the Operational Safety Requirements (OSRs) and the operating procedures in use at the facility. The assigned Mentors were very knowledgeable and familiar with their responsibilities and roles as they relate to compensatory measures. One of the Mentors assigned to the facility left during the Readiness Assessment for other employment. A new Mentor has been assigned, but is not in the facility and has not been evaluated as part of this assessment. Interviews of operations personnel were conducted as part of this Readiness Assessment (OP2) and these interviews indicated that Managers have stressed awareness of the CSAs, OSRs and the proper use of operating procedures in the facility.

Shift Performance: Observation of the listed activities indicated that the Managers are knowledgeable and understand their role in assuring safety of operations. The Mentors were ever present and effective. The Operators and the Managers demonstrated clear appreciation for the assigned Mentors.

Conclusion: The criteria for this objective have been met.

Issue(s):

- o None

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 2, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

The functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined, understood and effectively implemented. This includes confirmation that line management clearly understands and accepts their responsibilities for control of safety. (5480.19, para 4)

The functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures have been defined. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Approach

Record Review: Review the records to ensure that the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations), have been adequately defined. Review the written definitions of the functions, assignments, responsibilities, reporting relationships, specific qualifications, and required experience of mentors assigned as compensatory measures. The conditions under which mentors can be removed have been documented. (5480.19, Ch. I and III)

Interviews: Interview selected managers to verify that line management understands and has implemented the functions, assignments, responsibilities, and reporting relationships for the operating, management (up to the Manager, Nuclear Operations). Verify that individuals understand the conditions under which mentors can be removed.

Shift Performance: Observe how line management communicates and has implemented control of safety.

Records Reviewed:

- Y-12 Nuclear Operations Conduct of Operations Manual
- Disassembly and Storage Organization Charts
- Entry level requirements for DSO Managers
- Entry level requirements for Mentors
- Approved Roles and Responsibilities for selected DSO Managers (3)

RA ASSESSMENT FORM 1
Management

- o Summary of Manager Professional experience (3)
- o Y/AD-627, Rev. 1, Mentor Program Description for Y-12 Resumption
- o Mentor experience and qualification summary (1)
- o Conduct of Operations Performance Indicator Report, dated February 21, 1996
- o Selected Mentor Weekly Reports
- o Selected Mentor Conduct of Operations assessment reports

Interviews Conducted:

- o Occupational Safety Managers (2)
- o Occupational Health Manager
- o Radiological Controls Manager
- o Engineering Support Manager
- o Disassembly and Assembly Operations Manager
- o Assigned Mentors (2)
- o Management Mentor for Nuclear Operations
- o Management Mentor for Balance of Plant
- o Nuclear Maintenance Manager

Shift Performance Evolution:

- o Morning Briefing and Plan of the Day Meeting
- o Pre-operation Briefing, C5 Disassembly
- o C5 Disassembly Operation
- o Post Operation Briefing, C5 Disassembly
- o Drill involving contamination control and injured person
- o Pre and post drill briefing

Discussion of Results:

Record Review: Records provided adequate descriptions of the Managers and the Mentors roles and responsibilities. The organizational structure is well defined. Reporting relationships are clearly defined. During the review, there were adequate numbers of matrix support personnel assigned to the facility to support routine operations. Additional support services are available, but at an additional cost above the currently budgeted overhead.

The conditions under which Mentors may be removed from the role as a compensatory measure are appropriate and clearly defined in the Mentor Program Document.

The successful completion of Mentor Conduct of Operations support functions is defined as reaching a performance level of eighty percent in the Mentor evaluated Performance Measures. The facility is currently evaluated to be at sixty-one percent with a goal of eighty-one percent. Removal of Mentors from any position other than that of a compensatory measure is beyond the scope of this review.

Two Mentors are assigned to the facility. One of these Mentors left the facility for other employment during this review. A replacement has been identified, but his performance was not evaluated as part of this assessment. The Mentor is in the planning critical path for most operations in the facility. This will cause program difficulties if Mentor flexibility is not provided or additional Mentor coverage is not readily available.

Interviews: Those interviewed had a clear understanding of their responsibilities and the organizational reporting relationships. They were comfortable with their assigned functions and the support staffing within the organization.

The specific requirements for removal of Mentors as compensatory measures are new and not thoroughly understood by all of the managers. The Mentors and the Operations Manager have a clear understanding of the requirements and the need to carefully manage this program in order to be able to efficiently operate the facility.

Shift Performance: The Managers were observed during various evolutions and drills. Their performance was measured and methodical. Few activities occurred on time and many hours were wasted during the performance of the review. During the review, many of the managers were unsure of their authority and confused about managing safety versus managing daily routine. Planning activities that require support from organizations not involved with the restart effort received guarded support as observed during the review. Management decisions waiver routinely with questions from local DOE representatives. Currently, confidence is weak and upper level management support, counsel and team building could use improvement. (MG2-1) TR1-2 discusses similar types of observations.

Mentor performance and support was effective.

Conclusion: The criteria for this objective have been met.

Issue(s):

- Upper level management support, counsel and team building could use improvement. (MG2-1)

Reviewer: Jim Grise	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 2	Finding Observ. X	Pre-Start Post-Start	Issue No.: MG2-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Upper level management support, counsel and team building could use improvement.

REQUIREMENT: None

REFERENCE(S): DOE Order 5480.19, Conduct of Operations and DOE Order 5700.6C, Quality Assurance.

DISCUSSION: The referenced orders discuss management practices to improve quality, efficiency and operator performance. Quality programs discuss employee empowerment and continuous process improvement. The Managers were observed during various evolutions and drills. Their performance was measured and methodical. Few activities occurred on time and many hours were wasted during the performance of the review. During the review, many of the Managers were unsure of their authority and confused about managing safety versus managing daily routine. Planning activities that require support from organizations not involved with the restart effort received guarded support as observed during the review. Management decisions waiver routinely with questions from local DOE representatives. Interviews disclosed problems with decision making and senior management support of decisions.

CONCLUSION: Currently, confidence is weak and there are indications that upper level management support, counsel and team building could use improvement.

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 3, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: 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. **(CORE REQUIREMENT #6)**

Criteria

The outstanding open findings and corrective actions have been assessed by the contractor to determine if their lack of closure may preclude safe operations and if appropriate actions have been taken for those determined to have impact. (5480.19, Ch. VI and VIII; 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), and Attachment I, para II.A.3.)

Approach

Record Review: Review the Energy Systems Action Management System and any other systems used to identify, evaluate, and resolve deficiencies, selecting representative issues and assessing the adequacy of the program. Assess the backlog and prioritization system for reducing it. This will include the Lockheed Martin Energy Systems, Inc. Operations Manager's reevaluation of internal and external assessment performed on their operations since October 1993. Determine if the corrective actions have been appropriate as discussed in Y/AD-623 and if Lockheed Martin Energy Systems, Inc. operations' response to outside reviewer comments and findings are adequate.

Interviews: Interview operational and management personnel to establish their understanding of the program.

Shift Performance: Evaluate the line management's understanding of the control of safety during a simulated off-normal safety condition.

Records Reviewed:

- Energy Systems Action Management System (ESAMS)
- DOE Order 5480.19, Ch. VI and VIII
- DOE Order 5700.6C, para 9.b.(1)(c), 9.b.(3)(a), att.I, para 9.b(1)(c)
- DNFSB Recommendation 94-4
- Y/OA-6238, LMES Readiness Assessment POA for D/A at Y-12 Plant, January 4, 1996
- Y/AD-623, Plan for Continuing and Resuming Operations, Y-12 Plant
- YSORT Assessment Plan for Disassembly/Assembly Activities Resumption, October 19, 1995

- Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994
- Y60-160, Y-12 Site Corrective Action Program
- Closure evidence files for selected MSA, LMES RA, and YSORT Assessment on D/A (3)
- LMES Corrective Action procedure, QA 16.1
- Y60-163, Validation and Verification
- Readiness Assessment Report for Receipt, Storage, and Shipment of Special Nuclear Materials at the Oak Ridge Y-12 Site
- ESAMS Item # I29766, Open LMES RA Pre-start Finding
- DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews
- ESS-QA-16.4, Energy Systems Action Management Systems (ESAMS)

Interviews Conducted:

- Quality Specialist (2)
- Action Tracking Coordinator for D/A
- YSORT Subteam Leaders (2)
- D/A Resumption Manager
- Compliance Manager
- Issue Management Program procedure writer
- LMES RA Team Leader and three team members
- YSORT Assessment Leader and four team members

Shift Performance Evolution:

- Beta 2E battery acid spill drill
- Drill involving contamination control and injured person

Discussion of Results:

Records Review: The Energy Systems Action Management System (ESAMS) is being used to identify and track deficiencies and associated actions that resulted from external and internal independent assessments. The Y-12 Site procedure (Y60-160) describes the corrective action program and provides guidance for corrective action evaluation, validation, and approval. A corrective action verification procedure (Y60-163) is also in place and outlines documentation requirements and field walkdowns.

A review of ESAMS found that the majority of D/A specific actions have been closed with only one pre-start, with one action item, and four post start findings remaining open. The backlog of disassembly and assembly issues is being adequately managed with priorities placed on DNFSB Recommendations, external and internal independent assessments, and all issues that have been determined to directly affect and impact the D/A resumption effort. These also included issues from Special Operations Package reviews and resumption actions described in Y/AD-623.

RA ASSESSMENT FORM 1
Management

The LMES RA for D/A identified 19 pre-start findings. The required corrective actions were prepared and all findings were closed. The YSORT assessment, however, found that several findings did not have the required documentation for proper closure. In addressing this issue, LMES randomly selected four additional findings for reassessment and found three of these deficient. Further investigation found 13 of the 19 pre-start findings requiring either new actions or documentation. Only one finding remained open at the start of this assessment.

Three LMES RA closed evidence files were selected to assess the adequacy and effectiveness of the LMES corrective action program. The documentation review and field walkdowns determined that all three files were adequately closed. A check with ESAMS also revealed that action status is correctly reflected. This is an improvement from the effort found during the Receipt, Storage, and Shipment conducted in September 1995. The evidence files, however, did not provide the necessary verification documentation as required by DOE-STD-3006-93 in that the description of the verification for closure was not provided. (MG3-1).

LMES QA 16.1, "Corrective Actions," is currently under revision and will be retitled "Issue Management Program". This procedure is expected to simplify and improve the overall corrective action process Energy Systems wide. The tracking system, ESAMS, will also be reprogrammed to provide added sorting features and upgraded to become a real-time database.

Interviews: The listed interviews were conducted and managers and ESAMS users discussed their understanding and expectation of ESAMS to support the D/A Resumption and their normal operations of facilities. From discussion, it was determined that ESAMS is the formal action tracking system, although the process is somewhat burdensome to use. LMES management has made the commitment to use ESAMS as the issue management tracking system and improvement to the system is under way.

Shift Performance: Drill program events were observed to determine how the identified issues would be tracked and finally corrected. The drill program is immature but the tracking method will drive issues to closure. It requires rigorous individual management by the assigned drill coordinator and the operations manager to take the items from the drill guide and cause training to be accomplished, work requests to be generated or procedures modified. This process should be proceduralized to facilitate the effort.

Conclusion: The criteria for this objective have been met.

RA ASSESSMENT FORM 1
Management

Issue(s):

- LMES evidence files do not contain the necessary verification documentation for pre-start finding closures. (MG3-1)

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D Rothrock John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 3	Finding X Observ.	Pre-Start Post-Start X	Issue No.: MG3-1 Rev. No.: Date: 03/05/96

ISSUE: LMES RA evidence files do not contain the necessary verification documentation for pre-start finding closures.

REQUIREMENT: " ...Closure packages should contain the following information:...A brief description of the actual corrective actions taken and the reason for concluding that closure has been achieved and how referenced documents support closure."

"As a minimum, the DOE and responsible contractor ORR (RA) reports shall be maintained in auditable form. This should include the ORR finding closure records."

REFERENCE(S): DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews, sections 4.5.d and 5.7.3.

DISCUSSION: Three LMES RA D/A pre-start finding closure evidence files were reviewed to verify proper documentation of closure. None of the files contained a description of the reason for concluding that closure has been achieved or how referenced documents support the closure, as specified in DOE-STD-3006-93. Actions should be taken to improve the documentation of closure to meet these requirements. These records are required to be retained as quality records.

CONCLUSION: Field verification of several of the corrective actions confirmed that the actions had been accomplished and, therefore, this is considered a post-start finding.

Reviewer: C S - Hsieh Clifford Hsieh	Approved: John D Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 4, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A systematic review of the facility's conformance to applicable Department of Energy Orders has been performed, any contractor non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Requests for Approvals have been adequately addressed for the facility/activity. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments. (Y/AD-623, Standards/Requirement Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

The Order Compliance Self-Assessment program is an ongoing and viable program supporting line management needs. (Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Confirm that the noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance and if the actions described in the Requests for Approvals have been adequately addressed for the facility/activity.

Interviews: Interview operations managers and operations personnel to assess their understanding of compensatory measures that are in place for existing non-compliances and actions in progress to gain compliance.

Shift Performance: Observe and assess the adequacy of any compensatory measures that are in place during the conduct of evolutions and drills.

Records Reviewed:

- Y/OA-6248, LMES Management Self Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant

- Y/OA-6249, LMES Readiness Assessment Report for the Resumption of Disassembly/ Assembly Activities at the Oak Ridge Y-12 Plant
- La Grone to Fee Memo, Interim Revision to Orders Compliance Process, November 1, 1994
- LMES/Y-12-DOE-4330.4A-CSA-17
- LMES/Y-12-DOE-5480.19-CSA-34C
- LMES/Y-12-DOE-5400.5-CSA-67B
- LMES/Y-12-DOE-5480.11-CSA-68
- LMES/Y-12-DOE-5480.20-CSA-82D
- Open D/A specific RFA MMES/Y-12-DOE-5480.19-CSA-160, 11/04/95
- A list of D/A specific RFAs
- Y10-182, Development of Request for Approval, June 1, 1994
- Y-12 Site Standing Order, Self Assessment, November 27, 1995
- LMES/Y-12-DOE-5480.22-80B

Interviews Conducted:

- Manager, Compliance Management, Y-12 Quality
- Issue Management Manager for D/A
- Operations Manager, D/A
- YSORT Leader
- LMES RA Team Leader
- D/A Supervisors (2)

Shift Performance Evolution:

- Beta 2E Battery Acid Spill Drill

Discussion of Results:

Records Review: Documents reviewed indicated that LMES has in place a structured Order Compliance review process. The La Grone to Fee memo dated November 1, 1994, approved the Standards/Requirements Identification Document (S/RID) prepared by MMES covering the Y-12 Site. For the facilities in the D/A mission area, RFAs have been prepared and compensatory measures and schedules for compliance are available. Forty-three (43) RFAs have been identified as D/A specific with three requiring preresumption actions. These three RFAs are related to training (CSA-82D), technical safety requirements (CSA-80B), and conduct of operations (CSA-160A). CSA-80B and CSA-82B have corrective actions that have been approved by DOE and are closed. CSA-160A, which required both corrective and compensatory actions, remains open. The required approval has been obtained from DOE. There are no unapproved RFAs applicable to D/A.

Review of the most current order compliance status in the Y-12 S/RID indicated that updates were being made as new noncompliances and changes are identified. During a recent readiness assessment for the Receipt, Storage, and Shipment Activities, a concern was identified that the results of ongoing assessments since September 1994 were not incorporated into the database to confirm adherence

to requirements. In addressing this issue, Y-12 Defense Program Manager has issued a Standing Order requiring facilities and organizations to report ongoing assessment results for inclusion in the S/RIDS database.

Interviews: Interviews with D/A managers and supervisors indicated good level of knowledge for RFAs of their facilities and associated compensatory measures. The compliance manager tracks compliance status for D/A specific RFAs and is very knowledgeable on S/RID requirements.

Shift Performance: The compensatory measure of requiring mentor oversight during selected evolutions was observed and effectively implemented. The assigned mentor was active in all phases of observed operations.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 5, REV. — DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A program is established to promote a site-wide safety culture. (CORE REQUIREMENT #14)

Criteria

An increased awareness and understanding of criticality safety and conduct of operations principles has been achieved. Training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Approach

Record Review: Spot check that the training done as a corrective action for the shutdown initiating events has been responsive to the causal factors. Review any processes used by management to continue to maintain and communicate these safety priorities.

Interviews: Interview a cross-section of personnel to spot check for the level of awareness and understanding of criticality safety and conduct of operations. Compare the observed level of awareness and understanding with description of the causal factors.

Shift Performance: During shift performance and drills monitor the level of supervisory and operator concern for criticality safety and conduct of operations principles.

Records Reviewed:

- EO 156, Rev. 1, Employee Concerns Response Program
- MMES ES-LR-400,Rev.2, Freedom to Express Concerns without Reprisal
- MMES ES-EO-200, Rev. 0, Salaried Employee Complaint Handling
- 10 CFR 708, DOE Contractor Employee Protection Program
- Bulletin boards
- Lessons Learned Database Reports for week of Feb. 26-Mar.1, 1996
- Record review of initial and continuing training as a corrective action for the shut down initiating event was conducted as part of Objective TR.3

Interviews Conducted:

- Occupational Safety Managers (2)
- Occupational Health Manager
- Radiological Controls Manager
- Engineering Support Manager

- o Disassembly and Assembly Operations Manager
- o Assigned Mentors (2)
- o Nuclear Maintenance Manager
- o Management Mentor for Nuclear Operations
- o Management Mentor for Balance of Plant
- o Operators were interviewed as part of Objective OP1, 2 and 3

Shift Performance Evolution:

- o Morning Briefing and Plan of the Day Meeting
- o Pre-operation Briefing, C5 Disassembly
- o C5 Disassembly Operation
- o Post Operation Briefing, C5 Disassembly
- o Drill involving contamination control and injured person
- o Pre and post drill briefing

Discussion of Results:

Record Review: Records indicate that a satisfactory program has been established to promote a site wide safety culture. Initial and continuing training has been conducted covering the causal factors of the September 1994 occurrence.

Interviews: Managers interviewed were very familiar with the corrective actions required for this event. They stated that they had observed an increased awareness of the operators and believed that safety had been improved throughout the facility. The operators were interviewed and the results of those interviews indicated increased awareness of safety requirements. Operator interviews are discussed in more detail under OP4 of this report.

Shift Performance: Criticality Safety and Conduct of Operations awareness was demonstrated during the observation of evolutions and drills.

Conclusion: The criteria for this objective have been met.

Issue(s):

- o None

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 6, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The results of the responsible contractor "Readiness Assessment" are adequate to verify the readiness of hardware, personnel, and management programs for safe operations. The Y-12 Site Office has reviewed the contractor Readiness Assessment and management self-assessment and completed a management self-assessment which verifies the readiness of the Y-12 Site office to oversee resumed facility operations. **(CORE REQUIREMENT #17)**

Criteria

The contractor Readiness Assessment and management self-assessment were adequately executed and it is confirmed that the scopes were properly established. A sufficient breadth of activities, facilities, and management systems were reviewed. The contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria and Review Approach Documents as written. Corrective actions and closure packages for restart findings have been verified to formally document, manage and resolve the Readiness Assessment restart findings. The contractor has issued a Readiness-to-Proceed Memorandum which is endorsed by the Y-12 Site Office and transmitted to the Restart Authority. (5480.31, para 9.b. (9) and (10))

Approach

Record Review: Review the contractor Readiness Assessment plan, findings, recommendations, implementation plans, and schedules to ensure they are complete in scope and adequate in detail. Verify the rationale for contractor acceptance of any noncompliance items. Decide whether the contractor has systematically analyzed findings for root causes and generic implications. Review the qualifications of the contractor Readiness Assessment team. Verify the contractor Readiness Assessment met the intent of the contractor Plan-of-Action, Implementation Plan, and Criteria Review and Approach Documents as written. (Input should be solicited from each functional area for this objective.) Review the contractor management self-assessment plan, findings, recommendations, and schedules to ensure they are complete in scope and adequate in detail. Review the qualifications of the management self-assessment team. Decide whether the contractor has adequately verified readiness assessment prerequisites and core objectives as identified in the Plan of Action and verified completion of other commitments in Document Y/AD-623, *Plan for Continuing and Resuming Operations*.

Interviews: Interview contractor Readiness Assessment team and Management Self-Assessment team leaders to verify the adequacy of their assessments.

Shift Performance: Select previously identified findings to determine if corrective actions have been effective in resolving the issue.

Records Reviewed:

- Y/OA-6238, LMES Readiness Assessment POA for Disassembly and Assembly Activities at Y-12 Plant, January 4, 1996
- Y/OA-6248, MSA Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant
- Y/AD-623, Plan for Continuing and Resuming Operations, Y-12 Plant
- Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994
- Y/OA-6244, DSO MSA for Disassembly and Assembly and Quality Support Functions
- Y60-160, Corrective Action Program
- Y60-162, Root Cause Analysis
- Selected closure evidence files from MSA, LMES RA, and YSORT Assessment issues (6)
- Y/OA-6245, LMES Implementation Plan for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant
- Y/OA-6249, LMES RA Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, January 15-26, 1996
- Y/OA-6249 Addendum, follow-up LMES RA Report, February 22, 1996
- Memorandum, DOE Self Assessment for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, February 23, 1996

Interviews Conducted:

- LMES RA Team leader and selected team members (3)
- YSORT Team leader and selected team members (4)

Shift Performance Evolution:

- Walkdown of the corrective actions associated with the following findings
  - LMES RA Finding L-RA-OP-1-4
  - LMES RA Finding L-RA-OP-1-2
  - LMES RA Finding L-RA-TQ-2-2

Discussion of Results:

Records Review: The Management Self-Assessment (MSA) Plan-of-Action (POA) and LMES Readiness Assessment (RA) Implementation Plan for the Disassembly and Assembly Activities (D/A) were reviewed for depth and breadth. The scope of LMES RA Implementation Plan followed the boundaries defined by the LMES POA and included 19 DOE Order 5480.31 Core Objectives (COs). The LMES RA also reviewed 15 prerequisites that must be complete before beginning LMES RA. These prerequisites consisted of management plans and reviews necessary to ensure line management readiness to proceed for safe operations. Additionally, the LMES RA also reviewed the causal factors associated with the September 22, 1994, incident

and issues relating to DNFSB Recommendation 94-4. The LMES RA Implementation Plan identified four major functional areas to be reviewed. These areas were: (1) Management; (2) Operations; (3) Safety Envelope; and (4) Training and Qualification. The breadth and depth of LMES RA Implementation Plan was appropriate and the report was comprehensive and well documented. The LMES RA followed the Criteria and Review Approach Document specified in the Implementation Plan and adequately addresses the requirement for evaluating readiness of hardware, personnel, and management programs. The makeup of both LMES MSA and RA Teams included experienced and well qualified personnel.

The YSO validation and verification of the results of the LMES MSA and RA was adequate. Deficiencies in this process are discussed in MG8.

Interviews: Those listed were interviewed to discuss the effectiveness of the LMES RA and YSORT assessment. The LMES RA Team was knowledgeable. The Team Leader was aware of the scope and review approach as described in the LMES D/A Plan-of-Action and Implementation Plan. YSORT Team Leader and Functional Leads who performed D/A assessments also understood the objectives of their reviews.

Shift Performance: Deficiencies in closure evidence files were discovered and are discussed in MG3-1.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 7, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES __	NO X

OBJECTIVE: Y-12 Site Office Facility Representatives are assigned and qualified to oversee and provide direction and guidance to the contractor. **(CORE REQUIREMENT #16)**

Criteria

Qualification of the Oak Ridge Y-12 Facility Representatives is in accordance with locally developed interim qualification standards. Long-term plans are developed for eventual qualification. There are sufficient numbers of Facility Representatives for oversight of conduct of operations and criticality safety. If a Facility Representative has not completed interim qualification, a mentor is assigned as a compensatory measure and mentoring requirements are defined and adequate. (DOE-STD-1063-93, para 4 and 5; 5400.20A, para 9, Ch. I, para 7, and Ch. 4; 5480.19, para 3.a.; Order 232.1, para 5.d, 8, and 9.h)

Approach

Record Review: Discuss the Facility Representative training and qualification review results with the Readiness Assessment team members evaluating the training area. Review Facility Representative's assignments. Review Facility Occurrence Report process.

Interviews: Interview Y-12 Site Office Facility Representatives to determine the degree of understanding of operations, safety envelope, past incidents and occurrences, conduct of operations principles, and stop work authority.

Shift Performance: Perform a walk through of the facility, with a qualified Facility Representative, to determine the Facility Representative's understanding of criticality safety and conduct of operations. Observe any interaction of the Oak Ridge Y-12 Site personnel during shift operations for related knowledge and required action.

Records Reviewed:

- YSO-1.6, Facility Representative Program
- YSO FACREPS Deficiency Tracking List
- YSO FACREPS Follow Up Items List
- Facility Representative assignments
- Facility Representative Assessment performance indicators
- Y-12 Annual Assessment Plan FY 1996
- Facility Representative Weekly Schedules

- Facility Representative Assessment Guidance Documents
- Facility Representative Records of Weekly Meetings
- Selected Y-12 Site Office Monthly Assessment Reports
- Facility Representative training and qualification records
- YSO-3.1, Conduct of Operations
- YSO-3.2, Deficiency: Tracking, Corrective Actions, and Closure
- YSO-3.4, Occurrence Reporting and Processing of Operations Information
- YSO-5.4, Operational Readiness Reviews/Suspension of Operations/Restart
- YSO-9.2, Contractor Oversight
- YSO-9.6, Management Walk-Around Surveillances
- Summary Occurrence Reports for 1995 and 1996
- Selected Occurrence Reports (4)

Interviews Conducted:

- Facility Representatives (2)
- Senior Nuclear Engineer

Shift Performance Evolution:

- Facility Representative daily activities
- Morning Briefing and Plan of the Day Meeting
- Pre-operation Briefing, C5 Disassembly
- C5 Disassembly Operation
- Post Operation Briefing, C5 Disassembly
- Drill involving contamination control and injured person
- Pre and post drill briefing

Discussion of Results:

Records Review: Three Facility Representatives have been assigned to this facility. One of these is the primary and the others are alternates. The assigned Facility Representatives have completed interim qualification and satisfied the requirements to provide oversight of the Disassembly and Assembly Operations. Minor deficiencies in the training records are recorded in Objective TR2. There are long term plans for completion of final qualification of all the Facility Representatives. This program is relatively new compared to other DOE sites. The progress toward final qualification of those assigned is satisfactory.

The Facility Representative is active in his role regarding Occurrence Reports and is familiar with all the requirements. This program is effectively implemented at the facility.

The Y-12 Facility Representative Program document describes the requirements for oversight coverage and systematic methods to be used as part of this effort. Special steps are described when the need for continuous coverage is required. No plan exists to provide continuous coverage of the Disassembly and Assembly Operation. This coverage should provide for the oversight of the contractor as

operations proceed from permission to resume to a condition of routine operations. The current documentation does not provide for a graded approach to these operations. A description of how the rest of the staff will support this effort is not provided. Without this guidance the Facility Representative could become overburdened and cause delays in facility operations. The operating contractor will not be fully aware of the oversight requirements. (MG7-1)

Interviews: The assigned Facility Representatives are fully aware of and understand the operations, safety envelope, past incidents and occurrences, principles of Conduct of Operations, and their authority to stop work. These are very competent people with exceptional experience and background for this assignment.

Shift Performance: Observation of the Facility Representative during his daily routine and performance during drills and evolutions indicated that he is effective and well respected by the contractor management.

Conclusion: The criteria for this objective have not been met.

Issue(s):

o Planned oversight coverage to support resumption of the Disassembly and Assembly Operations has not been documented. (MG7-1)

Reviewer: Jim Grise	Approved: John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 7	Finding X Observ.	Pre-Start X Post-Start	Issue No.: MG7-1 Rev. No.: Date: 03/05/96

ISSUE: Planned oversight coverage to support resumption of the Disassembly an Assembly Operations has not been documented.

REQUIREMENT: An adequate startup or restart test program has been developed tha includes adequate plans for graded operations testing to simultaneously confir operability of equipment, the viability of procedures, and the training o operators.

Y-12 Site Manager...Provides administrative direction, the overall priorities and guidance for the Y-12 Site Office Facility Representative and the Facilit Representative program....Provides guidance on emphasis areas for contracto performance evaluation...Ensures open and timely communication between the FR an other DOE ORO organizations.

The Y-12 Site Office Senior Nuclear Engineer shall establish extended coverag that requires assessment coverage beyond the normal routine based on specia activities, i.e., facility startup after extended shutdown or modifications, etc

REFERENCE(S): DOE Order 5480.31/O 425.1, Start-up and Restart of Nuclea Facilities, Core Requirement 10; YSO-9.2, Contractor Oversight, Para. 1.1; an YSO-1.6, Facility Representative Program, Para. 4.2 and 5.6.

DISCUSSION: Resumption of Disassembly and Assembly Operations will requir operators to perform activities in accordance with procedures on actual nuclea components. This will be the first time these personnel have actually used som of the equipment and performed the procedure on the real component. Cor requirement 10 of the Start-up Order requires adequate plans for grade operations to simultaneously verify operability of equipment, the viability o procedures, and the training of operators. The operating contractor will b required to perform these operations using a graded operations plan. If the YS Annual Assessment Plan is used to cover these operations the Facilit Representative will be over burdened and some of his other duties neglected. Th Contractor can plan his operations more effectively if he understands th oversight requirements.

RA DEFICIENCY FORM 2
Management

CONCLUSION: A YSO Disassembly and Assembly resumption oversight plan should be promulgated to verify effective graded operations. This plan should provide for the oversight of the contractor as operations proceed from permission to resume to a condition of routine operations. This plan is required before resumption.

Reviewer: Jim Grise	Approved: John Rothrock

RA ASSESSMENT FORM 1
Management

FUNCTIONAL AREA: MG	OBJECTIVE 8, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A Y-12 Site Office management self-assessment has been completed and has verified the readiness of the Y-12 Site Office to oversee the resumed facility operations. **(DP-1 PREREQUISITE CONCERN)**

Criteria

The management self-assessment has verified the post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are completed. The Phase II items identified as restart issued in document, "Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant," have been dispositioned and required prestart actions completed.

Approach

Record Review: Review the results of the Y-12 Site Office management self-assessment.

Interviews: Interview the team leaders and selected Y-12 Site Office personnel who participated in the management self-assessment.

Shift Performance: None.

Records Reviewed:

- YSORT Assessment Plan for Disassembly/Assembly Activities Resumption, October 19, 1995
- Summary Report, YSORT Assessment of the Disassembly and Assembly Activities at the Y-12 Plant, February 23, 1996
- Summary Report of the DOE Self Assessment for Disassembly and Assembly, February 23, 1996
- Readiness to Proceed Memo from Gustavson to Spence, February 23, 1996
- Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant

Interviews Conducted:

- YSORT Leader and selected team members (4)
- Y-12 DOE Self Assessment Team Leader and selected members (4)
- Facility Representative

RA ASSESSMENT FORM 1
Management

Shift Performance Evolution:

o None

Discussion of Results:

Records Review: Records reviewed indicated that the Y-12 Site Office has performed a self assessment for the resumption of Disassembly and Assembly (D/A) activities. The DOE Self-Assessment concluded that findings from the Readiness Assessment (RA) of Receipt, Storage, and Shipment Activities (RSS) against DOE Oak Ridge Operations have been closed. Any implications as result of the RSS findings have been assessed and resolved for the readiness of D/A activity resumption. All prerequisites defined in the DOE Plan of Action for D/A have also been satisfied. Restart actions planned in response to Defense Nuclear Facilities Safety Board Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions are complete. The Phase II items identified as pre-start issues in document, Y-12 Site Office Plan for Line Assessment of Resumption of Activities and Programmatic Improvements at the Y-12 Plant, have been dispositioned and required actions completed.

The YSORT assessment, conducted in accordance with Y-12 Site Office Restart Team Assessment Plan for D/A Resumption, evaluated the adequacy of the actions taken by LMES for D/A accivities in six functional areas. These functional areas were Management, Operations; Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Start-up Test and Assessments. The YSORT assessment was a performance based review and included assessments of LMES implementation of DOE Order 5480.31 requirements in the performance of LMES MSA and RA. The YSORT assessment was conducted over a three-month period and involved 20 experienced members. The assessment was comprehensive and resulted in the identification of 55 pre-start and 47 post-start findings.

During the September 27, 1994, DOE Self-Assessment for RSS, shortcomings with staffing and the qualification program for Facility Representatives and YSO staff were identified. The need for additional technical oversight personnel included Facility Representatives, criticality safety personnel, and conduct of operations personnel. The need for an enhanced technical training and qualification program, more explicit oversight expectations in conduct of operations and criticality safety, and better defined support in performance indicators and issues management were also identified. These issues have all been assessed for D/A applicability by the DOE management and required recovery actions are either in place or scheduled.

Selected closure packages for YSORT assessment pre-start findings were reviewed for completeness and closure adequacy. Corrective actions for YSORT findings have been prepared by LMES and validated by YSORT. Once the corrective action is implemented, YSORT performs the necessary verification and walkdowns. Evidence files reviewed, however, did not contain the necessary verification documentation for pre-start finding closure as required by DOE-STD-3006-93 in that the description of verification for closure was not provided. (MG8-1).

RA ASSESSMENT FORM 1
Management

Interviews: Those listed were interviewed and, overall, are knowledgeable in requirement for contractor oversight. Interviews also revealed that YSORT and DOE Self Assessment teams understood the scope and objectives of their reviews. The DOE Self Assessment Team Leader concluded that DOE has the required staffing and technical expertise to oversee the environmental, safety, and health programs associated with the D/A activities.

Shift Performance: None.

Conclusion: The criteria for this objective have been met.

Issue(s):

- YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures. (MG8-1)

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA DEFICIENCY FORM 2
Management

Functional Area: MG	Objective No.: 8	Finding X Observ.	Pre-Start Post-Start X	Issue No.: MG8-1 Rev. No.: Date: 03/05/96

ISSUE: YSORT evidence files do not contain the necessary verification documentation for pre-start finding closures.

REQUIREMENT: " ...Closure packages should contain the following information:...A brief description of the actual corrective actions taken and the reason for concluding that closure has been achieved and how referenced documents support closure."

"As a minimum, the DOE and responsible contractor ORR (RA) reports shall be maintained in auditable form. This should include the ORR finding closure records."

REFERENCE(S): DOE-STD-3006-93, Planning and Conduct of Operational Readiness Reviews, sections 4.5.d and 5.7.3.

DISCUSSION: Three YSORT D/A pre-start finding closure evidence files were reviewed to verify proper documentation of closure. None of the files contained a description of the reason for concluding that closure has been achieved or how referenced documents support the closure, as specified in DOE-STD-3006-93. Actions should be taken to improve the documentation of closure to meet these requirements. These records are required to be retained as quality records.

CONCLUSION: Field verification of several of the corrective actions confirmed that the actions had been accomplished and, therefore, this is considered a post-start finding.

Reviewer: C.S. Hsieh Clifford Hsieh	Approved: John D. Rothrock John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 1, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: There are sufficient numbers of qualified personnel to support safe operations. **(CORE REQUIREMENT #13)**

Criteria

Minimum staffing requirements have been established for operations personnel, supervisors, shift technical advisors, and managers. These staffing levels are met and are consistent with the safety analysis report requirements and assumptions. (Facility Safety Basis Documentation, 5480.20A, para 9)

Sufficient numbers of qualified operations personnel, supervisors, shift technical advisors, and managers are available to carry out facility operations. Staffing levels are consistent with the technical safety requirements. (Facility Safety Basis Documentation, 5480.20A, para 9)

Approach

Record Review: Compare Operational Safety Requirements and Limiting Condition for Operations staffing requirements, including both normal and postulated emergency conditions, with qualified personnel assignments to assess the ability of the facility to field the required personnel.

Interviews: Interview operators and supervisors to ensure they understand their responsibilities and roles with regards to minimum staffing requirements during all phases of facility operations.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy and ability to satisfy administrative and safety basis requirements.

Records Reviewed:

- Y/TS-1314 OSR for Buildings 9204-2 and 9204-2E
- D/A Required Reading Book through 28 February 1996
- D/A Standing Order 9204-2E-95-026

RA ASSESSMENT FORM 1
Operations

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assembly persons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Quality Evaluation Operations Manager
- DSO Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weld Rings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)

- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The Operational Safety Requirements(OSR) and Standing Order 9204-2E-95-026 for building 9204-2E were reviewed for minimum staffing requirements. Minimum staffing for safety and operations are addressed in Section 5.0, Administrative Controls, of the OSR.

Section 5.0 states that there are no minimum staffing requirements for safety to occupy the material access area in 9204-2E. This staffing conclusion is based on occupying the MAA while hazardous material is in storage and no operations are in progress. The OSR defines this building mode as "Warm Standby". "Warm Standby" does not require operations personnel to be present because the two safety significant systems are alarmed and continuously monitored at central locations (Fire Department and the PSS Office). The OSR does require the Site Operations Center to be manned by at least one person while in Operation and Warm Standby Mode. The Site Operations Center is manned at all times with at least one person. Training and qualification programs for the Site Operations Center and Fire Department monitors are currently being implemented. The Standing Order addresses specifically the numbers and types of personnel that are needed for minimum operations and minimum Warm Standby modes. There are sufficient number of qualified personnel to met these requirements.

Standing order 9204-2E-95-026 addresses the minimum staffing requirement, in general staffing for operations is determined by other requirements as they apply, such as: process, security, and nuclear material accountability requirements.

Interviews: Interviews were conducted on a cross section of building assembly persons, maintenance crafts, building supervisors, shift technical advisors and managers to determine if there was an understanding of the minimum staffing level for the facility. Managers, supervisors, and most assembly persons were knowledgeable of the requirements.

Shift Performance: Three drills and three evolutions were conducted where assembly persons, supervisors, and managers were observed performing their assigned duties and responsibilities. At all times during these activities, the required number of personnel if specified were present.

RA ASSESSMENT FORM 1
Operations

Conclusion: The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE: 2, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

- **OBJECTIVE:** Level of knowledge of operations personnel is adequate based on reviews of examinations, examination results, selected interviews and observation of work performance. **(CORE REQUIREMENT #3)**

Criteria

The level of operator fundamental knowledge is adequate to operate safely. (5480.19 Ch. XIII; 5480.20A, Ch. I, section 7 and 8, and Ch. IV, section 5).

Operations personnel retain a practical and adequate understanding of facility systems and operations. These personnel also give adequate attention to and retain an adequate knowledge of health, safety and environmental protection issues. (5480.19, Ch. XIII; 5480.20A, Ch. I, Section 7 and 8, and Ch. IV, Section 5).

Operators demonstrate the ability to carry out normal, abnormal, and emergency procedures. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7).

Operators demonstrate a working knowledge of facility systems and components related to safety. (5480.19 Ch. XIII; 5480.20A, Ch. I, Section 7)

Approach

Record Review: None. (Review of examinations to decide if they adequately test the operator's understanding of technical fundamentals, facility systems, and operating procedures will be done under the Training [TR] area)

Interviews: Interview operators and supervisors to assess their understanding of facility processes, procedures, and fundamentals of disassembly/assembly as they relate to the restart effort. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues. Verify the level of worker understanding and adequate use of applicable operating procedures, Criticality Safety Approvals and Operational Safety Reviews.

Shift Performance: Observe drills, simulations, routine evolutions and normal operations to assess technical understanding and ability of the operators and supervisors to conduct their duties and to safely operate systems and components according to approved plant procedures.

RA ASSESSMENT FORM 1
Operations

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996
- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

RA ASSESSMENT FORM 1
Operations

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assembly persons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Quality Evaluation Operations Manager
- DSO Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)
- D/A Fissile Material Container Storage Abnormal Condition Response Drill

- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: Assembly persons, building supervisors and managers examinations were reviewed and determined to adequately test their level of knowledge required for Restart. (TR4)

Interviews: Assembly persons, maintenance mechanics of different disciplines, building supervisors and managers were interviewed formally and while observing evolutions. These individuals were questioned in several areas, including: procedures, building safety systems, facility operations, fundamental requirements for restart, knowledge of health, safety, and environmental protection and the issues surrounding the September 1994 incident.

Interviewees were questioned on the specific 9204-2E safety systems. These questions included when a fire watch would be conducted and their reaction to an open unattended container. All were knowledgeable of both the systems and the proper response if there was a limiting condition.

Procedural questions concerning safety practices, such as an abnormal conditions and Nuclear Criticality Safety violations were asked and answered properly by assembly persons and supervisors. Assembly persons and support personnel were queried concerning facility operations during evolutions, specifically the disassembly of the C-5. There answers were complete and further demonstrated knowledge of the many procedures utilized in 9204-2E.

Personnel were questioned on the 1994 incident that lead to the shutdown of the Y-12 facility and the requirements for the restart such as qualification and certification. Their knowledge of these areas was adequate. In addition, 9204-2E personnel when questioned about ES&H requirements were familiar with both reporting and response requirements.

Shift Performance: Several drills and evolutions were conducted where operators, supervisors and managers were observed performing their assigned duties and responsibilities. In each of the evolutions and drills the supervisors and assembly persons demonstrated their ability to perform complex tasks by the procedure and in a safe manner. During these activities issues came up concerning equipment, procedures, or Nuclear Criticality Safety. Each incident was properly handled by the person in charge and the associated assembly persons. These observations confirmed that these assembly persons, building supervisors, and managers are well-trained and capable of safely performing their assigned task.

RA ASSESSMENT FORM 1
Operations

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE: 3, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: The implementation status for Department of Energy Order 5480.19, "Conduct of Operations Requirements for Department of Energy Facilities," is adequate for operations. **(CORE REQUIREMENT #12)**

Criteria

Program requirements have been developed and issued for the topics addressed in the Order. (5480.19, para 5.a.)

Operations personnel demonstrate the principles of the conduct of operations requirements during the shift performance period. Adequate performance will be demonstrated in the following areas of the Order:

- Operations organization and administration;
- Shift routines and operating practices;
- Control of on-the-job training;
- Investigation of abnormal events;
- Control of equipment and system status;
- Required reading;
- Timely orders to operators; and
- Operator aid posting.

(Note: Procedural aspects of Department of Energy Order 5480.19, Ch XVI, are covered under Criteria Review and Approach Document PR.1) (5480.19, para 5.a. and b.)

Approach

Record Review: Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles. Review documentation of required shift operating practices, directives for control of on-the-job training, procedures for investigation of abnormal events, procedures for control of equipment and reporting of system status, evidence that required reading is being read, review of logs indicating timely orders to operators, and

operator aid posting. Review the written directives for placement of operator mentors in the operating areas, where full compliance with the conduct of operations requirements cannot be met prior to resumption of operations.

Interviews: Interview operators and supervisors to assess their understanding of the conduct of operations principles and their personal responsibilities in the performance of their duties for safe operations. In those areas where conduct of operations requirements cannot be met prior to resumption of operations, interview qualified operator mentors and determine their level of experience and training to act as mentors. Interview operators to check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration.

Shift Performance: While observing evolutions and drill response, determine if the facility is effectively implementing out the conduct of operations requirements. Attend shift turnovers, incident critiques, and pre-job briefings. Observe operator rounds, panel walk downs, required reading use, procedure use, response to alarms, and control of system status. Observe briefings for operator mentors and preparation for shift operations.

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996
- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- DOE-STD-3006-93 Writing Guide for the Conduct of Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs)

- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996
- LMES Policy Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5000.3B, for D/A, (various dates) as of 18 February 1996
- (LMES) OR Y-12 DOS Order Compliance Package for DOE Order 5480.19, for D/A, (various dates) as of 18 February 1996
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 DSO Performance Indicator Measures Follow-On Report for D/A dated 21 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996

- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Disassembly and Assembly (D/A) Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Operations/Functional Manager
- DSO Building Operations Manager
- DSO Building Quality Evaluation Operations Manager
- DSO Disassembly and Storage (DSO) Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager

- o D/A Order Compliance Manager
- o DSO Quality Assurance and Issues Management Manager
- o DSO D/A Conduct of Operations Implementation Manager
- o DSO Health and Safety Implementation Manager
- o DOS Health and Safety Assistant Implementation Manager
- o DOE DSO D/A Facility Representative (FR)
- o DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- o Shift Operations Briefing and Plan of the Day (POD) (4)
- o Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- o DSO Evolution: C-5 Disassembly
- o DSO Part Movement Operation: Walk-in Hood and Scales
- o DSO Quality Organization (QO) Evolution: Radiograph
- o DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- o D/A Drill Briefs (3) and Debriefs (3)
- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The review of records for this objective included the review of recently completed logs, shift documents, and other plant records of note to assess compliance with conduct of operations principles. It also included the review of shift operating practices, directives for control of on-the-job training, maintenance records, procedures for investigation of abnormal events, procedures for control of system status, evidence that required reading is being read, and operator aid posting. This review was consistent with the present stage of the Y-12 D/A phased implementation of the Conduct of Operations requirements, as discussed below. This Objective overlaps in part the Objective OP.6 of this report.

The logs and records established for D/A are adequate for this stage of maturation in the D/A phased implementation of the Conduct of Operations. Many of the logs or status books have been created within the past few months. Thus, some of the status books contain the instruction or guidance, the notebook dividers for the appropriate sections of the book, and very few actual entries. Some are now due or will soon be due for their quarterly reviews. Three examples of records in this immature condition are the D/A Equipment Status Book, the D/A Temporary Modification Log, and the D/A Deficient Material Condition Log. Some logs and status books are more mature. Examples of mature logs include the D/A Operator Aids Book, the D/A Standing Orders Book, the D/A Required Reading Book, and the Lockout/Tagout Log. These have many entries and have had their periodic

reviews. In both cases (mature or immature books) there are some administrative errors that include the lack of dates with some signatures, and errors in completing the form such as where the signature is in the "date block" and the date is in the "signature block." In at least one case, for the D/A Standing Orders, the periodic review included a very detailed recommendation that some of the D/A Standing Orders should now be canceled or included in other documents. Actions in accordance with that recommendation have not yet been completed. As previously stated, the D/A operating records and logs are adequate, but they need to mature as the implementation of the Conduct of Operations continues.

Interviews: Interviews with the operators and supervisors indicated that they adequately understand the conduct of operations principles, and their personal responsibilities in the performance of their duties. The topics discussed included procedures and their use, operational evolutions, operational tours in their spaces, and the response to unusual operating conditions and events. There were no specific weaknesses noted, and both groups (operators and supervisors) are satisfactorily knowledgeable for safe operations.

D/A is implementing nine of the chapters of the Conduct of Operations for the D/A startup; that effort is about 60% complete by their own Performance Indicator Measures assessments (discussed further in this report). This score is determined by their assessment of the development of the administrative procedures, the completion of training, and their subjective evaluation of the demonstrated maturity of the implementation. The interviews conducted during this RA support their assessment.

In those D/A areas where conduct of operations requirements cannot be met prior to resumption of operations. Mentors are used as compensatory measures to meet the requirements of RFA #MMES/Y-12-DOE-5480.19A-CSA-160B for the Conduct of Operations. Interviews with the qualified operator Mentors indicated that their level of experience and training are adequate for them to act as Mentors in fulfilling this responsibility. There were no significant deficiencies noted in the interviews of the Mentors.

Interviews with the operators to specifically check their understanding of the control of equipment and verification of system status, shift routines, operating practices, operations organization and operations administration indicated that they are satisfactory.

Overall, the interviews of the operations personnel and supervisors indicated that they had an adequate understanding of the conduct of operations principles in the performance of their duties for safe operations, for the control of equipment and system status, and for operating practices and routines, and for operations organization and administration. Their understanding was consistent with the present stage of the Y-12 D/A phased implementation of the Conduct of Operations Requirements. There were no significant deficiencies noted.

Shift Performance: Observations of drills, routine evolutions, normal and abnormal operations confirmed that the Y-12 D/A is implementing these requirements in a phased approach.

Specifically, this CRAD required the demonstration of performance in eight specific areas of the DOE Order 5480.19: Operations organization and administration; Shift routines and operating practices; Control of on-the-job training; Investigation of abnormal events; Control of equipment and system status; Required reading; Timely orders to operators; and Operator aid posting. For ease of discussion each of these specific areas is evaluated below:

- Operations organization and administration: The functioning of the operations organization and administration was observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. During the observations of drills and evolutions, the following deficiencies were identified associated with formality of operations consistent with the expectations of DOE Order 5480.19. Some prejob briefings were not always complete and comprehensive to the degree necessary to insure that all participants had adequate information to successfully complete the task or shift. Lessons learned from previous similar events were not routinely discussed. The scheduling and conduct of prejob and predrill briefings was sometimes delayed due to the absence or late attendance of key personnel, or the lack of copies of administration procedures for the event (drill guide, additional procedures, etc.), or the lack of prior approval or coordination for the event. This is discussed in the Training and Qualification CRAD (TR-6). The Quality Organization's (QO) implementation of the Conduct of Operations is not as mature as the D/A Disassembly and Assembly operational organization's implementation. While the basic Y-12 D/A Organization and Administration is adequate, the functioning of the organization is still in a maturation process. This maturation needs to continue after the completion of this RA as they manage the startup effort to the commencement of routine operations. This is discussed in Objective OP5 and the respective Pre-Start Deficiency OP5-1.

  The use of Mentors is a compensatory measure for the present status of CSA-160B for the implementation of the Conduct of Operations. These Mentors are an active part of the D/A team. There is now a recent strategy for the phase out of the Mentors as the D/A Conduct of Operations phased approach matures. The Mentors are also the primary source on internal D/A programmatic assessments or self-assessments; thus a solid, Operational Self-Assessment program must be implemented at D/A as the Mentors are phased out. The D/A Performance Indicator Measures that are presently evaluated for the status of implementation of the nine (of eighteen) chapters of "Conduct of Operations" that D/A has committed to implementing for startup, give D/A about a 60% overall appraisal. This appraisal is based on the administrative implementation (25% of the

"score"), training (25% of the "score"), and a subjective evaluation of the "maturity" of the implementation (50% of the "score").

- Shift routines and operating practices: The shift routines and operating practices administration were observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. Shift routines and operating practices including operating space activities, shift briefings (4), and communications are adequate. The shift turnover documentation for the past three months indicated that the records contain the required information to support effectively communicating the plant status of safety and significant systems. While the forms were effective, there were several cases noted where they were not filled out completely or correctly. In four cases, an equipment status was indicated as both "operable" and "inoperable." In some cases the status of Criticality Safety Approvals (CSAs) were indicated as "Not in Compliance," but there were few notations or comments. Examples of this included problems with drum drain holes and mislabeling of a storage area. This is also significant in that the time period without corrective action being taken is excessive given that CSA compliance is an Operational Safety Requirement (OSR). On two occasions the Plant Shift Supervisor (PSS) had not provided input to the D/A personnel regarding overnight changes in plant status. Lastly, improvements could be realized through the inclusion of corrective action plans and status in the turnover forms, even if this only includes a summary or list of key steps in the corrective actions. This could help to reduce the time that the conditions are in an abnormal or noncompliance status.The implementation of logkeeping requirements, check sheets, and related operational logs and status boards is in the initial stages of the phased Y-12 D/A implementation. Specific comments and deficiencies on these logs and records are discussed earlier in the Records Review portion of this CRAD.

- Control of on-the-job training: During this RA there was no on-the-job training conducted. Interviews with operating personnel and the review of the records indicated that the control of on-the-job (OJT) training is adequate, however the documentation of the performance of OJT has not been consistent or thorough and needs improvement. This is also discussed within the Training and Qualification (TR) objectives.

- Investigation of abnormal events: During this operating period one specific event demonstrated their ability in this area. In that case, a container of materials used to seal a drain in the C-5 Disassembly area was discovered in the vicinity of a storage array. The investigation and resolution of this matter was adequately handled by the supervisors and operators after the material was discovered. In that resolution, the operators and supervisors first determined that it was not a hazard, but it was a construction material. They identified the probable type of material (sealant) and the reason that it may have been found in this

area. They visually confirmed the material as being the sealant. Then they developed a solution to remove it. Throughout, the coordination between the supervisors, the operators, and the support personnel was good. There were no significant deficiencies noted during that process. Again, the area of the investigation of abnormal events will need additional development as the maturation process continues.

- Control of equipment and system status: The control of equipment and system status was observed during four days of operations, evolutions and drills. This included a major handling evolution of the C-5 Assembly, related specific processes to the C-5 Assembly, and three operations drills. The control of equipment and system status is adequate. Surveillance tracking indicated that in several cases the surveillance completions occurred during the "grace period (i.e. the period + 25%). This practice should be minimized. It was also noted that some other periodic requirements (such as preventive maintenance) were often done on the last day of the period. In some cases this delayed activity then competed with or interfered with the events scheduled for the day. These instances indicate that there is room for improvement in planning and scheduling as the operational pace and practices mature. At this time some of the actual routines for the scheduling and completion of periodic equipment checks (such as the periodic elevator checks) are still being developed by the Operations Manager, the Shift Manager, and the Facility Manager. Again, this area will need additional development as the maturation process continues.

- Required reading: The Required Reading Program has been established and its present implementation is adequate for the phased approach to operations; but all of the required reading appears to have been completed within the last few weeks, with the majority of it being done for all people in the program within a two day period.

- Timely orders to operators: The implementation of a program to ensure Timely Orders to Operators is adequate, again for this stage of implementation of the Conduct of Operations. There are a large number of D/A Standing Orders presently in effect, and which are documented as having been read by the D/A personnel. A review of these entries indicated that they are adequate in clarity and content, but their effectiveness may be limited due to the number of orders. This was also recognized by a recent programmatic assessment by one of the D/A Mentors who recommended that many of these orders should now be canceled or included in other administration to avoid diluting their effect because of the number of Standing Orders.

- Operator aid posting: The implementation of the Operator Aids and their posting has been started and is adequate for this point of the phased approach to the implementation of the Conduct of Operations. Presently there are also a large number of additional hand written signs that have been posted on storage containers and shelves, fork lifts, tool

containers, walls, and passageways. These signs should be evaluated to determine their value, usage, and applicability under the Operator Aids program.

Conclusion: The criteria for this objective have been met consistent within the context of the initial stage of the Y-12 D/A phased implementation of the Conduct of Operations requirements.

Issue(s):

o None.

Reviewer: Robert Baeder	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 4, REV. 1 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: 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.
(CORE REQUIREMENT #14)

Criteria

Site programs actively promote safety through a broad range of activities possibly including, but not limited to, safety bulletins, lessons learned briefings and/or employee concerns programs. (5480.1B, Ch. IX; 5480.29, para 9.a.)

Contractor personnel will exhibit awareness of the safety-related policies and procedures necessary for daily operations. Personnel will exhibit awareness of requirements for safe operations as set forth in Criticality Safety Approvals, Operational Safety Reviews, and appropriate operating procedures. (5480.19)

Approach

Record Review: Verify the existence and use of mechanisms (policies, procedures, etc.) which promote the identification and promulgation of safety concerns to employees and provide the employee the opportunity to report safety issues.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2 and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.)

Record Review:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994

- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager
- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner

- o D/A Shift Technical Advisor (STA) (2)
- o D/A Mentors (3)
- o D/A Process Engineer
- o D/A Building Quality Evaluation Operations Manager
- o DSO Procedures Manager
- o DSO Procedure Writer
- o DSO Training Manager
- o DSO Trainers (2)
- o DSO Compliance Manager
- o DSO Emergency Preparedness and Drill Program Manager
- o DSO Self Assessment and Order Compliance Manager
- o D/A Order Compliance Manager
- o DSO Quality Assurance and Issues Management Manager
- o DSO D/A Conduct of Operations Implementation Manager
- o DSO Health and Safety Implementation Manager
- o DSO Health and Safety Assistant Implementation Manager
- o DOE DSO D/A Facility Representative (FR)
- o DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- o Shift Operations Briefing and Plan of the Day (POD) (4)
- o Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- o DSO Evolution: C-5 Disassembly
- o DSO Part Movement Operation: Walk-in Hood and Scales
- o DSO Quality Organization (QO) Evolution: Radiograph
- o DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- o D/A Drill Briefs (3) and Debriefs (3)
- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: Records reviews indicate that programs are in place to facilitate and promote open communications and increased awareness concerning safety, health and the environment at the Y-12 plant. There are many programs that fold together to promote and expand a site wide ES&H culture. These programs such as Employee Concerns Program, Performance Measurement Teams, Lessons Learned Program, ES&H committee programs and bulletins are well organized and focused to involve participants from all levels. In addition, the safety organization has conducted surveys based upon an International Atomic Energy Agency (IAEA) guidance document 75-INSAG that indicated that the safety culture has reached both craft and management. This survey covered approximately 20% of the population of DSO and the Quality Organization that supports D/A operations.

RA ASSESSMENT FORM 1
Operations

Interviews: Interviews were conducted with the many individuals listed above to discuss their understandings of programs and formal mechanisms available which promote the identification and promulgation of ES&H concerns. Employees are provided the opportunity to report safety issues. Many of the assembly persons and supervisors indicated that there was a very open atmosphere for the discussion of their concerns regarding ES&H issues, and that their concerns were generally acted upon. No one interviewed had ever used the Employee Concern Program. These individuals felt all their concerns had been acted on appropriately by their supervisors and management.

Shift Performance: Observations of evolutions and drills indicated a primary focus was placed on potential ES&H issues. Several times these operations would be stopped and the proper steps taken to alleviate a potential concern no matter how remote. ES&H issues were discussed during POD briefings and pre-job briefings. All participants showed an interest in improving ES&H performance.

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: David Allen	Approved: John Rothrock

RA ASSESSMENT FORM 1
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 5, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES ___	NO X

OBJECTIVE: 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 adequacy of training of operators. **(CORE REQUIREMENT #10)**

Criteria

The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)

Approach

Record Review: Evaluate the status of actions under the Implementation Plan. Ensure a phased approach to normal operations and inclusion of procedures, operator qualification and equipment startup testing as required.

Interviews: None (Note: Interviews within the scope of this CORE OBJECTIVE are covered within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and operations support personnel level of knowledge.)

Shift Performance: None (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents 1-3, covering operations and the level of knowledge of operations support personnel.)

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996

RA ASSESSMENT FORM 1
Operations

- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) dated 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Shift Manager
- D/A Facility Manager
- D/A Mentors (3)

- o DSO Compliance Manager
- o DSO Self Assessment and Order Compliance Manager
- o D/A Order Compliance Manager
- o DOE DSO D/A Facility Representative (FR)
- o DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- o Shift Operations Briefing and Plan of the Day (POD) (4)
- o Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- o DSO Evolution: C-5 Disassembly
- o DSO Part Movement Operation: Walk-in Hood and Scales
- o DSO Quality Organization (QO) Evolution: Radiograph
- o DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- o D/A Drill Briefs (3) and Debriefs (3)
- o D/A Fissile Material Container Storage Abnormal Condition Response Drill
- o D/A Hazardous Spill Reporting and Responding Drill
- o D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The startup planning documentation referenced was reviewed to determine how graded operations had been factored into the restart effort. This planning documentation includes several restart plans, a resumption plan, a restart team assessment plan, and closure criteria for Y-SORT and LMES Assessments. However, an appropriate restart program has not been developed that meets the specific criteria of this CRAD: "The appropriate restart programs are developed for the identified processes and the processes are fully operable to perform their intended function. The restart programs document the operability of the equipment that has been in the stand-down mode, the usefulness of the procedures, and the relevance of the training to the intended use of the restarted equipment. (5480.31, Attachment II, para 10)" The Y-12 D/A implementation plans to date have specifically focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations.

Y-12 D/A needs to develop an organized startup plan to complete corrective action and final requirements for the commencement of the D/A operations. This plan should have adequate detail to describe how graded operations validate the procedure viability, the equipment readiness, and the training of operators. This document should be controlled by a change control process to assure continued graded operations during the resumption effort. Such a plan should be integrated with the DOE ORO oversight plan discussed in the Management (MG) section of the RA report. (MG7-1)

Thus, the criteria of this objective to develop an adequate startup or restart test program that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators has not been met.

Interviews: None.

Shift Performance: None.

Conclusion: The criteria for this objective have not been met.

Issue(s):

- o An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. (OP5-1)

Reviewer: Robert Baeder	Approved: John Rothrock

RA DEFICIENCY FORM 2
Operations

Functional Area: OP	Objective No.: 5	Finding__X___ Observ._____	Pre-Start__X__ Post-Start____	Issue No.: OP.5-1 Rev. No.: 2 Date: 03/05/96

ISSUE: An adequate startup plan needs to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

REQUIREMENT: A startup plan is required to be developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators.

REFERENCE(S): DOE Order 5480.31, Attachment II, paragraph 10.

DISCUSSION: The Y-12 Disassembly and Assembly (D/A) Implementation Plans to date have focused on the completion of the respective evaluations of the DOE Order 5480.31 process for the commencement of operations. At present the Y-12 D/A does not have a startup plan to complete corrective action and final requirements to manage the startup effort. Thus, the criteria of this objective are not met.

Issues related to this startup plan are included in the Management (MG) issue MG7-1, and the Training and Qualification (TR) issue TR1-2.

CONCLUSION: The Y-12 management needs to develop an adequate startup plan for D/A activities that includes plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. This is considered a pre-start finding.

Reviewer: Robert Baeder	Approved: John Rothrock

RA DEFICIENCY FORM 2
Operations

FUNCTIONAL AREA: OP	OBJECTIVE 6, REV. 2 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Orders 5000.3B and 5480.19 has been performed. Noncompliance items have been addressed. Documentation of compensatory measures is complete and are understood by contractor and Department of Energy Y-12 Site Office personnel. **(CORE REQUIREMENT #7)**

Criteria

Noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board, especially Department of Energy Orders 5000.3B and 5480.19, have approved schedules for gaining compliance and if the actions described in the Request for Approvals have been adequately addressed for the facility/activity. Operations managers and Department of Energy Y-12 Site Office personnel have reviewed the compensatory measures and corrective actions taken to address the nonconformances. A program for periodic management assessment of the continued need and adequacy of compensatory measures is implemented. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction)

Approach

Record Review: Review the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified. Verify that documentation of compensatory measures is complete and that there is a documented program for periodic assessment of compensatory measures.

Interviews: For order requirements not fully implemented, determine if management understands areas of noncompliance and actions necessary for full implementation. In addition, determine if management is aware of any required compensatory measures associated with these noncompliances. Interview selected Department of Energy Y-12 Site Office personnel to determine their understanding of compensatory measures, when they are required, and when they can be removed.

Shift Performance: None. (Note: Shift Performance observation within the scope of this CORE OBJECTIVE is addressed within Criteria Review and Approach Documents OP.1, OP.2, and OP.3, covering operations and the level of knowledge of operations support personnel.

RA DEFICIENCY FORM 2
Operations

Records Reviewed:

- Oak Ridge (OR) Y-12 Plant Nuclear Operations Conduct of Operations Manual
- DOE OR Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 1 dated 8 January 1996
- Lockheed Martin Energy Systems (LMES) Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 4 January 1996
- DOE OR Operations Office (ORO) Implementation Plan for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, dated 30 January 1996
- (LMES) OR Y-12 Plant Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994, dated 14 October 1994
- (LMES) Y-12 Plan for Continuing and Resuming Operations at the OR Y-12 Plant, dated October 1994
- (LMES) OR Y-12 Disassembly and Assembly (D/A) D/A Disassembly and Storage Organization (DSO) Management Self-Assessment Plan for the Disassembly and Assembly and Quality Support Functions, dated November 1995
- DOE OR Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption, dated 19 October 1995
- DOE-STD-3006-93 Writing Guide for the Conduct of Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs)
- Defense Nuclear Facilities Safety Board (DNFSB) letter from the Chairman, Mr. John T. Conway re DNFSB recommendation 94-4, dated 20 December 1995
- Y-12 D/A Conduct of Operations Programmatic Assessment of the Implementation of the applicable chapters of the Nuclear Operations Conduct of Operations Manual for the period of September 1995 through February 1996
- OR Y-12 Operational Safety Requirements (OSR) for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1 dated 18 September 1995
- (LMES) OR Y-12 Y/AD-627, Rev 1, Mentor Program Description for Y-12 Resumption, dated 12 January 1996
- (LMES) OR Y-12 D/A Memorandum on the Conduct of D/A Drills (no date) of February 1996
- (LMES) OR Y-12 D/A, Critiques of D/A Incidents and Events for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization: Disassembly and Assembly Resumption Training Criteria, Developed by Management Assessments and Compliance, Revision 2 dated February 1996
- Selected Occurrence Reporting System (ORPs) Occurrence Summary Reports, applicable to OR Y-12 for the period of September 1995 through February 1996
- LMES Immediate Action Directive for Management Control Procedure EO-156, Employee Concerns Response, Revision 1 dated January 1996

RA DEFICIENCY FORM 2
Operations

- LMES Policy, Number ES-LR-400, Freedom to Express Concerns without Reprisal, Revision 2 dated 23 January 1996
- LMES letter from the LMES Vice President for Defense and Manufacturing re: The Clear Definition of Actions Required on Y-12 Order Compliance Program Requests for Approval (RFAs) Prior to Resumption, dated 23 August 1995
- (LMES) Y-12 DSO Consolidated List of Compensatory Measures for DSO (for D/A) of 12 February 1996 with referenced Summary Sheets and Corrective Action Plan Report Summaries
- (LMES) Y-12 DSO D/A Contractor Request for Approval (RFA) #MMES/Y-12-DOE-5480.19A-CSA-160B re Conduct of Operations dated 7 February 1996
- (LMES) OR Y-12 Y/OA-6238, Readiness Assessment (RA) Plan of Action for the Resumption of Disassembly/Assembly Activities at the OR Y-12 Plant, Revision 2 dated 4 January 1996
- (LMES) OR Y-12 Y10-190, Y-12 Plant Management Control, New, dated 12/01/95
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5000.3B, for D/A, (various dates) as of 18 February 1996
- (LMES) OR Y-12 DSO Order Compliance Package for DOE Order 5480.19, for D/A, (various dates) as of 18 February 1996
- DOE ORO Y-12 Site Office Restart Team (Y-SORT) Restart of D/A Activities at the Y-12 Plant Assessment, final report dated 23 February 1996
- (LMES) OR Y-12 DSO Performance Indicator Measures Follow-On Report for D/A dated 21 February 1996
- (LMES) OR Y-12 D/A Individual Resumption Item Closure Criteria for D/A for selected Y-SORT and LMES Assessment Results through 26 February 1996
- (LMES) OR Y-12 D/A Training Lesson Plans for the applicable chapters to be implemented at D/A for the Conduct of Operations, (no dates) as of February 1996
- DOE ORO Y-12 DSO D/A Facility Representative (FR) Assessments for the period of September 1995 through February 1996
- (LMES) OR Y-12 D/A Drill Guides for the Conduct of D/A Drills, (various dates), for those drills done during this RA, as of February 1996
- D/A Shift Manager's Log
- D/A Temporary Modification Log
- D/A Lockout/Tagout Log
- D/A Quality Organization (QO) Log
- D/A Equipment Status Book
- D/A Deficient Material Condition Log
- D/A Operator Aid Log
- D/A Standing Orders
- D/A Required Reading Book through 28 February 1996

Interviews Conducted:

- Disassembly and Storage (DSO) D/A Restart Manager
- D/A Operations Manager
- D/A Assistant Operations Manager
- D/A Operations Manager's Administrative Assistant
- D/A Shift Manager

- D/A Shift Manager's Administrative Assistant
- D/A Facility Manager
- D/A Facility Manager's Administrative Assistant
- D/A Facility Manager's Operations Associate
- D/A Facility Specialist
- D/A Facility Support Manager
- D/A Facility Maintenance Manager
- D/A Disassembly and Assembly (D/A) Supervisors (4)
- D/A Assemblypersons (14)
- D/A Welder
- D/A Cleaner
- D/A Shift Technical Advisor (STA) (2)
- D/A Mentors (3)
- D/A Process Engineer
- DSO Building Operations/Functional Manager
- DSO Building Operations Manager
- DSO Building Quality Evaluation Operations Manager
- DSO Disassembly and Storage (DSO) Procedures Manager
- DSO Procedure Writer
- DSO Training Manager
- DSO Trainers (2)
- DSO Compliance Manager
- DSO Emergency Preparedness and Drill Program Manager
- DSO Self Assessment and Order Compliance Manager
- D/A Order Compliance Manager
- DSO Quality Assurance and Issues Management Manager
- DSO D/A Conduct of Operations Implementation Manager
- DSO Health and Safety Implementation Manager
- DSO Health and Safety Assistant Implementation Manager
- DOE DSO D/A Facility Representative (FR)
- DOE Y-12 Site Operations Office D/A Representative

Shift Performance Evolution:

- Shift Operations Briefing and Plan of the Day (POD) (4)
- Shift Evolution Pre-Evolution (1) and Pre-Job Briefings (3)
- DSO Evolution: C-5 Disassembly
- DSO Part Movement Operation: Walk-in Hood and Scales
- DSO Quality Organization (QO) Evolution: Radiograph
- DSO & QO Evolutions: Assembly and Verification, Weldrings Degreasing and Electropolishing, and Rings Electron Beam (EB) Welding.
- D/A Drill Briefs (3) and Debriefs (3)
- D/A Fissile Material Container Storage Abnormal Condition Response Drill
- D/A Hazardous Spill Reporting and Responding Drill
- D/A Injured and Potentially Contaminated Worker (during Hood operations) Drill

Discussion of Results:

Record Review: The review of records for this objective included the review of the order compliance package for Department of Energy Orders 5000.3B and 5480.19, including the applicable Compliance Schedule Agreement, exemptions, and compensatory measures. These compliance packages are adequate. For the identified Request for Approvals, the schedule commitments have been met, and compensatory measures have been identified. The documentation of compensatory measures is complete and there is a documented program for periodic assessment of compensatory measures. This review was consistent with the Y-12 D/A phased implementation of the Conduct of Operations requirements.

There were some administrative deficiencies identified during this review. Some of the action plan packages and some closure packages for corrective actions associated with RFA #MMES/Y-12-DOE-5480.19A-CSA-160B were not always completed in accordance with their prescribed procedures. Examples of these administrative errors included missing dates next to signatures, missing check marks in some blocks on the administrative forms, and some missing notations or comments that were required by their administrative forms. The DSO and Quality Organization is working to improve the administration of these packages.

In addition and specifically, the number of days to the issuance of the final report version for the Occurrence Report has not always met the DOE Order 5000.3B requirement; this is known to the Y-12 DSO and Quality Organization, they are tracking the length of time to the completion of these reports, and they are working to meet the 5000.3B requirements.

D/A is implementing nine of the chapters of the Conduct of Operations for the D/A startup; that effort is about 60% complete by their own Performance Indicator Measures assessments (discussed further in this report). The review of records of the compliance package and the associated D/A records and logs support this 60% assessment. The review of records to assess the implementation status of these orders is further discussed in OP.3.

Interviews: For those order requirements that are not fully implemented, the interviews indicated that the management understands the areas of noncompliance and actions necessary for full implementation. In those D/A areas where conduct of operations requirements cannot be met prior to resumption of operations, mentors are used as compensatory measures to meet the requirements of RFA #MMES/Y-12-DOE-5480.19A-CSA-160B for the Conduct of Operations. Interviews with the qualified operator Mentors indicated that their level of experience and training are adequate for them to act as Mentors in fulfilling this responsibility. It was also determined that the management is aware of the required compensatory measures associated with these noncompliances. Interviews revealed that Department of Energy Y-12 Site Office personnel understand the compensatory measures, when they are required, and when they can be removed.

Shift Performance: None.

RA DEFICIENCY FORM 2
Operations

Conclusion: The criteria for this objective have been met.

Issue(s):

None.

Reviewer: Robert Baeder	Approved: John Rothrock

RA ASSESSMENT FORM 1
Procedures

FUNCTIONAL AREA: PR	OBJECTIVE 1, REV. 3 DATE: March 5, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: There are adequate and correct procedures for operating systems and utility systems. **(CORE REQUIREMENTS 1, 15, and 18)**

Criteria

Criticality Safety Approvals and operating procedures applicable to disassembly/assembly activities (refer to "Disassembly/Assembly Procedures (U)", dated January 4, 1996) are technically accurate, consistent with each other, and incorporate the appropriate safety limits. A viable system for the control of the issuance and use of procedure revisions by the field and by the training organizations exists. (5480.19, Ch. XVI; 5700.6C, para 9.b.(2)(a); 4330.4B, Ch. II, Section 6, 5480.22, para 9)

Approach

For Criticality Safety Approvals contained in Appendix II of the Oak Ridge Y-12 Site's Readiness Assessment Plan-of-Action, and procedures listed in document "Disassembly/Assembly Procedures", dated January 4, 1996, review validation, walk down, and reviewer comments for recent procedure changes on safety systems. Review procedures for implementation of the safety envelope. Assess the adequacy of the review and approval process for procedures and changes to procedures. Review documented basis for test acceptance criteria. Assess the currency of procedures and verify that current configuration of safety systems is reflected in operations, maintenance and surveillance procedures.

Interviews: Interview operators and supervisors to assess their understanding of the temporary procedure change process, and how they verify the latest approved revision of a procedure. Interview support staff personnel responsible for procedure writing and revision to assess their understanding of procedure control requirements, validation process, and implementation of safety requirements. Interview operators and supervisors to assess their understanding of site procedure compliance policy. Interview personnel from the field and training organizations to ensure that they understand the system for control of the issuance and use of procedural revisions.

Shift Performance: While observing evolutions and drill response, determine if the facility is operating with current, approved procedures (with valid changes if applicable) which allow full compliance and execute the required function. Determine if the facility procedures are adequate in content, level of detail, and acceptance criteria, and if they properly implement safety requirements. If temporary procedure changes are

necessary, assess the steps taken by an operator and his supervisor in the review and approval process. Verify that procedures used by the operators are properly controlled to ensure only the latest revision is used. Verify that operators are following site procedure compliance policy.

Records Reviewed:

- Y10-102 "Technical Procedure Process Control", 10/1/95
- Y10-103 "Writer's Guide for Y-12 Plant Operating Procedures", 6/25/91
- Y10-01-201 "Conduct of Drills", 7/27/95
- Y10-135 "Command Media Development at the Y-12 Plant", 2/10/95
- Y50-53-SO-031, 2/9/96, "Surveillance of Criticality Accident Alarm System for Building 9204-2E", supersedes 12/1/95; Use Category II
- Y50-53-SO-032 "Surveillance of Criticality Accident Alarm System for Building 9204-2, 2/9/96, Use Category II
- Y50-55-PT-415, 6/7/95, Operating procedure; Class III
- Y50-55-PT-409 "Operation of 100 Kv Norelco" 10/11/95, Use Category II
- Y50-55-PT-374 "Operation of 9MEV Linac 9204-2E", 2/11/96, Class II
- Y50-55-PT-402 "Operation of 300 Kv Norelco, 6/21/95, Class II
- Y70-01-150 "General Nuclear Criticality Safety Requirements", 3/15/95, Class II
- Y50-55-PT-303 "Positive Pressure Glove Boxes" 10/91/95, Use Category III
- Y70-01-150-6 "General Nuclear Criticality Safety Requirements" , 1/31/96
- Y50-55-PT-431 "Metallographic Processing of Oralloy Materials" , 2/23/96, Class II
- Y50-55-PT-415 "Vibration Test Station", 2/23/96, Use Category III
- Y50-01-B2-013 "Mop-Water and Mop-Head Disposal", 2/19/96, Use Category II
- Y50-01-B2-025 "Walk-In Ventilation Hood Operations", 1/12/96, Use Category II
- Y50-01-B2--024 "PCDAS Oven Operation for Drying Nonfissile Material" , 2/15/96, Use Category II
- "Disassembly Instructions", 2/26/96, Rev G., Use Category II
- "Radiography Testing Procedure", 9/20/95, Rev. B
- "Quality Evaluation Disassembly Procedure", 12/12/95, Rev. G
- "Follow Sheet" check lists for assembly
- Y50-51-FO-003 "Monthly and Quarterly Fire Protection Surveillances - Wet Pipe Sprinkler Systems 4, 5, 8, and 11 in Building 9204-2", 2/19/96, Use Category II,
- Y50-51-FO-005 "Monthly, Quarterly, and Annual Fire Protection Surveillances - Firecycle Sprinkler System 6 in Building 9204-2", 2/19/96, Use Category II
- Y50-55-PT-447 "Operating the Tinius Olsen 30K Machine", 10/13/95, CANCELED
- Y50-55-PT-433 "Compression Testing of Uralloy Material - 60K Machine", Class III, 2/24/96
- Y50-55-PT-437 "Tensile Testing of Various Materials", 6/1/95, Class III
- Y50-55-PT-462 "Compression Testing of Depleted Uranium/Uranium Alloys - 60K Machine", 10/2/95, Class III
- Y50-55-PT-460 "Tensile Testing of Depleted Uranium/Uranium Alloys - 60K Machine", 10/30/95, Use Category III

RA ASSESSMENT FORM 1
Procedures

- Y50-55-DI-028 "Benchmark Tools", 8/9/95
- "Product Inspection Document - Weldring Assembly", Rev. B
- Drill Guide 2-0006, Hazardous Spill Reporting and Responding Rev. A
- Y-12 Nuclear Operations, Conduct of Operations Manual, Martin Marietta Energy Systems, Inc.
- 9204-2E-95-033 "Weapon Product Definition Configuration Management", 10/13/95

Interviews Conducted:

- DSO Procedures Manager
- DSO Procedures Coordinator
- DSO Criticality Safety Coordinator
- QO Technical Manager for Procedures, Training, and Document Control
- QO Procedure Coordinator
- QO Division Procedure Coordinator
- QO Training Specialist
- QO Procedures Manager
- DSO Shift Technical Advisor
- DSO Disassembly Technician
- DSO Welder
- DSO Shift Manager
- DSO Operations Assistant
- DSO D/A Supervisor
- QO Manager
- Operations Mentor
- QO Inspection Methods Engineer
- DSO Staff Engineer
- Fire Officer
- Y12 ESAMS Administrator
- DSO Procedure Writer
- Maintenance Shift Supervisor
- QO Inspection Technologist - Mechanical Properties

Shift Performance Evolution:

- C-5 Mockup Disassembly
- Weldrings Dimensional Inspection
- Materials Testing Laboratory, Room 311; Tensile Test
- QO Radiography for Mockup Assembly
- Wet Pipe Sprinkler System 2 in Building 9204-2E Monthly and Quarterly Fire Protection Surveillance
- Drill # 2 - Hazardous Spill
- Drill # 3 - Special Drill Scenario - Injured and Contaminated Worker

Discussion of Results:

Record Reviews: Approximately thirty technical procedures applicable to the Disassembly and Storage Organization (DSO) and the Quality Organization (QO) were reviewed to assess the adequacy of the review and approval process for procedures and changes to procedures. A major effort to revise and upgrade procedures has been in place since the September 1995 revisions to Y10-102, "Technical Procedure Process Control". A significant amount of management attention was directed toward improving procedures applicable to DSO and lessons learned from the Receipt, Storage, and Shipment (RSS) restart efforts were promptly applied. These lessons learned were not immediately applied to the QO procedure upgrades and as a result the QO procedure upgrade progress is behind DSO. Additional resources to support the QO procedure upgrades were not applied until about one month before the start of this readiness assessment. A new manager of Procedures, Training, and Document Control for QO was named at the commencement of this readiness assessment. Current actions to upgrade the QO procedures are appropriate.

As a result of the procedure upgrade process, DSO identified many procedures that required revision. Forty-seven procedures have been revised. Most remaining changes are of an administrative nature. QO identified 26 procedures requiring revision. Only nine have been revised. Of the 17 procedures remaining to be revised, seven have CSA revision requirements to be implemented. Four of these address dimensional inspection procedures, and three address materials and equipment evaluations. One of the dimensional inspection procedures, Y5-55-DI-008, is listed as a resumption pre-start item in the LMES Readiness Assessment findings. This is considered an appropriate disposition for this finding. The remaining dimensional inspection procedures, Y5-55-DI-020/023/208, are scheduled to be revised by July 1996. The three materials and equipment evaluation technical procedures, Y50-55-PT-374/454/455, also involve the incorporation of CSA requirements from product specifications. The schedule for accomplishing these revisions is adequate to support resumption efforts. Continued management attention is required to ensure the schedule is met.

Some procedures reviewed were noted to contain Asterisk Rectangular Boxes to denote facility safety requirements and the use of angle brackets (< >) and bold text within the angle brackets for such features as CSAs in accordance with Change Directive Number 10-103-04, Sections VII. K.2.m and K.2.n. This marking is being correctly utilized.

A revision of Y10-102 issued in September 1995 requires a more definitive use of categorization of procedures. The change is in keeping with the definitions of Chapter 16 of the Nuclear Operations Conduct of Operations Manual. Appendix J of Y10-102 uses a similar graded definition of Use Categories ranging from accessible to the performer (Category III) and step-by-step (Category II) to near at hand to the operation, open to the page being performed, step-by-step compliance, and signoff at appropriate points (Category I). None of the procedures examined for DSO and QO were specified as Category I. The majority of

RA ASSESSMENT FORM 1
Procedures

DSO procedures are Category II. Most of the QO procedures have not yet been revised to the new requirements of Y10-102. These categorizations are appropriate, based on the hazards of the operations being conducted.

Some procedures contain warnings that do not convey the appropriate level of safety concern. For example, warnings like "Failure to evacuate personnel from the vault prior to energizing the Linac may cause serious personal injury" found in procedure Y50-55-PT-374 "Operation of 9MEV Linac 9204-2E", 2/11/96, Class II are misleading. Conversely an example of an adequate warning is found in the same procedure, "Serious injury or death may result from contact with high voltage circuits or heat producing components in the modulator. DO NOT touch...". The latter example is more in keeping with Y10-103, Section VII, I.

Improved procedure history files and more adequate records of verification and validations are noted improvements to the procedures program. The history files for recent revisions to procedures for QO indicate that the revision process is being conducted in accordance with Y10-102 with records of verification and validation and USQ screens being a part of the process. In the document review, the recently revised procedures (under Y10-102) examined for CSA references were adequate where such references were appropriate.

The verification and validation process has been revised in accordance with Y10-102 and is being effectively used. As an example, procedure Y50-55-PT-447 has been canceled as the result of the mentor/SME walkdown process. It was determined during the verification and validation process that the individual procedure was not needed. The information in this procedure was incorporated in a single procedure that combined test and machine parameters.

Some minor errors were noted in some of the procedures examined. For example, Y50-55-PT-460 contains a lined out entry that was corrected with an "ok" but was not initialed. This indicates an inattention to detail of the documentation requirements of the change process on the part of the person making the change, even if the change was not needed.

Procedure Y50-55-PT-303 "Positive Pressure Glove Boxes" is currently being revised to correct numerous LMES identified errors. The revision process should include pressure ranges for the pressure gauges and some indication of what criteria are applied to the requirement of "no deterioration or damage to gloves and exhaust boot". QO procedures personnel have indicated that the current revision of the procedure is addressing these two issues among the numerous self-identified errors in this procedure.

A Mentor Performance Indicator Measures Follow-on Report, 2/21/96, reports that implementation of DOE 5480.19, "Conduct of Operations for DOE Facilities", Chapter 16, Operations Procedures was about 60% complete for Building 9204-2E. Of the procedures examined for Building 9204-2E, CSAs were incorporated. The same approximate percentage applied to evidence that the requirements of the new revision of Y10-102 had been used.

RA ASSESSMENT FORM 1
Procedures

Long term Order 9204-2E-95-003 "Weapon Product definition Configuration Management" was reviewed for consistency with procedure requirements. The order issued instructions for the Product Engineering Transmittal process (associated with procedure releases), effective dates, and incorporation of pen-and-ink changes. It was determined that this order's instructions are consistent with current procedural requirements.

Interviews: Operators and supervisors were interviewed to assess their understanding of the procedure and procedure change process. The interviews conducted concentrated on D/A personnel but included other personnel as needed. Support personnel from maintenance and the Fire Department and the ESAMS administrator were interviewed. Local DOE representatives were also questioned during the process where needed to clarify particular points.

Not all of the interviewed D/A personnel demonstrated a good understanding of the current procedure change process using a Procedure Modification Request as designated in Y10-102, Section B. Some were not aware that steps like Validation and Verification (V&V) and Unreviewed Safety Question (USQ) screens were needed for procedure revisions. Of the three persons questioned concerning non-intent versus intent changes, all were cognizant both of the differences and the relative significance of each.

Of D/A personnel questioned regarding the procedure process (writing, revision, and use), only one had a less than adequate general understanding of the procedure process for the facility. This person occupied a peripheral position within the organization. While the position occupied was peripheral, this person should possess a deeper knowledge of the procedure process. Without exception, all of the D/A personnel interviewed had a good understanding of the concept of working copies of procedures, the mechanics of working copies, how to obtain working copies, and what to do if the copy is out of date.

All of the D/A personnel interviewed concerning procedure use were sufficiently familiar with the stop and recover requirement if difficulties are encountered with the evolution of a procedure. The requirement for this action is from Chapter 16 of the LMES Nuclear Operations Conduct of Operations Manual.

Shift Performance: Five shift evolutions were observed during the RA. The first evolution, the C-5 mockup disassembly was conducted using a supervisor as a reader and two technicians within the work area. A copy of the latest version of the procedure was used by both the supervisor/reader and the data recorder outside the work area. The evolution was conducted in a step-by-step manner as required by both the technical procedure designation, the Nuclear Operations Conduct of Operations Manual, and Y10-102. The same observations applied to the Weldrings Dimensional Inspection which was the second evolution.

An evolution of materials testing for tensile strength was conducted by QO personnel. Evolution personnel followed the procedure as required in a step-by-step manner with a reader and worker. The working copy of the procedure was

verified as current. The observer was provided a duplicate of the working copy that was stamped "Information Only" in red ink to differentiate it from the working copy being used for the evolution. This practice is assessed as adequate.

An evolution of radiography of a mockup was observed. The pre-job brief was professionally conducted and included elements of Conduct of Operations and the necessary health and safety precautions. The mockup was properly transported from the storage array and the evolution conducted in accordance with a working copy of the current procedure. The evolution was satisfactory with step-by-step adherence to the procedure.

The final evolution observed was a monthly OSR surveillance simulation for the Wet Pipe Sprinkler System 2 for Building 9204-2E. The pre-job brief was thorough and Fire Department personnel used an in-hand working copy of the procedure. The exterior valve position was verified and valve pressures in the basement noted. Fire Department personnel were knowledgeable on the use of the procedure, the need for locks and chains, and the acceptance criteria associated with the >55 psig gauge pressure referenced in the procedure appendix. The surveillance was conducted satisfactorily.

Two drills were observed. The first, the hazardous spill evolution (Drill # 2), failed to incorporate the lessons learned from previous drills into the protocol. During the pre-job brief, the Facility Senior Drill Monitor attempted to alter the written protocol for the drill because of the lack of using lessons learned. However, Y10-01-210 would not allow the affected sections of Drill Guide 2-0006, Rev. A to be revised with pen and ink changes as opposed to a complete revision. Therefore, the drill was executed as written. The special drill (Drill # 3) was conducted with no procedural problems.

Conclusion: Procedures for D/A are adequate, contain sufficient detail and properly implement the needed safety requirements. CSA requirements have not yet been fully implemented in the Quality Organization procedures. The lack of implementation of the CSA revisions has been previously identified by a LMES RA as pre-start and post-start findings. This is an appropriate disposition of the findings. The criteria for this objective have been met.

Issue(s):

o None

Reviewer: Lon Brock/Tom Donovan	Approved: John Rothrock

RA ASSESSMENT FORM 1
Safety Envelope

FUNCTIONAL AREA: SE	OBJECTIVE 1, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: There are adequate and correct safety limits for operating systems. (CORE REQUIREMENT #1)

Criteria

The Operational Safety Requirements for disassembly/assembly facilities are technically accurate and consistent with the physical facility configuration. The designated equipment and systems are present as described in the Operational Safety Requirements and the Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified. (5480.22, para 9.e, 5480.19, Ch. XVI)

Approach

Record Review: Review several safety requirements and decide if the associated operating, and maintenance procedures correctly set up the limiting conditions. Verify these limits are specified in sufficient detail and rigor to allow unambiguous measurements (clear pass/fail criteria). Verify that the Operational Safety Requirements for the facilities are technically accurate and consistent with the physical facility configuration. Verify compliance with the applicable Operational Safety Requirements.

Interviews: Interview a cross section of management, operations, and maintenance personnel to ensure that personnel are knowledgeable in the significance of the safety limits and have a general knowledge of their basis.

Shift Performance: Observe the performance of surveillances and operator rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified, and that procedures adequately provide for prompt corrective action and communications upon the identification of an out of normal condition. Verify safety system configurations through walk downs. Verify that the designated equipment and systems are present as described in the Operational Safety Requirements and that the Operational Safety Requirements can be technically accomplished.

Records Reviewed:

- Y/ENG/SAD-021, System Analysis Document, Criticality Accident Alarm System, dtd 6/10/94

- Y/TS-816 FSAR Assembly, Disassembly & Warehouse Project dtd 9/86
- Disassembly & Assembly Criticality Safety Approvals
- System Analysis Document, Criticality Accident Alarm System, Y/ENG/SAD-021, 6/15/94
- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Revision 1, dtd 9/18/95
- Y50-01-B2-013 "Mop Water & Mop Head Disposal", dtd 2/19/96
- Y50-01-B2-025 "Walk-In Ventilation Hood Operation", dtd 1/12/96
- Y50-01-B2-027 "Portable Fissile Vacuum Cleaner Operation", dtd 1/18/96
- Y70-66-CS-330 "Nuclear Criticality Safety Department External Monitoring Program" dtd 11/22/95
- Y50-53-SO-031 "Surveillance of Criticality Accident Alarm System for Building 9204-2E, dtd 2/09/96
- Y70-01-004 ""Annual Surveillance of Fissile Material Activities" dtd 4/27/95
- ANSI/ANS-8.3-1986, "Criticality Accident Alarm System"
- ORO, "Fire Prevention and Protection Policies", 1989
- ORO Memorandum Spence to Gustafson "Interpretation Guidance for Operational Safety Requirement OSR Y-TS-1314", dtd 9/21/95
- USQD screening records
- Internal Memo, Radle to Wasilko, "Annual Operational Safety Requirements Review", dtd 5/25/95

Interviews Conducted:

- System Manager, Protective Services (Fire System)
- D/A Operations Manager
- D/A Shift Technical Advisor
- D/A Supervisor of Assembly Operators
- D/A Assembly Person
- CAAS Systems Expert, PSS
- Control Center Assistant, PSS
- D/A Lead Engineer
- Fire Protection Inspector (2)
- Fire Officer
- Fire Chief
- Quality Engineer, Materials & Evaluation Department
- D/A Radiography Supervisor
- Maintenance Supervisor (electrical), Facility Maintenance Organization
- Maintenance Shift Supervisor, Power Distribution
- Fire Protection Engineer

Shift Performance Evolution:

- Facility Tour
- Walkdown of CSAs B2E-14 and B2E-17
- CAAS Quarterly Alarm System Coverage Test
- Fire Sprinkler System Monthly Valve Position and Supply Pressure Test
- Fire System Verification

Discussion of Results:

Record Review: The D/A safety basis documentation was reviewed to determine the required safety envelope and to assess the adequacy of the D/A OSRs. The D/A safety basis documentation consists of a variety of safety analysis documents, hazards screenings, and safety studies. The existing SARs were developed on a functional level; they address specific programs at the Y-12 Site. The SARs were not developed at a facility level to address all activities performed in each of the D/A facilities. The safety basis documentation is supplemented by a rigorous Criticality Safety Approval (CSA) program. CSAs are documents initiated by D/A Operations to request approval from the Nuclear Criticality Safety Department (NCSD) to perform administrative and physical changes within the D/A facility. The OSRs for D/A contain the LCOs and surveillance requirements for the two D/A safety systems, the criticality accident alarm system (CAAS) and the sprinkler system. The OSRs also describe administrative controls and require the use of CSAs.

The OSR administrative controls require an Unreviewed Safety Question Determination (USQD) Program. All CSAs reviewed included adequate documentation of the USQD screening process. One of the safety basis documents concerning storage resulted from a positive USQD screening. The storage document was approved by DOE. The D/A USQD program is adequate. However, the USQD process relies mainly on CSAs and a well qualified engineering staff rather than on an Order compliant SAR. The lack of Order compliant SAR data could make future USQD screening process decisions difficult, especially for new staff who lack the benefit of involvement in all past engineering decisions.

The OSRs also require a Nuclear Criticality Safety Program to ensure comprehensive review of Fissile Material Activities and ensure nuclear criticality safety. An OSR surveillance requirement requires an annual verification of compliance with all CSAs. The Facility Operations group performs a self-assessment of all active CSAs on an annual basis. The program is formally documented. Records of the program indicate the program is current and discrepancies are documented and tracked to closure. The NCSD has implemented an external monitoring program which verifies CSA compliance through the performance of CSA walkdowns which consist of Criticality Engineers performing audits of CSAs in conjunction with D/A Operations personnel. The Plant Criticality Safety Committee conducts an annual review of the Nuclear Criticality Safety Program as required by the OSRs.

Record review indicated D/A Operations personnel annually verify that the OSRs remain current as required by the OSR Administrative Controls.

A review of the safety basis documentation describing the CAAS revealed a discrepancy. The configuration of the CAAS in the D/A facilities and the surveillance testing requirements used to confirm operability of the

system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (SE1-1). This is due to modification of the CAAS without updating the System Analysis Document. The CAAS surveillances required by the current OSRs are adequate to demonstrate continuous operability of the system.

The OSRs address other safety limits by requiring the use of Criticality Safety Approvals (CSAs). The CSAs are used as source or reference documents in the generation of D/A operating procedures. All D/A CSAs were reviewed. The operating limits established in the CSAs were consistent with the OSRs and the safety basis documentation. The designated equipment and systems are present as described in the Operational Safety Requirements and the CSAs with one exception. The alarm signal for the CAAS in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the OSRs. An air handling unit in 9204-2E that is entered twice a shift has a noise level which makes the CAAS inaudible and there are no CAAS visual signals in the unit. Following identification of this deficiency, a letter was issued by the Y-12 DOE Site Office on September 21, 1995 to provide temporary guidance for entry into the air handler until engineering evaluations could be performed to determine the adequate corrective action for this condition. No corrective action has been identified and evaluated. The approved compensatory measure which relies on continuous visual monitoring of a portable radiation detector while personnel are in the air handler is unsatisfactory for use on a continuous basis (SE1-2).

Three D/A procedures were reviewed to check compliance with all applicable CSAs. The procedures reflected all active CSA requirements.

Interviews: Operations, management and maintenance personnel were interviewed as well as members of the NCSD, Plant Criticality Safety Committee, Fire Department and the Plant Shift Superintendent organization. Interview topics included D/A safety systems, USQD process, CSA compliance, procedure compliance, work control, lock out/tag out, and work practices. All personnel interviewed were knowledgeable of the nuclear hazards associated with the facility. All D/A personnel demonstrated adequate knowledge of the facility's safety systems, CSAs, and the use of procedures. All personnel included, without prompting, the USQD process in their discussions of administrative and physical changes to the facility. The individuals' level of knowledge of the USQD process was commensurate with their duties.

Shift Performance Evolution: A walkdown of two CSAs was observed. During the walkdown, the NCSD Criticality Engineer performing the check and the Facility Support Manager demonstrated adequate knowledge of the facility and the safety requirements prescribed by the CSAs. No discrepancies were noted.

RA ASSESSMENT FORM 1
Safety Envelope

The CAAS Quarterly Alarm System Coverage test was observed. The test results indicated the failure of several speakers. Although several speakers did not operate, the required sound coverage was verified.

Fire Sprinkler System Monthly Valve Position and Supply Pressure tests were observed with no deficiencies. A fire system verification was observed. This involved a walkdown of the fire system using approved engineering drawings. The drawings reflected the actual condition of the system.

Operational Safety Requirements can be technically accomplished. Compliance with the applicable Operational Safety Requirements are verified through surveillances of the safety systems and annual walkdowns of all active CSAs.

Conclusion:

The criteria of this objective have not been met.

Issue(s):

- The configuration of the Criticality Accident Alarm System (CAAS) in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (OSRs). (SE1-1)

- The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs). (SE1-2)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 1	Finding: X Observ.	Pre-Start Post-Start X	Issue No.: SE1-1 Rev. No.: 1 Date: 3/4/96

ISSUE: The configuration of the Criticality Accident Alarm System (CAAS) in the D/A facilities and the surveillance testing requirements used to confirm operability of the system do not match the System Analysis Document referenced as the system's technical basis in the Operational Safety Requirements (OSRs).

REQUIREMENT: The designated equipment and systems are presented as described in the Operational Safety Requirements.

REFERENCE(S):
DOE Order 5480.22B, para 9.3, Technical Safety Requirements, 2/28/94

DISCUSSION: During the past several years, the CAAS in 9204/9204-2E has been modified to improve the operability and reliability of the system. These modifications have primarily been associated with providing an uninterruptable power supply to the instrumentation and integrating the Emergency Notification System with the CAAS. Additionally, the alarm setpoint of the system has been lowered to increase the range of coverage for each detector station. These improvements are not reflected in the System Safety Analysis Document used as the basis for the Operational Safety Requirements (OSRs). This document also specifies the OSR surveillance requirements, based on analyzed reliability data for the system. However, some of the surveillance requirements in the manual, including testing of a response to a loss of power and speaker decibel output, are no longer required by the OSRs, apparently due to the system modifications.

CONCLUSION: The configuration and surveillance testing of the CAAS in D/A facilities do not match the System Analysis Document referenced as the system's technical basis in the OSRs.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 1	Finding X Observ.	Pre-Start X Post-Start	Issue No.: SE1-2 Rev. No.: 1 Date: 3/4/96

ISSUE: The alarm signal for the Criticality Accident Alarm System (CAAS) in the 9204-2E Material Access Area (MAA) does not provide an audible or visual warning in all areas of the 9204-2E Facility as required by the Operational Safety Requirements (OSRs).

REQUIREMENT: A Criticality Accident Alarm System shall be provided for the Material Access Area in 9204-2E

REFERENCE(S): Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Y/TS-1314, LCO 3.1.2

DISCUSSION: As required by the 9204-2E OSRs, the CAAS must be fully operable in 9204-2E to provide an alarm signal for immediate evaluation purposes. The alarm signal can either be audible or visual and must cover all areas within system's zone of coverage.

During a surveillance of the CAAS in September 1995, it was noted that there is no audible or visual alarm in the large air handling unit located on the third floor of 9204-2E. This air handling unit is within the zone of coverage for the 9204-2E MAA CAAS. Due to the high noise level inside the unit while the fans are running, other CAAS alarms on the third floor of 9204-2E can not be heard. The unit must be entered twice per shift for equipment checks and adjustments.

Following identification of this deficiency, a letter was issued by the Y-12 DOE Site Office on September 21, 1995 to provide temporary guidance for entry into the air handler until engineering evaluations could be performed to determine the adequate corrective action for this condition. However, no corrective action has been identified. Additionally, the temporary guidance for entry is inadequate as a long term action due to the reliance on an operator continuously monitoring a portable radiation instrument as the sole means of detecting a criticality.

An adequate corrective action for the lack of CAAS alarm coverage in the 9204-2E air handling unit has not been determined. The 9204-2E OSRs do not provide clear guidance to allow routine entry to areas with no CAAS alarm. Condition C of LCO 3.1.2 requires immediate evacuation of areas with inoperable alarm signal coverage and restoration of alarm signal capability within 24 hours.

CONCLUSION: The 9204-2E MAA CAAS does not provide alarm coverage in the 9204-2E air handling unit, which is frequently entered during routine facility operations. Inadequate resolution of this condition has resulted

in no alarm coverage for several months. However, the 9204-2E OSRs do not allow routine entry to areas with inadequate alarm coverage. This is a pre-start finding due to the inadequate alarm coverage in the routinely entered air handling unit.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Safety Envelope

FUNCTIONAL AREA: SE	OBJECTIVE 2, REV. — DATE: March 4, 1996	CRITERIA MET	
		YES X	NO —

OBJECTIVE: A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety-related process systems and safety-related utility systems. **(CORE REQUIREMENT #5)**

Criteria

Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures. The facility is in compliance with these requirements. (5480.22, para 9, 10, Attachment I, Background, 5480.23, para 8, Attachment I, Section 4)

Note: The scope of the Readiness Assessment does not include an assessment of the maintenance Recall-A and calibration programs and procedures themselves, but will verify entry of applicable systems in the appropriate Recall/calibration program.

Approach

Record Review: Review completed periodic condition and operability reconfirmations and verify they have been performed according to the schedule and requirements of the Operational Safety Requirements and/or Criticality Safety Approvals. Through review of these records, verify the status of the safety systems and safety-related process system components in the maintenance Recall-A program and other inspection and calibrations programs are maintained and operational impacts of status changes are understood.

Interviews: Interview personnel associated with the program for periodic condition and operability reconfirmations. Also, interview personnel who manage the safety systems and safety-related process system components in the maintenance Recall-A program, other inspection, and calibration programs to determine how well they understand and use these programs.

Shift Performance: Walk down one or more safety-related systems to assess operability and condition. Ensure that the status is consistent with the condition specified in the building's vital safety system status board (or other method of status control). Observe the conduct of a periodic condition and operability reconfirmation.

RA ASSESSMENT FORM 1
Safety Envelope

Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, Rev. 1, 9/18/95
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for 9204-2E, 2/9/96
- Y50-51-FO-003, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler Systems 4, 5, 8, and 11 in Building 9204-2, 2/19/96
- Y50-50-304, Monthly/Quarterly Building Inspections, 2/14/93
- Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler System 6 in Building 9204-2, 2/19/96
- Y50-51-FO-006, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler Systems 1 and 4 in Building 9204-2E
- Y/TS-1407, Interim System Description Document for the Y-12 Plant Criticality Accident Alarm System, Rev. 0, 9/21/95
- Y/ENG/SAD-021, System Analysis Document, Criticality Accident Alarm System, June 1994
- Completed Annual Preventive Maintenance Forms for GA-6 NMC Monitors, Appendix A of Y50-35-77-024 for 8/5/95, 8/4/95, 8/18/95
- Completed Radiation Detector Annual Preventive Maintenance Checklists, Appendix A of Y50-35-MD-3100 for 11/13/95, 11/9/95, 12/4/95, 12/6/95, 11/22/95, 11/17/95
- Completed Calibration Records for Fire Protection System Supply/Pressure Gauges, 8/11/95, 8/9/95
- Completed Records for Monthly, Quarterly and Annual Surveillances of Fire Protection Systems in 9204-2 and 9204-2E
- Completed Records for Monthly and Quarterly Surveillances of Criticality Accident Alarm Systems in 9204-2 and 9204-2E
- Criticality Accident Alarm System Surveillance/Test Schedule, January 5, 1996
- Daily Report for 9204-2E, Surveillance Status, February 19, 1996

Interviews Conducted:

- Site Operations Center Department Head
- Two Plant Shift Superintendents
- D/A Operations Manager
- Two D/A Shift Technical Advisors
- Fire Chief

Shift Performance Evolution:

- Quarterly CAAS surveillance
- Monthly fire protection system surveillance

Discussion of Results:

Record Review: A documented program is in place in the D/A facilities to periodically confirm the condition and operability of safety significant systems as required by the Operational Safety Requirements (OSRs). There are no overdue OSR surveillances. The surveillances on the Criticality Accident Alarm System (CAAS) and Fire Protection System are performed by personnel from the D/A Organization, Plant Shift Superintendent's Office, Facility Maintenance Organization, and Fire Department. Additional support organizations are used for specific aspects of the testing. The Operations Manager for D/A approves the performance of each surveillance.

A surveillance tracking system is maintained in the D/A facilities. This system consists of a list of the surveillance requirements for the D/A facilities, the dates the surveillance were last performed, and the dates the surveillances are due next. These lists were reviewed and signed by the Operations Manager or Shift Manager daily. All of the required surveillance requirements were included on the list and all scheduled due dates were appropriate.

Several completed surveillance procedures and checklists for the fire protection system and CAAS were reviewed to determine if the completion dates matched the dates on the surveillance tracking list. No discrepancies were noted. All surveillances were conducted within the required periodicity. The completed fire protection system surveillances were reviewed for accuracy by the Y-12 Fire Chief and the D/A Operations Manager, and the CAAS surveillances were reviewed by the test coordinator from the Plant Shift Superintendent's office and the D/A Operations Manager.

The Plant Shift Superintendent's Office and the Fire Department also maintain their own tracking systems for the equipment on which they perform OSR surveillances. Both systems are used to schedule when the next surveillances should be performed so they can be placed on each building's plan of the day. A review of the CAAS and fire protection systems indicated that the OSR surveillances schedules tracked by these organizations matched the information in the D/A tracking systems. However, one non-OSR preventive maintenance item, a fire protection system heat detector operational test, was not included in the Fire Department's scheduling system. A check of maintenance records indicated that all detectors had been tested within the past year, and fire department personnel were aware of the need to test the detectors.

The system status board in 9204-2E was reviewed. It accurately reflected the status of the CAAS and fire protection systems.

Interviews: Interviews with two Plant Shift Superintendents, the D/A Operations Manager, two D/A Shift Technical Advisors, and surveillance testing personnel indicated that each had a satisfactory knowledge of

their responsibilities for ensuring that surveillance testing is performed within the required periodicity and using approved procedures.

Shift Performance: Monthly fire protection and quarterly criticality accident alarm system surveillances were observed. The results of observations are described in SE-4.

Conclusion:

The criteria for this objective have been met.

Issue(s):

None

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Safety Envelope

FUNCTIONAL AREA: SE	OBJECTIVE 3, REV. — DATE: March 4, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: Safety system and other instruments which monitor Technical Safety Requirements are monitored for calibration. **(CORE REQUIREMENT #5).**

Criteria

Calibration has been properly performed at the required frequency for all safety systems. The calibration status of the safety systems and safety-related process systems components meets operational requirements. (Note that the Oak Ridge Y-12 Site has Operational Safety Requirements instead of Technical Safety Requirements.) (5480.22, para 9, 10).

Approach

Record Review: Review the calibration tracking system to assess the mechanism used for scheduling, performing, reporting results and dispositioning deficiencies. Review the safety systems and safety-related process system components to determine if each safety system has an adequate calibration process. Verify that the current status supports the Oak Ridge Y-12 Site Operational Safety Requirements.

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

Shift Performance: Observe performance of the safety system calibration process to assess operability and condition, and that the status is consistent with the condition specified for safety system operation.

Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area
- Y50-53-SO-032, Surveillance of Criticality Accident Alarm System for Building 9204-2
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for Building 9204-2E
- NFPA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems, 1992
- Gage Calibration Work Packages for Fire Protection System Pressure Gages in 9204-2E and 9204-2
- Monthly, Quarterly, and Annual Fire Protection Surveillance Records

- Monthly and Quarterly CAAS Surveillance Records
- CAAS Detector Annual Preventive Maintenance Data Packages for 9204-2 and 9204-2E
- Daily Report for 9204-2E, February 26, 1996
- CAAS Testing Schedule, January 5, 1996

Interviews Conducted:

- Fire Protection Maintenance Coordinator
- Fire Protection Engineer
- Fire Chief
- CAAS System Engineer
- Maintenance Supervisor (CAAS)

Shift Performance Evolution:

Walkdown of Fire Protection and Criticality Accident Alarm Systems

Discussion of Results:

Record Review: The review of the Operational Safety Requirements (OSRs), calibration work packages, and the CAAS and fire protection system surveillance records indicates that the safety systems and instruments that monitor OSRs are properly monitored for calibration.

The Fire Department demonstrated a satisfactory program for scheduling and implementing their calibration program. A review of the calibration program for the fire protection system indicates that the gauges used to monitor the water supply pressure for each fire suppression system are calibrated on a periodic basis. These gauges are used to verify system pressure during the monthly fire protection system surveillance required by the OSRs. The calibration records indicated satisfactory results for all gauges monitored.

The operability of the heat detectors used to activate the fire cycle sprinkler systems was verified to have been confirmed using a heat lamp within the past year. Operability of the fire cycle systems requires proper operation of these heat detectors. The detectors sense the high temperature of a fire and open an isolation valve, initiating water flow to the sprinklers. Additionally, the annual full-flow system trip test fully activates the heat detector electrical circuitry and initiates water flow through the fire cycle system.

A review of the calibration program for the CAAS indicates that the monthly and quarterly surveillances performed on the system, along with the annual maintenance on the CAAS detectors, verify the operability and calibration of the system. The monthly and quarterly surveillances use a test source to verify the response of the system to radiation. Annually, each detector is removed from the system and tested using a detailed

maintenance procedure. The annual maintenance verifies proper operation of the detector and includes a three point alignment to ensure proper response to radiation. The detector's alarm trip point is adjusted to 30 mR/hr. A calibrated radiation test source is used to perform the alignment. The alignment checklist includes a verification of the detector's condition and response prior to any adjustments or repairs. These checks provide evidence of the detector's as found condition in the facility. However, there are no clear pass/fail criteria for these checks. There is also no feedback mechanism to identify detector performance trends based on the annual maintenance. A failure of these checks would indicate that more frequent maintenance is necessary to ensure operability. Incorporation of these items would provide additional data to demonstrate the reliability of the CAAS. (SE3-1) The surveillance and annual maintenance records indicated that there is a satisfactory method for scheduling and tracking required testing.

Interviews: Interviews with maintenance and calibration personnel indicated that personnel are aware of their responsibilities relative to the calibration of safety systems and instrumentation which monitor Operational Safety Requirements.

Shift Performance: The calibration status of the fire protection and CAAS were observed during walkdowns of these systems in D/A facilities. The instrumentation was found to be labeled as calibrated and their identification markings matched the administrative calibration records.

Conclusion:

The criteria for this objective have been met.

Issue(s):

- The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector. (SE3-1)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 3	Finding Observ. X	Pre-Start Post-Start	Issue No.: SE3-1 Rev. No.: 0 Date: 3/4/96

ISSUE: The CAAS annual surveillance procedure does not include pass/fail criteria for the as found condition of the detector.

REQUIREMENT: All test and corrective actions shall be recorded in a logbook maintained for each system. This record will provide information on the system operability and help to identify sources of failure.

REFERENCE(S): ANSI/ANS Standard 8.3, American National Standard Criticality Accident Alarm System, Section 6.7

DISCUSSION: Annually, each CAAS detector is removed from the system and tested using a detailed maintenance procedure. The annual maintenance verifies proper operation of the detector and includes a three point alignment to ensure proper response to radiation. The alignment checklist includes a verification of the detector's condition and response prior to any adjustments or repairs. These checks provide evidence of the detector's as found condition in the facility. However, there are no clear pass/fail criteria for these checks. There is also no feedback mechanism to identify detector performance trends based on the annual maintenance. A review of recently completed annual maintenance records indicated that in all cases but one, the sensitivity of the detector dropped since the last routine alignment. Although all the detectors remained sensitive enough to detect the minimum accident of concern, the lack of a pass/fail verification could fail to identify an unacceptable condition in the future. A failure of these checks could indicate the need for more frequent maintenance or other actions. Incorporation of these items would provide additional data to demonstrate the reliability of the CAAS.

CONCLUSION: The annual maintenance on the CAAS detectors does not provide a clear pass/fail criteria to evaluate the as found condition of the detectors. There is no feedback mechanism to identify detector performance trends based on the annual maintenance.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Safety Envelope

FUNCTIONAL AREA: SE	OBJECTIVE 4, REV. __ DATE: March 4, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: All safety and safety-related utility systems are currently operational and in a satisfactory condition. **(CORE REQUIREMENT #5)**

Criteria

The operational status and condition has been determined by satisfactory evaluation of the calibration and surveillance status for the safety systems. (5480.22, para 9, and 10)

Approach

Record Review: Review the safety systems tracking program to assess the mechanism used for monitoring, testing, reporting testing results and dispositioning deficiencies. Review the safety systems to decide if safety system operations are within the limits defined by the Operational Safety Requirements and Criticality Safety Approvals. Review outstanding safety system and safety-related process system deficiencies identified through the corrective maintenance program, preventive maintenance program, test program, or other reporting processes to assess the condition of facility systems to support safe operations.

Interviews; Interview personnel associated with the safety system operation to assess their understanding of program requirements and responsibilities. Interview operations and management personnel to determine if the safety system's status is effective for safe operations.

Shift Performance: Walk down and observe the performance of safety systems to assess operability and condition, and if the status is consistent with the condition specified for safe operation.

Records Reviewed:

- Y/TS-1314, Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area, 9/18/95
- Y50-53-SO-031, Surveillance of Criticality Accident Alarm System for Building 9204-2E, 2/26/95
- Y50-53-SO-032, Surveillance of Criticality Accident Alarm System for Building 9204-2, 2/9/96
- Y50-51-FO-004, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler System 2 in Building 9204-2E, 2/19/96
- Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection

Surveillances-Fire cycle Sprinkler Systems 1 and 4 Building 9204-2E, 2/19/96
- o Y50-51-FO-005, Monthly, Quarterly, and Annual Fire Protection Surveillances-Fire cycle Sprinkler System 6 in Building 9204-2, 2/19/96
- o Y50-51-FO-003, Monthly and Quarterly Fire Protection Surveillances-Wet Pipe Sprinkler Systems 4, 5, 8, 11, 2/19/96
- o Surveillance Instructions Operator Aid for Quarterly Test of the CAAS Using the Clarion Horn, no date
- o Criticality Accident Alarm Testing Schedule, January 5, 1996
- o Y50-35-MD-3100, GA-6 Radiation Detectors Annual Preventive Maintenance, 8/12/95
- o Daily Report for 9204-2E, February 26, 1995

Interviews Conducted:

- o Fire Department Chief
- o D/A Operations Manager
- o Two Shift Technical Advisors
- o Fire System Engineer
- o Fire Protection System Expert
- o CAAS System Expert
- o CAAS Maintenance Supervisor

Shift Performance Evolution:

- o Walkdown of CAAS in 9204-2E
- o Walkdown of fire protection system in 9204-2E
- o Monthly surveillance of fire protection system in 9204-2E
- o Quarterly surveillance of CAAS in 9204-2E

Discussion of Results:

Record Review: The records demonstrating operability of the safety significant systems for Disassembly and Assembly (D/A) facilities were reviewed. These include the Criticality Accident Alarm System (CAAS) and the Fire Protection Systems. Surveillance records were reviewed and indicated that both systems are operational.

The CAAS records indicated that the operability of the system is tracked by D/A operations personnel and the Plant Shift Superintendent (PSS). The CAAS is continuously monitored at the Site Operations Center. Maintenance on the systems is conducted by the Facility Maintenance Organization (FMO). Records of monthly and quarterly surveillances required by the Operational Safety Requirements (OSRs) indicated satisfactory performance of the periodic tests. The annual calibration records of each CAAS detector provided evidence that the system is adequately aligned to respond to criticality accidents.

RA ASSESSMENT FORM 1
Safety Envelope

The surveillance records for the fire protection system indicated that the system is fully operable. The satisfactory performance of monthly, quarterly, and annual testing of the wet pipe and pre-action systems demonstrated operability.

Interviews: FMO and Fire Department personnel responsible for the performance of maintenance on the safety significant systems were interviewed. They understood the importance of the systems and demonstrated satisfactory knowledge of maintenance and testing requirements. They were knowledgeable of the operability requirements described in the Limiting Conditions for Operation (LCO) for each system.

The D/A Operations Manager and two Shift Technical Advisors were interviewed. These individuals understood the importance of the safety significant systems and had a detailed knowledge of the LCO requirements. They were thoroughly familiar with the operation of the CAAS and fire protection systems in the D/A facilities. They described satisfactory controls for activities that could potentially impact the operability of the systems.

Shift Performance: The performance of a monthly surveillance on the fire protection system was observed. A Pre-job brief was conducted for the evolution and all personnel involved in the activity attended. The surveillance was conducted properly and with satisfactory results. Although the surveillance was performed correctly, minor procedural compliance deficiencies were noted.

The performance of a quarterly surveillance on the CAAS was observed. A thorough pre-job brief was conducted with all personnel. The surveillance was conducted properly and with satisfactory results. However, minor deficiencies were noted in procedural compliance when maintenance personnel activated the CAAS alarm at the detectors. Also, one operator was observed not continuously monitoring the hand held radiation instrument required by the procedure. Although the CAAS alarm signal was fully audible in all areas, some alarm horns were found to be inoperable by the D/A personnel. The D/A personnel demonstrated a satisfactory method for tracking these discrepancies and planning corrective actions.

Portions of the CAAS and fire protection system in 9204-2E were walked down to assess the operability of the system and to ensure the status was consistent with the LCO requirements. For the fire protection system, recently prepared engineering drawings were used as a reference during the walkdown and compared to the as found conditions. The walkdown indicated the system was fully operable and satisfied the requirements of the LCO. However, some valves on the inlet manifold to 9204-2E were found to lack identification. The configuration of portions of the CAAS were also walked down. In all cases the system was operable and consistent with the LCO requirements.

RA ASSESSMENT FORM 1
Safety Envelope

Conclusion: The criteria for this objective have been met.

Issue(s):

none

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Safety Envelope

FUNCTIONAL AREA: SE	OBJECTIVE 5, REV. 1 DATE: March 4, 1996	CRITERIA MET	
		YES X	NO

OBJECTIVE: A baseline compliance status review of Department of Energy Orders 5480.22 and 5480.23 has been performed. Noncompliance items have been addressed. (CORE REQUIREMENT #7)

Criteria

All noncompliance issues are adequately addressed by Department of Energy approved Compliance Schedule Agreement or exemptions. The Compliance Schedule Agreements include an adequate technical basis and schedule for attaining compliance. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable Compliance Schedule Agreements and Request for Approvals, exemptions, and compensatory measures. For identified Requests for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the noncompliance(s) and actions necessary to fully carry out the order requirements along with any interim compensatory measures. This includes both the site-level programmatic and facility-level compliance and adherence-based assessments.

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

Records Reviewed:

- Order Compliance Package for DOE Order 5480.22, "Technical Safety Requirements"
- Order Compliance Package for DOE Order 5480.23, "Nuclear Safety Analysis Reports"
- MMES/Y-12-DOE5480.22-CSA-80C, Request for Approval, 8/24/95
- LMES/Y-12-DOE-5480.23-CSA-95A, Request for Approval, 1/5/96
- MMES/Y-12-DOE-5480.23-CSA-132, Request for Approval, 5/15/95

RA ASSESSMENT FORM 1
Safety Envelope

Interviews Conducted:

- o Facility Safety Manager
- o Two Systems Engineers
- o Facility Safety Engineer

Shift Performance:

- o None

Discussion of Results:

Record Review: The baseline compliance status of DOE Orders 5480.22 and 5480.23 were reviewed. Order Compliance packages indicate that D/A facilities are not in compliance with these DOE Orders. Although the D/A facilities do have Operational Safety Requirements (OSRs) that place appropriate limits and controls on activates, the D/A facilities do not have approved Safety Analysis Reports (SARs) or Technical Safety Requirements (TSRs) that fully comply with DOE Orders 5480.22 and 5480.23. The OSRs are based upon a variety of older safety analysis documents, hazards screenings, safety studies, and engineering judgement. The existing SARs were developed on a functional level, and address specific programs at the Y-12 Site. The SARs were not developed at a facility level to address all activities performed in each of the D/A facilities. A Safety Analysis Report Upgrade Program was implemented to improve the technical content of the SARs and develop TSRs. The schedule for completion of SARUP has changed several times due to programmatic changes at Y-12, resulting in delays in completing SARs and TSRs. A revised implementation plan for SARUP has recently been submitted to DOE for approval. Requests for Approval (RFA) related to the noncompliances with these DOE Orders have been developed and approved.

RFA MMES/Y-12-DOE-5480.22-CSA-80C requests approval for the noncompliance with the Technical Safety Requirements (TSRs). Since nuclear activities at the Y-12 Plant were placed in stand down in September 1994, the RFA commits to developing Operational Safety Requirements (OSRs) for facilities that perform Category 2 fissile operations prior to restart. However, the RFA does not clearly address how the D/A facilities will develop TSRs that are fully compliant with the requirements of DOE Order 5480.22. The completion of the corrective actions in the current RFA will not result in approved TSRs. (SE5-1)

Lockheed Martin Energy Systems, Inc. (LMES) has prepared Request for Approval (RFA) LMES/Y-12-DOE-5480.23-CSA-95A to address the noncompliance with DOE 5480.23. This RFA provides a schedule for completion of the Safety Analysis Upgrade Program (SARUP). Additionally, it commits to preparation of Basis of Interim Operation (BIO) documents for the D/A facilities which will be used as the safety bases while final SARs are being developed. These BIOs contain qualitative safety analyses for the

D/A facilities and have been submitted to DOE for approval.

Interviews: Interviews with the Manager of Facility Safety and facility safety engineers indicated that they are aware of the noncompliances in SARs and TSRs.

Shift Performance: There are no operational compensatory measures associated with the noncompliances with DOE Orders 5480.22 and 5480.23. Activities are conducted following the approved OSRs and safety basis documents.

Conclusion: The Safety Analysis Upgrade Program at Y-12 has been implemented to address the noncompliances with DOE Orders 5480.22 and 5480.23. However, the RFA for DOE Order 5480.22 does not provide actions or a schedule to resolve the order noncompliances. The criteria for this objective have been met.

Issue(s):

- The D/A facilities do not have Technical Safety Requirements (TSRs) that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions and schedule to develop TSRs. (SE5-1)

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA DEFICIENCY FORM 2
Safety Envelope

Functional Area: SE	Objective No.: 5	Finding X Observ.	Pre-Start Post-Start X	Issue No.: SE5-1 Rev. No.: 2 Date: 3/4/96

ISSUE: The D/A facilities do not have Technical Safety Requirements (TSRs) that are fully compliant with DOE Order 5480.22. The Request for Approval that addresses this noncompliance does not clearly specify the actions and schedule to develop TSRs.

REQUIREMENT: All noncompliance issues are adequately addressed by Department of Energy approved Request for Approvals or exemptions. The Requests for Approval include an adequate technical basis and schedule for attaining compliance.

REFERENCE(S): Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction.

DISCUSSION: The D/A facilities have Operational Safety Requirements (OSRs) that appropriately specify the Limiting Conditions for Operation (LCOs) and administrative programs necessary to safely control the D/A activities. However, the D/A facilities do not have approved TSRs or Safety Analysis Reports (SARs) which fully comply with DOE Orders 5480.22 and 5480.23. The Y-12 Plant implemented the Safety Analysis Report Upgrade Program (SARUP) to improve the content of the SARs and develop TSRs. The SARUP schedule has been changed several times, resulting in SAR and TSR development delays. A revised implementation plan for SARUP was recently submitted to DOE for approval. Requests for Approval (RFA) have been issued and approved that address these order noncompliances. However, the RFA for DOE Order 5480.22 does not clearly provide actions or a schedule for developing TSRs to meet the order requirements.

CONCLUSION: The D/A Facilities do not have approved TSRs that comply with DOE Order 5480.22. The approved Request for Approval does not provide a clear plan or schedule for development of TSRs. SARUP has been implemented to prepare TSRs at Y-12, but the schedule has been delayed. Since the D/A facilities currently have adequate OSRs, this is a post start issue.

Reviewer: John Conlon/Ken Kellar	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 1, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES__	NO X

OBJECTIVE: Training and qualification programs for Disassembly/Assembly operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed. **(CORE REQUIREMENT #2)**

Criteria

Procedures are developed and implemented that describe the qualification process, including examination requirements for qualification and/or certification of disassembly/assembly operations, quality, and technical support personnel. Procedures describing requalification, maintenance of proficiency, granting of exceptions and extensions, alternatives to educational requirements, remediation and evaluations by facility and training management are developed and implemented. (5480.20A, Ch. I, para 7)

Goals, objectives, and plans are in place to describe the implementation of the training and qualification programs.

Training programs incorporate formal on-the-job and hands-on evaluation of skills.

The qualification program includes requirements for successful completion of written, oral, and operational evaluations for operations and maintenance personnel.

Procedures are in place to ensure that non-resident personnel will receive the proper training for unescorted access to disassembly/assembly facilities and are current in their training requirements.

Approach

Record Review: Review training and qualification records for disassembly/assembly operations, quality, and technical support personnel, including results of written, oral and operational evaluations, to ensure the training program is being formally administered and controlled.

Review training records to ensure they are maintained in an auditable manner and support management information needs by providing required data on each individual's training participation, performance, and qualification/certification.

RA ASSESSMENT FORM 1
Training

Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the evaluation/self assessment program for involvement by facility and training management in program, instructor (classroom and on-the-job), and training materials assessment.

Review the continuing and remedial training program for adequacy.

Review the written goals and objectives related to the implementation of the training and qualification process and ensure they are documented in strategic plans, mission statement and that the goals and objectives adequately address the current issues that are important to both Department of Energy and contractor management.

Interviews: Interview training personnel to decide if they have sufficient experience and qualifications for assessing disassembly/assembly operations, quality, and technical support personnel.

Shift Performance: Attend oral or operational evaluations of operator, supervisor, or operations support personnel. Verify that personnel demonstrate knowledge of activities and requirements that were included in their training program. Evaluate an initial or continuing training classroom presentation or field training activity for technical and administrative adequacy. Evaluate the degree to which on-the-job training is used to reinforce classroom activities.

Records Reviewed:

- Organizational Charts for:
  - Center for Continuing Education (CCE)
  - LMES Disassembly and Storage Organization (DSO)
  - LMES Quality Organization (QO)
- Y/GA-66/R5, Y-12 Plant Training Implementation Matrix (TIM), Revision 5 for DOE Order 5480.20A, dated November 1995
- LMES Programmatic Assessment for DOE 5480.20A
- LMES Adherence Based Assessment for DOE 5480.20A
- Request for Approval, Request No.: LMES/Y-12-DOE-5480.20-CSA-82D, dated October 25, 1995
- DOE Oak Ridge Operations Office letter: Y-12 Plant Training Implementation Matrix (TIM), Revision 5, dated January 11, 1996
- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant

RA ASSESSMENT FORM 1
Training

- Y-12 Training Procedures Y-90 Series
  -010, Selection, Qualification, Certification, and Continuing Training
  -020, Exceptions, Extensions, Alternatives, and Waivers
  -030, Training records
  -040, Conduct of Training Analysis
  -050, Conduct of Training Design
  -060, Conduct of Training Development
  -070, Development, Control, and Administration of Examinations
  -080, Conduct of Training Implementation
  -090, Training Remediation
  -100, Conduct of Training Program Evaluation
- DSO and QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 16, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Standing Order Log. No. 9204-2E-95-019
- Quality Organization Standing Order 96-01
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31, 1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan

Interviews Conducted:

- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- CCE Organizational Training Coordinator
- 9204-2E Shift Manager
- Supervisor of Disassembly Operations/9204-2E
- DSO Process Engineer
- Quality Organization Training Analysts
- Quality Organization Dimensional Inspection Engineer

Shift Performance Evolution:

- Classroom Training for Assembly Station Director, Module 06502
- Classroom Training for Safeguards/Security Plans for D&S Areas, Module 13263
- Training Working Group Meeting on February 29, 1996

RA ASSESSMENT FORM 1
Training

- o Performance of simulation exercise, C-5 Unit Disassembly on February 28, 1996
- o Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996

Discussion of Results:

Record review: Training and Qualification records for disassembly/assembly (D/A) operations, quality, and technical support personnel were reviewed. A check of 20 training and qualification records was conducted at the central repository for training records in Building 9709. These records contain the objective quality evidence of the training process and include the results of written and oral evaluations, and document the final qualification or certification of personnel. The records are well maintained and auditable. The Site's computer based training tracking system, the Training Management System (TMS), is accurate when compared to the hard copy records and is a useful tool in monitoring qualification/certification status. A few minor administrative deficiencies were noted. Each qualification record contains a cover sheet which is not completed or signed. This cover sheet is reportedly no longer required and is to be removed from the records. A review of one record for an engineering support person in the Quality Organization indicated that training was deficient or expired in five training modules. Two Quality Organization personnel lacked required job specific training as specified in the Training Developmental Administrative Guide (TDAG). Some medical certification requirements as listed in the TDAG were not included in the qualification records.

A walkdown of Building 9204-2E revealed that access procedures incorporate positive control of non-resident personnel. The access control program includes site specific and facility training requirements and only those personnel who have received this training are permitted unescorted access.

There is no formally established process to routinely conduct self-assessments of the Y-12 Plant training programs. The current satisfactory state of the D/A training program is a result of the extensive efforts to conduct assessments associated with the Disassembly and Assembly restart activities. In support of Defense Nuclear Facilities Safety Board (DNFSB), Recommendation 94-4 Implementation Plan Task 5 actions, a number of deliverables in support of a Y-12 Training and Qualification Program Management Self-Assessment Plan are scheduled for April 1996. A training evaluation as required by DOE 5480.20A in accordance with the Guidelines for Evaluation of Nuclear Facility Training Programs, DOE-STD-1070-94 has yet to be conducted.

Training programs reflect the input from lessons learned from operating experience. Continuing training programs for D/A and Quality Organizations are not mature. Plans are in place, but there is little evidence that these programs are effective. So much of the recent efforts

have been focused on preparations for resumption, that the continuing training program objectives have been relegated for future accomplishment. Personnel who will administer these programs are knowledgeable of their duties. There is little evidence that remedial training programs are in place. In the review of the qualification records, there was no indication that any of the persons had been involved in a remedial process. It is concluded from this sample that examinations and operational evaluations may not be challenging.

A review of the list of qualified positions and proficiency records for operations personnel assigned to Building 9204-2E revealed that Standing Order Log No. 9204-2E-95-019 did not specify procedures to be followed in cases where certified personnel did not meet proficiency requirements. The list of qualified personnel in use in Building 9204-2E contained one certified person whose proficiency had not been maintained as required. The Quality Organization has just established procedures to specify the list of qualified positions and proficiency requirements for activities they conduct in Building 9204-2E. Quality Organization Standing Order 96-01 addresses proficiency requirements. There is no list of qualified positions promulgated and in place for the Quality Organization. Standing Order 96-01 does not specifically state that personnel who fail to maintain proficiency shall be removed from the list of qualified positions. (TR1-1)

Goals and objectives for implementing the training and qualification process were reviewed. A strong relationship between line management and the training organizations has not been established. Management is not involved in supervising training and does not actively interface with training efforts to ensure that the training product is of the desired quality. While there are areas of excellence in administering training programs, there is no overall direction provided by line management which provides a long range perspective to efficiently integrate training programs to achieve total excellence in operations at Y-12. This shortcoming is demonstrated by the need to significantly upgrade the training programs for the Quality Organization to support this Readiness Assessment (RA). The Quality Organization Training Program did not benefit from lessons learned during the Receipt, Storage, and Shipment (RSS) RA. The current training groups which support the operations and quality organizations are not well coordinated to ensure training is efficiently conducted and that lessons learned between groups are shared. Recent stop gap measures remain a factor in the planning for Quality Organization training. A Quality Program Training Manager was placed in position a few days before the commencement of this RA. While recent positive changes in the training for this organization are evident, it appears that they were instituted in response to discrepancies noted in the preparation for this RA. Training personnel are not always aware of management direction and emphasis. The current satisfactory state of training can be attributed to the addition of temporary sub-contractor staff, the dedicated efforts of a few training group personnel, and the

additional attention associated with efforts to resume operations such as the assignment of mentors. When this attention is focused to other areas of interests and the requirements of special personnel are no longer required, the current organization may not be capable of sustaining the same level of training quality. (TR1-2)

Conclusion: Training programs for D/A operations, quality, and technical support personnel have been established, documented, and implemented to cover the range of duties required to be performed; however procedures to ensure that only certified personnel are permitted to perform duties are not in place and a strong relationship between line management and training organization has not been established. The criteria for this objective have not been met.

Issue(s):

- Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization. (TR1-1)

- Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management. (TR1-2)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 1	Finding X Observ.	Pre-Start X Post-Start	Issue No.: TR1-1 Rev. No.: Date: 03/05/96

ISSUE: Procedures and practices to remove certifications from personnel who do not maintain proficiency are not established. A Qualified Personnel List is not maintained for the Quality Organization.

REQUIREMENT: If active status (proficiency) is not maintained, certification shall be suspended. Prior to resuming duties associated with certification, the operating contractor shall ensure that:

(1) Certification is otherwise current and valid; and

(2) The certified operator, fissionable material handler, or certified supervisor has performed certification duties under the direct supervision of a certified person, as appropriate to the position, for a specific period of time.

The Operations Manager/Production Manager shall maintain the Qualified Personnel List as specified in the Nuclear Conduct of Operations Manual.

REFERENCE(S): DOE Order 5480.20A, Chapter IV, paragraph 5; Y-12 Nuclear Operations Conduct of Operations Manual, Chapter 2.2.V.B.

DISCUSSION: A review of the list of qualified positions and proficiency records for operations personnel assigned to Building 9204-2E revealed that Standing Order Log No. 9204-2E-95-019 did not specify procedures to be followed in cases where certified personnel did not meet proficiency requirements. The list of qualified personnel in use in Building 9204-2E contained one certified person whose proficiency had not been maintained as required. The Quality Organization has just established procedures, Standing Order 96-01, which specify proficiency requirements for activities they conduct in Building 9204-2E. Standing Order 96-01 does not specifically state that personnel who fail to maintain proficiency shall be removed from the list of qualified positions.

There is no list of Quality Organization qualified positions as required by the Nuclear Conduct of Operations Manual.

CONCLUSION: Proficiency requirements are not fully enforced in Building 9204-2E. A list of qualified positions for the Quality Organization performing activities in Building 9204-2E has not been established. These requirements must be met to ensure operations are safely conducted. This issue must be resolved prior to restart.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 1	Finding Observ. X	Pre-Start Post-Start	Issue No.: TR1-2 Rev. No.: Date: 03/05/96

ISSUE: Management of training at Y-12 is not well coordinated and lacks effective direction and supervision from line management.

REQUIREMENT: Line management has overall responsibility and authority for the content and effective conduct of the training and qualification programs.

REFERENCE(S): DOE Standard 1070-94, Objective 1, Criteria 1.1.

DISCUSSION: A strong relationship between line management and the training organizations has not been established. Management is not routinely involved in supervising training and does not actively interface with training efforts to ensure that the training product is of the desired quality. There is no overall direction provided by line management which provides a long range perspective to efficiently integrate training programs to achieve total excellence in operations at Y-12. This shortcoming is demonstrated by the need to significantly upgrade the training programs for the Quality Organization to support this Readiness Assessment. The Quality Organization Training Program did not benefit from lessons learned during the Receipt, Storage, and Shipment (RSS) Readiness Assessment. The current training groups which support the operations and quality organizations are not well coordinated to ensure training is efficiently conducted and that lessons learned between groups are shared. Training personnel are not always aware of management direction and emphasis. The current satisfactory state of training can be attributed to the addition of temporary sub-contractor staff, the dedicated efforts of a few training group personnel, and the additional attention associated with efforts to resume operations such as the assignment of mentors. When this attention is focused to other areas of interests and the requirements of special personnel are no longer required, the current organization may not be capable of sustaining the same level of training quality.

CONCLUSION: While the state of training at Y-12 is currently satisfactory, a strong relationship between line management and the training organizations has not been established.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 2, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The training and qualification programs encompass the range of duties and activities required to be performed. **(CORE REQUIREMENT #2 and 9)**

Criteria

The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements. The training program is based on the results of the analysis. Learning objectives are derived from this analysis.

Requirements for continuing training have been adequately defined and programs have been developed. Continuing training includes conduct of realistic drills to maintain proficiency in responding to abnormal and accident situations, including those involving radiological hazards. (5480.20A, Ch I, para 7.d)

Training programs for disassembly/assembly, quality and technical support personnel include training on the requirements contained in the approved operating basis for the facility. (5480.20A, Ch I, Para 7)

Training programs for operations and maintenance personnel emphasize the importance of compliance with procedures and safety requirements. (5480.20A, Ch I, Para 7)

The training department uses post-training feedback, internal evaluations (self assessment), and operating experience to modify the training program when needed. This includes:

- o Using feedback on training effectiveness from trainees and supervisors,
- o Incorporating feedback from operating experience at the site and from other Department of Energy sites,
- o Conducting formal reviews of training effectiveness,
- o Incorporating of comments from line management self-assessments and other audits.

Records demonstrate that facility representatives assigned to cover facility operations are qualified.

RA ASSESSMENT FORM 1
Training

Approach

Record Review: Review disassembly/assembly and quality personnel lesson plans for incorporation of safety requirements, operational safety requirements, and procedure compliance. Review trainee feedback forms, training evaluations of lessons learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the continuing training program plan and drill schedule to verify adequacy in supporting safe facility operations.

Review completed Facility Representative Qual-Cards, oral and written exam results proving qualification in accordance with the Oak Ridge Y-12 Site Office qualification guidelines.

Review training programs to ensure that subject matter experts, line management, and training staff develop and maintain a valid facility-specific task list as the basis for the training program; the facility specific list of tasks selected for training is reviewed periodically and updated as necessary by changes in procedures, facility systems/equipment, job scope, advances in technology, and Department of Energy or other appropriate training guidelines are used for selecting,sequencing and verifying training program structure and content.

Review examinations (written and oral) and performance evaluations to verify that they are based on learning objectives, are reviewed by subject matter experts, are changed frequently to avoid compromise and are formally controlled.

Interviews: Interview training personnel responsible for continuing and drill scenario development and implementation. Interview personnel responsible for establishing training needs for disassembly/assembly, quality and technical support personnel.

Shift Performance: Observe operator and maintenance support personnel response to drills. Evaluate a continuing training classroom lecture simulator training session or field training activity for technical and administrative adequacy.

Records Reviewed:

- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant
- Y-12 Training Procedures Y-90 Series

-010, Selection, Qualification, Certification, and Continuing Training
-020, Exceptions, Extensions, Alternatives, and Waivers
-030, Training records
-040, Conduct of Training Analysis
-050, Conduct of Training Design
-060, Conduct of Training Development
-070, Development, Control, and Administration of Examinations
-080, Conduct of Training Implementation
-090, Training Remediation
-100, Conduct of Training Program Evaluation

- DSO/QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 26, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31,1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan
- Facility Representative Qualification Records (3)

Interviews Conducted:

- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- Y-12 Drill Program Coordinator
- CCE Organizational Training Coordinator
- Quality Organization Training Analysts
- Y-12 Facility Representative

Shift Performance Evolution:

- Classroom training for Assembly Station Director, Module 06502
- Classroom training for Safeguards/Security Plans for D&S Areas, Module 13263
- Performance of Simulation Exercise, C-5 Unit Disassembly on February 28, 1996
- Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996

Discussion of Results:

Record Reviews: Lesson plans and examinations for Quality Organization personnel assigned as tenants for Building 9204-2E and for Disassembly/Assembly (D/A) personnel include the required training on the safety envelope. Comprehensive written examinations are administered and document the level of knowledge of operational safety requirements. Performance Document Checklists (PDCs), oral examinations, and operational evaluations are used to evaluate trainee mastery of On-The-Job training (OJT) and assess comprehension of training content. The written and PDC examinations are comprehensive and are prepared and graded by subject matter experts (SMEs). Examinations for the Quality organization have only recently been developed. As the program matures these examinations will need to be changed periodically to prevent their compromise.

There is no formal process for incorporating feedback and lessons learned from classroom training, OJT sessions and mock-up/simulation exercises into training programs. While student feedback forms are used to assess classroom training, they are normally returned to the instructor and not to the lesson preparer. Thus the program may not be corrected. There are some recent examples where lessons learned from OJT and mock-up/simulation exercises could have resulted in improved training programs, however, lack of a formal program to accomplish this process resulted in these lessons being lost. (TR2-1)

Reviews of the qualification records for three Facility Representatives (FRs) were conducted. Records of interim qualification for all FRs were determined to be adequate. Written examinations to establish qualification were not administered.

Interviews: Interviews with the Quality Organization training personnel indicated they were knowledgeable of the facility and processes used to perform dimensional inspection and non-destructive testing of components. A discussion with several training analysts concerning training program development occurred during the interviews. Recent efforts to develop the training program for the Quality organization included a thorough job and task analysis which was supported by 30 subcontractors.

Shift performance: A mock-up/simulation exercise of the C-5 unit disassembly was conducted by D/A and Quality Organization personnel and observed by the Readiness Assessment team. Personnel demonstrated that they could safely and adequately perform the disassembly. However, many deficiencies in the conduct of this exercise were noted. The pre-job briefing was of insufficient depth to ensure personnel were knowledgeable of the tasks to be performed. While the actual simulation exercise was well performed by the participants, several discrepancies were noted. Staging of tools to perform tasks was poorly accomplished. No consideration was given to reduction of radiological waste. Tools were not marked for radiological contamination. There was no apparent

consideration given to minimize cross contamination. Gloves were not changed when appropriate. Local decontamination was not considered. Some inappropriate tools were used including several adjustable wrenches and allen key sets. Pre-use inspections of lifting and handling equipment were not performed as required by the DOE Hoisting and Rigging Manual. Several tools, boxes and a pallet made of wood were used in the high contamination area making suitable decontamination impossible. The post mock-up/simulation critique did not incorporate any formal method for capturing and documenting lessons learned from the exercise. Differences between the mockup and the actual disassembly of the C-5 unit were not discussed to ensure the disassembly team was fully aware of conditions to be expected when the actual operation is performed. Records documenting the training and performance on the C-5 mockup were reviewed. The only training records associated with this evolution consist of post-job critiques and attendance records which are maintained by the Building 9204-2E Disassembly Supervisor. These records are informal, are not of sufficient detail, and lack the review of senior managers. The records do not adequately support a determination that training on this mockup is adequate to support resumption of operations. It is concluded that the training benefit from conducting the simulation on the mockup was not optimized. (TR2-1)

Conclusion: Training and qualification programs encompass the range of duties and activities required to be performed, however the lack of a formal process to incorporate lessons learned in training processes results in less than optimum training performance. The full potential for training and qualifying the C-5 Unit disassembly team was not achieved. The criteria for this objective have been met.

Issue(s):

- Training on the C-5 unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers. (TR2-1)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 2	Finding X Observ.	Pre-Start Post-Start X	Issue No.: TR2-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Training on the C-5 unit disassembly was not formally conducted. Critiques of this evolution did not capture lessons learned. Differences between the mock up and the actual disassembly of a C-5 unit were not delineated. Records documenting the training were of insufficient detail and lacked review of senior managers.

REQUIREMENT: Training programs shall consist of a combination of classroom-type and on-the-job training and include simulator and laboratory training as it applies to the position. The level of detail and content of the training program should reflect the training and qualification needs of the facility to assure personnel are qualified to carry out their assigned responsibilities.

Training on a simulator should be used to build operating team skills and/or enhance the effectiveness of hands-on skill training. Differences between the simulator and the facility/process are to be accommodated in the training session.

Mastery of the learning objectives by the trainees should be evaluated periodically during the training. Evaluations should be content valid, administered consistently, controlled, and documented (emphasis added) as appropriate to the level of assurance needed.

REFERENCE(S): DOE Order 5480.20A, Chapter I, paragraph 7.a.(2); (2) DOE-STD-1070-94, Objective 6, Criteria 6.5; and DOE Order 5480.20A, Chapter I, paragraph 7.b.(4).

DISCUSSION: A mock-up/simulation exercise of the C-5 unit disassembly was conducted by Disassembly/Assembly and Quality Organization personnel and observed by the Readiness Assessment team. While the actual simulation exercise was well performed by the participants, the post mock-up/simulation critique did not incorporate any formal method for capturing and documenting lessons learned from the exercise. Differences between the mockup and the actual disassembly of the C-5 unit were not discussed to ensure the disassembly team was fully aware of conditions to be expected when the actual operation is performed. Records documenting the training and performance on the C-5 mockup were reviewed. The only training records associated with this evolution consist of post-job critiques and attendance records which are maintained by the Building 9204-2E Disassembly Supervisor. These records are informal, are not of sufficient detail, and lack the review of senior managers. The records do not adequately support a determination that training on this mockup is adequate to support resumption of operations.

RA DEFICIENCY FORM 2
Training

CONCLUSION: The mock-up/simulation exercise was of limited training benefit because the lessons learned were not captured and promulgated to cause an improved level of performance. Differences between the mock-up and the actual C-5 unit disassembly process were not fully explained to the disassembly team. Records documenting this training were inadequate. Since the disassembly team demonstrated an adequate performance during this exercise, this issue is a post start finding.

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 3, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: The technical and management qualifications of contractor personnel responsible for facility operations are adequate. **(CORE REQUIREMENTS 13 and 19)**

Criteria

The technical qualifications of contractor personnel involved in disassembly/assembly activities, including management who are responsible for facility, up to the Manager, Nuclear Operations are verified. Entry-level requirements are established for each operations position, as applicable, including minimum education, experience, technical, and medical requirements. These requirements also include managers who are responsible for facility, up to the Manager Nuclear Operations. (5480.20A, Ch. I, para 9).

The applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel have the required minimum education and experience levels. (5480.20A, Attachment IV)

Approach

Record Review: Review the procedures or policies that describe the personnel selection and entry-level requirements to ensure these requirements address the minimum physical attributes a trainee must possess, and the minimum educational, technical and experience requirements necessary for the employee to meet job requirements according to the requirements of the Oak Ridge Y-12 Site Training Implementation Matrix.

Review training records for the applicable non-reactor nuclear facility managers, supervisors, operators, technicians, and technical support personnel and verify the required minimum education and experience levels are met. Review training records for managers to determine if they have received adequate training in disassembly/assembly activities. Review training and qualification requirements for those mentors in place as compensatory measures.

Interviews: Interview operators and supervisors to ensure they understand the minimum staffing requirements for all phases of facility operations. Verify that the training and qualification of personnel are at a level sufficient to support resumption.

RA ASSESSMENT FORM 1
Training

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine their adequacy. Verify they satisfy administrative and safety basis requirements.

Records Reviewed:

- Organizational Charts for:
  - Center for Continuing Education (CCE)
  - LMES Disassembly and Storage Organization (DSO)
  - LMES Quality Organization (QO)
- Y-12 Training Manual
- Y/AD-623, Plan for Continuing and Resuming Operations at the Y-12 Plant
- Y-12 Training Procedures Y-90 Series
  -010, Selection, Qualification, Certification, and Continuing Training
  -020, Exceptions, Extensions, Alternatives, and Waivers
  -030, Training records
  -040, Conduct of Training Analysis
  -050, Conduct of Training Design
  -060, Conduct of Training Development
  -070, Development, Control, and Administration of Examinations
  -080, Conduct of Training Implementation
  -090, Training Remediation
  -100, Conduct of Training Program Evaluation
- DSO/QO Training and Qualification Records (20)
- Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization, dated February 26, 1996
- Corrective Action Plan for DNFSB Recommendation 94-4 Task 4 Assessment of Conduct of Operations, dated January 31, 1996
- Training Management System Data Base (TMS)-26 separate personnel data entries
- Summary Report: Y-12 Plant Training and Qualification Accomplishments as of December 31,1995, dated January 30, 1996
- Y-12 Training and Qualification Program Management Self-Assessment Plan

Interviews Conducted:

- Manager, Nuclear Operations
- Training Manager, Disassembly and Storage Operations (DSO)
- Y-12 Quality Manager
- Quality Organization Management/Assessment and Compliance Branch Head
- Quality Organization Training Manager
- Quality Organization Training Coordinator
- Interim Y-12 Plant Training Manager
- CCE Organizational Training Coordinator

- o 9204-2E Shift Manager
- o Supervisor of Disassembly Operations/9204-2E

Shift Performance Evolution:

- o Performance of simulation exercise, C-5 Unit Disassembly on February 28, 1996
- o Performance of weldring degreasing, electropolishing and electron beam welding on February 29, 1996
- o Fissile Material Container Storage Abnormal Condition Response Drill
- o Hazardous Spill Reporting and Responding Drill
- o Injured and Potentially Contaminated Worker Drill

Discussion of Results:

Record Review: Procedures and policies describing personnel selection and entry-level requirements were reviewed to ensure they address minimum physical attributes, and the minimum technical and experience requirements. Training and qualification records were reviewed to ensure that personnel met minimum education and experience levels. Procedures that address personnel selection, entry-level requirements, minimum physical attributes, educational, technical and experience requirements for job entry are addressed in the Y-12 plant training procedures. The recently issued Y-12 plant TIM documents an adequate verification of these requirements to the DOE Training Order, DOE 5480.20A. Reviews of the Y-12 plant personnel training records located in Building 9709 were performed. The records for the personnel supporting the Disassembly and Assembly and Quality Organizations are complete and address all requirements of the training order. Only minor discrepancies in the records were noted. Managers have received adequate training in D/A activities. Mentors are knowledgeable and well qualified to perform compensatory duties.

Interviews: Interviews with Disassembly and Quality Organizational personnel, building management, supervisors, Shift Technical Advisors (STAs) and operations personnel revealed that these personnel have the required experience level to perform their duties. None of the personnel who are filling the role of STAs have completed qualifications as their qualification program has not yet been fully defined. STA candidates interviewed indicated they would complete this qualification in six months. The roles and responsibilities of the STAs have yet to be fully determined. Establishment of this position appears to be an excellent measure to improve technical excellence, however, it is not specifically required by DOE for application to D/A operations.

Shift Performance: Staffing was observed during the performance of drills and evolutions. The staffing levels are adequate. During the performance of the C-5 unit disassembly the assigned mentor actively participated and

provided direction when required. Minimum staffing for the Plant Shift Superintendent's Office and Fire Department have been established to support the Operational Safety Requirement.

Conclusion: Procedures are in place to adequately support personnel selection, training, and qualification. The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 4, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: Procedures in use at the facility have been reviewed for potential impacts on training and qualification. Training has been performed to the latest revision of procedures. **(CORE REQUIREMENT #18)**

Criteria

Training has been completed and documented for the latest revisions of procedures performed by disassembly/assembly, quality and technical support personnel. (5480.20A, Ch. I, para 7)

Training programs incorporate formal on-the-job training and hands-on evaluation of skills based on the latest revisions of procedures performed by disassembly/assembly and quality personnel.

Approach

Record Review: Review the process used to evaluate disassembly/assembly, quality and technical support personnel training needs based on procedure revisions. Review lessons plans, and supporting examinations. Determine if lesson plans accurately reflect procedure changes. Review the examinations for appropriate scope and content. Review the degree to which on-the-job training and hands-on evaluations for operations and maintenance personnel are used to reinforce classroom activities.

Interviews: Interview training personnel to determine their involvement with procedure changes affecting lesson plans. Interview supervisors to determine how they incorporate procedure revisions into work planning.

Shift Performance: Observe disassembly/assembly, quality and technical support personnel in the performance of on-the-job training. Observe classroom training or a field training activity. During observation of operations using procedures, verify proper conduct and understanding of the procedures by the operators.

Records Reviewed:

- Y-12 Plant Training Manual
- Y-12 Training Procedures series 90
- Training Management System Data Base (TMS)
- Training Development Administrative Guide (TDAG), applicable to the Quality Organization
- Tri-Plant Equipment, Testing, and Inspection (ETI) Procedures

RA ASSESSMENT FORM 1
Training

Interviews Conducted:

- o Training Manager, Disassembly and Storage Division (DSO)
- o Training Coordinator, DSO
- o Y-12 Quality Manager
- o Quality Organization Management/Assessment and Compliance Branch Head
- o Quality Organization Training Manager
- o Quality Organization Training Coordinator
- o Quality Organization Dimensional Metrology Branch Head
- o Disassembly/Assembly (D/A) Facility Support Branch Head

Shift Performance Evolution:

- o Classroom training for Assembly Station Director, Module 06502
- o Classroom training for Safeguards/Security Plans for D&S Areas, Module 13263
- o Simulation Exercise, C-5 disassembly on February 28, 1996
- o Assembly & verification/weldrings degreasing, electropolishing, electron beam welder, part marking, inspection

Discussion of Results:

Record Review: Reviews of the Y-12 training records revealed that personnel in the D/A and Quality Organization have received training on recent revisions to procedures. Both organizations have procedures in place to screen revisions for training applicability and personnel administering these processes are knowledgeable of their duties. The TMS system is effectively utilized to document training on procedure revisions. Supervisors use the TMS system to ensure their personnel are current in this training. Quality Organization procedures to ensure that revisions to Tri-Plant (Y-12, ORNL, K-25) Equipment, Testing, and Inspection (ETI) procedures are screened for training applicability are not in place. Several Tri-Plant procedure revisions have been issued in the past three months. Training has not been conducted for these procedure revisions. (TR4-1)

Interviews: Interviews with personnel responsible for conducting training on procedure revisions revealed that they were knowledgeable and effective in ensuring that training was conducted in support of current operations. Lesson plans supporting procedures revisions are sufficiently detailed where required. Most procedure revisions result in determinations that required reading should be conducted. In the procedure revisions reviewed, this appeared to be appropriate. Supervisors were attentive to requirements to ensure their personnel were trained on procedure modifications.

Shift Performance: D/A operations and Quality Organization evolutions

observed were professionally conducted. Personnel were knowledgeable of procedure requirements. Classroom training observed was thorough and with the necessary emphasis on recent modifications to procedures.

Conclusion: Training has been performed to the latest revision to procedures. D/A personnel are knowledgeable of recent revisions to procedures and are able to utilize them effectively during operations and evolutions observed. The administrative process for ensuring Quality Organization personnel are trained to the latest revisions to procedures is deficient as there is no system to ensure that revisions to Tri-Plant ETI procedures are screened for training. The criteria for this objective have been met.

Issue(s):

o Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures. (TR4-1)

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock

ORR DEFICIENCY FORM 2
Training

Functional Area: TR	Objective No.: 4	Finding X Observ.	Pre-Start Post-Start X	Issue No.: TR4-1 Rev. No.: 0 Date: 03/05/96

ISSUE: Quality Organization personnel are not trained on revisions to Tri-Plant ETI procedures.

REQUIREMENT: Qualification and certification programs shall be reviewed by contractor facility management and shall be kept up to date to reflect changes to the facility, Safety Analysis Reports, Technical Safety Requirements, procedures (emphasis added), regulations, and applicable industry operating experience.

REFERENCE(S): DOE Order 5480.20A, Chapter I, paragraph 7.a.(3).

DISCUSSION: Quality Organization procedures to ensure that revisions to Tri-Plant ETI procedures are screened for training applicability are not in place. Several Tri-Plant procedure revisions have been issued in the past three months. Training has not been conducted for these procedure revisions.

CONCLUSION: The process for reviewing procedure revisions as they apply to the operations conducted by the Quality Organization is inadequate. Not all procedure revisions have been screened for training applicability. This issue is a post start finding.

Inspector:	Ed Little/Ted Hinkel	Approved:	John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 5, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A baseline compliance status review of Department of Energy Order 5480.20A has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site Office compliance assessments of the 51 Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance.

Compensatory measures specified in the Compliance Schedule Agreements are adequately understood and implemented by operations managers.

Approach

Record Review: Review the order compliance package for Department of Energy Order 5480.20A, including all applicable Compliance Schedule Agreements, exemptions and compensatory measures. For identified Request for Approvals, verify schedule commitments have been met and compensatory measures identified.

Interviews: If this Order is not fully implemented, interview management personnel to ensure their awareness of the noncompliance(s) along with actions necessary to fully implement the order requirements, and all interim compensatory measures. Ensure operations managers have reviewed the compensatory measures and corrective actions taken to address the non-conformance for site level programmatic and facility-level compliance and adherence-based assessments.

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

Records Reviewed:

- Y/GA-66/R5, Training Implementation Matrix for DOE 5480.20A
- DOE 5480.20A Compliance Assessment Summary Report, dated February 14, 1996
- Request No.: LMES/Y-12-DOE-5480.20-CSA-82D, dated October 25, 1995

- DOE Oak Ridge Operations Office letter: Y-12 Plant Training Implementation Matrix (TIM), Revision 5, dated January 11, 1996

Interviews Conducted:

- Interim Y-12 Plant Training Manager
- Training Manager, Disassembly and Storage Division (DSO)

Shift Performance Evolution:

- Training Working Group Meeting held on February 29, 1996

Discussion of Results:

Record Review: The Y-12 Plant TIM for DOE 5480.20A was submitted in November 1995 and approved by the Oak Ridge Operations Office on January 11, 1996. Full compliance with the order is being tracked by an Integrated Project Plan (IPP). Building 9204-2E personnel in DSO and QO organizations are scheduled to achieve full compliance with the order in May of 1997. There is one Request for Approval (RFA) outstanding. This RFA had been previously submitted and approved for the previous training order and was not required to be submitted for the new order. It recognizes some inadequacies in the process for establishing training and certification programs. A compensatory measure is specified which recognizes that implementation of these training and certification programs will occur as a part of the resumption efforts. Positions requiring certification and qualification in Building 9204-2E are specified. Attainment of these requirements was verified during a review of the training and qualification records. Eight positions filled by the Quality Organization and 9 positions filled by DSO require certification. The total number of persons in both organizations currently certified is in excess of 30. The large number of certifications creates significant numbers of proficiency requirements and causes a large work load on the training staff to support requalification of certified positions every two years. While the importance of certification is recognized, it is equally important to ensure that these requirements are carefully considered so that excessive certification requirements are not established. Discussions with training personnel concerning this issue indicate that some review of the totality of the certification scope should be conducted.

The Y-12 Plant Training Steering Board, addressed as the organizational body to establish major training policy in the Y-12 Plant TIM, has been replaced by a Y-12 Plant Training Working Group. This group has not been formally established. Membership in this group is generally at a lower seniority than the organization prescribed in the Y-12 Plant Steering Board in the TIM.

RA ASSESSMENT FORM 1
Training

Interviews: Discussions with training program personnel who support Disassembly and Assembly and the Quality Organization revealed that they were knowledgeable of actions required to achieve compliance with DOE 5480.20A. A comprehensive Standards Requirements and Identification Document (SRID) has been prepared to capture all training compliance requirements. Personnel are aware and supportive of actions planned to comply with this document.

Shift Performance: A Training Working Group meeting was conducted on February 29, 1996 and attended by the training representatives of the D/A Readiness Assessment Team. This meeting was effective. A major concern of personnel at the meeting was the effect of impending changes to training requirements such as the promulgation of the Training Rule and necessary and sufficient criteria. Personnel involved in the Training Working Group are actively discussing options to respond to these changes in policy.

Conclusion: A baseline compliance review of the requirements of DOE 5480.20A within the areas of Disassembly and Assembly activities has been performed. Noncompliances are appropriately identified, and corrective measures are documented and are presently being implemented. The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel Approved: John Rothrock

RA ASSESSMENT FORM 1
Training

FUNCTIONAL AREA: TR	OBJECTIVE 6, REV. __ DATE: March 5, 1996	CRITERIA MET	
		YES X	NO __

OBJECTIVE: A routine operations drill program, including program records, has been established and implemented **(CORE REQUIREMENT #9)**

Criteria

An effective routine (non-emergency) operations drill program has been established to assure operator readiness and knowledge of appropriate responses to indicators. Drills and exercises are conducted and an adequate response capability is demonstrated to exist. (5480.19, Ch. VI, 5480.20A, Ch. I, Section 7)

Approach

Record Review: Review the drill records which describe the routine drills that have been conducted in the past year. Determine if the drill scenarios were adequate and if the requisite number of drills have been conducted to fully test personnel and, procedures and equipment in a broad range of facility operations. Determine if lessons learned from drills are factored into subsequent drills and training.

Interviews: Interview personnel responsible for the development and conduct of drills to evaluate their understanding of the purpose of the drill program, and their ability to execute it.

Shift Performance: Attend and assess drill preparations, pre-briefs, conduct and critiques. Determine if operational drills test operators and operations support personnel with realistic and challenging scenarios. Evaluate whether an adequate response capability exists.

Records Reviewed:

- Y-12 Plant Procedure, Y-10-01-210, Conduct of Drills
- Disassembly and Storage Organization 1996 Drill Program
- Drill Schedule for 1995/1996
- Drill Guide 2-0001, Rev. B, Fissile Material Container Storage Abnormal Condition response
- Drill Guide 2-0006, Rev. A, Hazardous Spill Reporting and Responding
- Drill Guide 2-0015, Rev. A, Injured and Potentially Contaminated Worker
- Other 9204-2E Drill Guides (12)

RA ASSESSMENT FORM 1
Training

Interviews Conducted:

- o DSO Drill Program Coordinator
- o DSO Facility Senior Drill Monitor
- o Facility Representative
- o Building 9204-2E Mentors

Shift Performance Evolution:

- o Fissile Material Container Storage Abnormal Condition Response Drill
- o Hazardous Spill Reporting and Responding Drill
- o Injured and Potentially Contaminated Worker Drill
- o Injured and potentially contaminated worker

Discussion of Results:

Record Review: The drill program records were reviewed with the DSO Drill Program Coordinator. A program of 15 drills for the Building 9204-2E has been established. Drills are specified to be run every two weeks. The building has met this schedule and in some cases has run extra drills. The current schedule for conducting drills is approved by the Manager, DSO and is adequate to support the continuing training program. Drill scenarios in use emphasize basic responses by building personnel. Changes in the scenarios have been made and more are contemplated to increase the complexity of drills as proficiency improves. The DSO Drill Program Coordinator is aggressive and has a plan for integrating more challenging drills in the future.

Interviews: Personnel responsible for planning, coordinating, and running drills are knowledgeable of the expected level of excellence to be achieved by the continuing training program and fully understand the role drills play in this program. The organization to support running drills at Y-12 is sound. Personnel in place are capable of causing an improved level of performance of operation by their professional approach to planning, running, and critiquing drills. The drill planning team consisting of the DSO Drill Program Coordinator, Facility Senior Drill Monitor, Shift Operations Manager, Facility Representative and mentors are well qualified to carry out drill program responsibilities.

Shift Performance: Drills run during this readiness assessment were not initially well coordinated among the various organizations required to support the drills. Senior managers were not initially involved in ensuring this coordination was accomplished, and as a result several activities outside the D/A activities were reluctant to participate as required. Subsequent senior management involvement occurred resolving this issue, however excessive delays occurred in briefing and initiating drills. Three drills were conducted. Two of the drills tested basic responses to minor abnormalities. A third drill of significantly more complexity was run at the request of the Readiness Assessment Team. This

required the preparation of a unique drill scenario and obtaining management approval of a new drill guide during the conduct of this readiness assessment. The drill team was able to staff this effort and initiate, monitor, and critique drill performance in a professional manner. Some problems were noted in implementing drills. The drill team did not initiate one drill exactly as specified in the drill guide. For another drill, the Facility Senior Drill Monitor specified a different scheme for initiating the drill at the drill pre-brief. This deviation was questioned by the Facility Representative and resolved so that compliance with the drill guide was reinforced. The performance of drills and the formality of conducting drills has improved since the Readiness Assessment for Receipt, Storage, and Shipment. An adequate response capability has been established for Disassembly and Assembly Operations.

Conclusion: The criteria for this objective have been met.

Issue(s):

o None

Inspector: Ed Little/Ted Hinkel	Approved: John Rothrock