



Department of Energy

Washington, DC 20585

APR 04 1996

Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
Suite 700
625 Indiana Avenue, N.W.
Washington, D.C. 20004

Dear Mr. Chairman:

The completed items from Commitment N.4.2 called for in the Department's Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 94-4 associated with the Disassembly and Assembly mission area are enclosed. A list of the deliverables is provided as Enclosure 1 to this letter.

If you have any questions, please contact me or have your staff contact Phil Aiken of my staff at (301) 903-4513.

Sincerely,

A handwritten signature in cursive script, appearing to read "T. P. Seitz".

Thomas P. Seitz
Deputy Assistant Secretary for
Military Applications and
Stockpile Management
Defense Programs

8 Enclosures

cc w/enclosures:
M. Whitaker, S3.1





memorandum

DATE: February 25, 1996

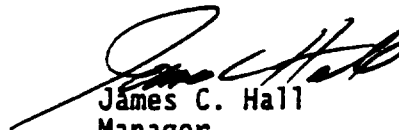
REPLY TO: DP-81:Spence
ATTN OF:

SUBJECT: REQUEST FOR COMMENCEMENT OF THE READINESS ASSESSMENT FOR DISASSEMBLY AND ASSEMBLY ACTIVITIES AT THE Y-12 PLANT

TO: Robert W. Poe, Assistant Manager for Environment, Safety, and Quality, SE-30, ORO

In accordance with the requirements of Department of Energy (DOE) Order 5480.31, "Startup and Restart of Nuclear Facilities," Lockheed Martin Energy Systems, Inc., has declared its readiness to proceed with operations of the Disassembly and Assembly activities. The DOE Y-12 Site Office has validated this declaration and has requested the DOE Readiness Assessment (RA) to begin on February 26, 1996. You are authorized to begin the DOE RA as requested.

Questions may be directed to Bob Spence at 6-0755.


James C. Hall
Manager

CC:
R. R. Nelson, DP-80, ORO
R. J. Spence, DP-81, ORO
T. S. Tison, DP-811, ORO



memorandum

DATE: February 23, 1996

REPLY TO
ATTN OF: DP-811:Christenson

SUBJECT: RESTART OF DISASSEMBLY AND ASSEMBLY (D&A) ACTIVITIES AT THE Y-12 PLANT

TO: J. C. Hall, Manager, Oak Ridge Operations Office, M-1, ORO
THRU: R. R. Nelson, Assistant Manager for Defense Programs, DP-80, ORO

Lockheed Martin Energy Systems, Inc. (LMES), stated in the attached readiness-to-proceed letter, F. P. Gustavson to R. J. Spence, subject, "Contract DE-AC05-84OR21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, (Attachment 1) that the D&A activities are ready to commence following the completion both of a DOE Readiness Assessment (RA) and of the closure of all pre-restart findings that were generated by the contractor's internal Management Self-Assessment (MSA), the LMES RA, and the Y-12 Site Office Restart Team (YSORT).

The YSORT was commissioned by me to evaluate and judge the effectiveness and adequacy of the D&A activities of the LMES restart process. The team performed an assessment in parallel to the LMES MSA and RA and identified the 102 findings; 55 of which were pre-restart findings. Six pre-restart issues remain open, which are identified in the above-mentioned readiness-to-proceed letter, and are scheduled to close prior to completion of the DOE RA. A copy of YSORT's final report, "Assessment of the Disassembly and Assembly Activities at the Y-12 Plant," (Attachment 2) that is signed by the team members and leaders is attached. The conclusion of the report is the contractor has completed or identified all the necessary actions to ensure the safe operation of the facility. The YSORT is confident that the D&A resumption area is ready to resume operations.

In addition to the efforts of the YSORT, all areas and activities that are being resumed, as part of the D&A, now have DOE facility representatives who follow a rigorous surveillance program. This surveillance program includes all disassembly, assembly, and material-testing activities in the facilities that are being restarted. Their reviews of scheduled special operations surveillances and daily oversight provide me assurance that the contractor facility personnel will operate the facility in a safe manner. A copy of the facility representatives' recommendation (Attachment 3) for D&A readiness to restart is attached.

The Y-12 Site Office (YSO) has also performed a self-assessment to determine our readiness for the DOE RA. The prerequisites identified in the DOE "Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," Rev. 1, dated January 8, 1996, have been evaluated; and the evidence, which shows that continuing assessment programs have been developed and initiated, has been compiled. A copy of the team leader's self-assessment summary (Attachment 4) is attached.



Mr. J. C. Hall

-2-

February 23, 1996

I recommend that you direct the DOE-ORO RA to commence on February 26, 1996. This recommendation is based on the YSORT's report, the recommendation of the facility representatives, the YSO self-assessment, and the readiness-to-proceed letter from the contractor.

Please contact either Tom Tison at 6-9854 or me at 6-0755 if you have any questions.



Robert J. Spence
Y-12 Site Manager

DP-811:Christenson

4 Attachments

cc w/attachments:
F. P. Gustavson, 9704-2, MS-8010, Y-12

United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 23, 1996

REPLY TO: DP-811:Christenson
ATTN OF:

SUBJECT: **RESTART OF THE DISASSEMBLY AND ASSEMBLY (D&A) ACTIVITIES AT THE Y-12 PLANT**

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

The Lockheed Martin Marietta Energy Systems, Inc., (LMES) letter "Contract DE-AC05-84OR21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, stated that the D&A activities are ready to resume operations. The Y-12 Site Office Restart Team (YSORT) has completed its review of the subject resumption area and the LMES state of readiness. This review resulted in 102 findings that were transmitted to LMES. YSORT has verified the closure of all pre-restart findings from the YSORT and the LMES Readiness Assessment (RA) reviews with the exception of the six pre-restart issues which remain open. These open pre-restart issues have approved corrective actions plans (CAPs) with closure scheduled to be completed by March 1, 1996. All post-restart findings either have approved CAPs validated by YSORT or have been verified as closed by YSORT.

YSORT has documented its oversight and assessment of the LMES state of readiness to resume operations in the D&A resumption area. A copy of DOE "Y-12 Site Office Restart Team Assessment of the Disassembly and Assembly Resumption Activities at the Y-12 Plant," that is signed by team members and approved by the team management is attached. This report concludes that the contractor has completed or identified all necessary actions to ensure safe operation of the facilities. YSORT is confident that the D&A resumption area is ready to resume operations.

We recommend that you request the DOE Oak Ridge Operations Office to commence with the DOE RA in accordance with DOE Order 5480.31, "Startup and Restart of Nuclear Facilities."

If you have questions or need additional information, contact Dale Christenson at 4-3964 or me at 6-9854.



Thomas S. Tison
Restart Team Manager

Attachment

cc w/attachment:
D. K. Hoag, DP-813, ORO
M. A. Livesay, DP-812, ORO
D. L. Wall, DP-81, ORO



United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 22, 1996

REPLY TO
ATTN OF: DP-81:Wellbaum

SUBJECT: D&A READINESS TO RESTART

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

The D&A facility is ready to restart, considering the current combination of LMES D&A operations managers, D&A operations mentors, and DOE Facility Representatives. We base this recommendation on the recent progress noted during assessed facility restart activities and performance during special package operations.

During the restart process and special package operations, we have conducted over 25 assessments of D&A operations. These assessments included DOE approved Quality Evaluation (QE) special operations: component unpacking, handling, radiography, dimensional inspection, packing and storage, along with component mockup disassembly, facility walkthroughs, radiological practices, procedure compliance, procedure technical adequacy, worker safety, safety envelope maintenance and conduct of operations. Numerous problems were found and corrective actions, including compensatory measures, were taken. The corrective actions have resolved the immediate and restart problems. Long term programmatic problems have been identified. Related long term corrective actions have been planned and scheduled.

From our viewpoint, the remaining most significant long term programmatic problems concern improving performance as operational activities increase. Programmatic improvements needed include:

1. A thin layer of operations managers and assistants who understand the needed operating rigor.
2. Operations management control of tenant and support groups who perform work in D&A facilities.
3. Insufficient numbers of trained operators and managers. Several key positions only have one person certified for that position.
4. Immature formal configuration control and site-wide document control.
5. Poor, non-existent, or inaccurate technical information (i.e., system drawings, design information, technical manuals, system descriptions, etc.).
6. Potential operating rigor regression when intense management oversight relaxes.



These problems are exacerbated by apparent weak LMES uppermost site management support to correct programmatic deficiencies. The problems will exist regardless of D&A restarting. D&A restart, with the proper operating rigor, will help drive programmatic corrections. As only a few operations have been performed since LMES made significant D&A operations organizational changes, close DOE Facility Representative assessment will be required as processes are started.

In conclusion, LMES is ready to restart D&A provided the current cadre of LMES operations managers and mentors, in conjunction with our planned strong DOE Facility Representative oversight, remains functionally intact until the programmatic improvements are implemented.


Michael R. Miller
Facility Representative


Steven E. Wellbaum
Facility Representative



MARTIN MARIETTA ENERGY SYSTEMS, INC.POST OFFICE BOX 2008
OAK RIDGE, TENNESSEE 37831

February 23, 1996

Mr. R. J. Spence
Department of Energy, Oak Ridge Operations
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Spence:

**Contract DE-AC05-84OR21400, Report of Readiness to Proceed with
Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear**

The Lockheed Martin Energy Systems, Inc. (LMES), Management Self-Assessment (MSA) was completed satisfactorily on December 8, 1995. The LMES Readiness Assessment (RA) was completed on January 26, 1996. The RA team concluded that the Quality Organization (QO) was not yet prepared to resume operations due to concerns with procedures, Criticality Safety Approvals (CSAs), training, and certification. Members of the RA team were brought back to reassess these areas on February 19, 1996. The team concluded that the areas of training and procedures were lacking the formal controls necessary to support long-term operations. However, the team believed that adequate interim measures were sufficiently in place to warrant continuation of resumption activities once the pre-restart findings were resolved. The final reports for both assessments, including addendums, are enclosed.

All prerequisites from the D&A Plan of Action (POA) have been completed to ensure that personnel directly involved in the operations of the facility are trained and qualified to the effective procedures. All actions in the Request for Approvals required for D&A resumption have been completed. The equipment to be used in the operation is fully capable to support operations. Necessary documentation associated with the facility is in place and auditable. All post-restart findings from the LMES MSA and RA, as well as the Y-12 Site Office Restart Team assessment of D&A, have been identified and are being tracked. The remaining open Receipt, Storage, and Shipment Department of Energy RA post-restart findings have been evaluated against D&A restart requirements and need not be closed for D&A resumption. During management's final review of the closure packages for the LMES RA pre-restart findings, some discrepancies were identified and are included in the list of findings that must be closed prior to restart.

The material condition of D&A mission-area supporting facilities is satisfactory. There are no incomplete major modifications and no significant open work orders. Preventative maintenance and surveillance test requirements are current. I am ready to restart



Mr. R. J. Spence, DOE-ORO

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February 23, 1996

operations associated with C5 disassembly, operation of the electron beam welding, and QO functions in support of assembly operations when the following pre-restart findings and items have been closed:

1. Not all procedures identified in the D&A POA have been issued. The limits and conditions from CSAs are being incorporated into these procedures. Training to revised procedures will be completed by March 1, 1996. (LMES MSA finding SE-13 and LMES RA finding OP 1-1)
2. One quality procedure did not include the requirements of an applicable CSA. This will be corrected by February 24, 1996. (LMES RA finding OP 1-6)
3. The most recent revision to six quality CSAs was not in the facility on February 20, 1996. This will be resolved when the most recent revision of these CSAs become effective on February 24, 1996. (LMES RA finding OP 1-7)
4. Fire suppression system drawings identifying the system configuration for the D&A facility (9204-2E), as well as D&A operations in 9204-2, will be completed by March 1, 1996.
5. Discrepancies in equipment identified on the restart list will be resolved by February 25, 1996. (LMES RA finding OP 5-1)
6. Quality organization personnel will complete training on chapter 5 of the Nuclear Operations Conduct of Operations Manual, On the Job Training, by February 27, 1996. (LMES RA finding TQ 1-1)

Subsequent startup of additional processes within the D&A facility will be evaluated by LMES in accordance with Procedure Y10-190, *New Activity Startup Requirements*. If there are any questions with respect to the planning basis or extent of schedule definition, please direct your comments to R. K. Roosa, 6-4901.

Sincerely,



F. P. Gustavson
Vice President
Defense and Manufacturing

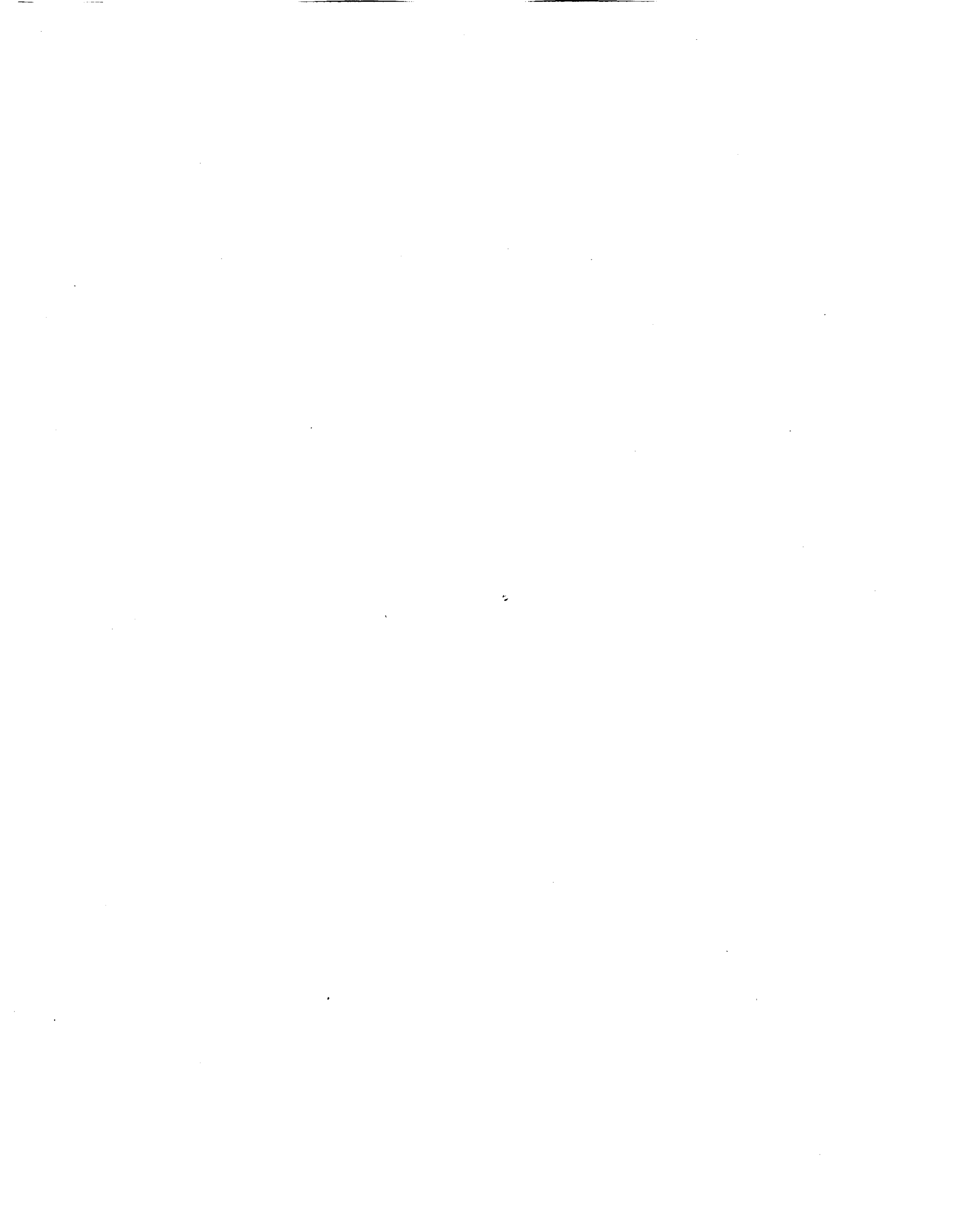
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Mr. R. J. Spence, DOE-ORO
Page 3
February 23, 1996

Enclosures: As Stated

cc: T. R. Butz
F. P. Gustavson
M. K. Morrow
R. K. Roosa (RC)



United States Government

Department of Energy

Oak Ridge Operations Office

memorandum

DATE: February 23, 1996

REPLY TO
ATTN OF: DP-811:SundieSUBJECT: DOE SELF-ASSESSMENT FOR THE RESUMPTION OF DISASSEMBLY AND ASSEMBLY ACTIVITIES AT
THE OAK RIDGE Y-12 PLANT

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

The Y-12 Site Office (YSO) has performed a self-assessment for the resumption of Disassembly and Assembly (D&A) activities at the Oak Ridge Y-12 Plant. This assessment included a review of closures for findings identified during the Assessment of Federal Activities, Tasks 4 and 5, of the Defense Nuclear Facilities Safety Board (DNFSB) 94-4 Implementation Plan. All observations identified during these assessments were also addressed. Attached is a summary of this self-assessment.

The results indicate that all DOE Independent Readiness Assessment post-restart findings for Receipt, Storage, and Shipment that were levied against DOE Oak Ridge Operations have been closed. All prerequisites defined in the DOE Plan of Action for D&A have also been satisfied. Detailed evidence for this assessment is available in the Y-12 Site Office Restart Team evidence files located in the second floor conference room in Building 9119.

This assessment, including the corrective actions implemented by the YSO since September 22, 1994, shall serve as the basis for the line management declaration of the YSO readiness to perform oversight for resumption of D&A and all subsequent nuclear operation resumptions at the Y-12 Plant.

If you have any questions or need additional information, please contact Mark Sundie of my staff at 1-6441.



Thomas S. Yison
Restart Team Manager

Attachment

cc w/attachment:
D. E. Christenson, DP-811, ORO

**SUMMARY REPORT
OF THE
DOE SELF-ASSESSMENT FOR DISASSEMBLY AND ASSEMBLY (D&A)**

1.0 INTRODUCTION

Nuclear operations, including Disassembly and Assembly (D&A) activities, were suspended in September 1994, due to observed contractor failure to follow processes in support of safety. Operations personnel, upon discovery of a potential criticality safety violation, did not immediately execute required actions. Evaluation of Criticality Safety Approval (CSA) walkdowns, conclusions from the Type C Investigation, and the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-4 identified inadequate conduct of operations. The inadequacies included lack of rigor and formality as a significant contributing cause of the incident. The Y-12 Site Office (YSO) initially examined its role in the incident, developed a problem analysis (dated September 27, 1994), and determined that the DOE oversight programs for criticality and conduct of operations were not rigorous enough to identify or anticipate the incident. The DOE developed a Plan of Action (POA) for resumption of Receipt, Storage, and Shipment (RSS) and more recently for D&A. These documents identify prerequisites to evaluate the adequacy of YSO personnel and oversight programs prior to resumption. The POAs includes criteria for evaluation of YSO readiness contained in Core Objectives (CO)-31 and CO-33 from DOE Order 5480.31, "Startup and Restart of Nuclear Facilities."

The YSO has completed a self-assessment which provides formal, detailed evidence that satisfies completion of prerequisites and all findings applicable to D&A prior to the beginning of the DOE RA. The details of this self-assessment are on file in the Y-12 Restart Team evidence files. This report provides a summary of the results from this self-assessment.

2.0 EXECUTIVE SUMMARY

The initial DOE self-assessment of September 27, 1994, served as the basis for succeeding plans and commitments for the DOE self-assessment. During the 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



interim, a list of deficiencies are provided on a periodic basis.

3.1.3 Occurrence Reporting Process System (ORPS)

All but one of the facility representatives have access to ORPS. An access password needs to be activated for this individual. This would provide him full access.

The facility representatives weekly meeting agenda was revised to include an action item list, performance indicators for ORPS, and performance indicators for the facility representative assessment program. The Environmental, Safety, and Health (ES&H) and Program Management Branch Chiefs and the Restart Team Leader were added to the weekly meeting notification to encourage participation.

3.2 YSO Qualifications

In response to previous RSS DOE RA observations, and to enhance the technical qualifications of its staff, the YSO has prepared assessment guidelines for the following:

- "Conduct of Operations Assessment Plan"
- "Radiological Protection Assessment Plan"
- "Nuclear Safety Assessment Plan"
- "Management Systems Assessment Plan"
- "Quality Assurance Assessment Plan"
- "Occupational Safety and Health Assessment Plan"
- "Configuration Management Assessment Plan"
- "Conduct of Maintenance Assessment Plan"

These guidelines currently comprise the "YSO Assessment Manual." A future format and distribution of these documents is has not been determined. Once these guidelines are approved, they may be formatted into a DOE Standard for distribution. However, they may also be distributed as reference information to aid in the YSO assessment process. YSO personnel have been trained in conducting assessments. YSO technical staff qualifications were reviewed and verified to be current with the existing Implementation Plan for DNFSB Recommendation 93-3. Full implementation of technical staff training is scheduled for April 1998.



3.3 Lessons Learned

RSS findings will be reevaluated for lessons learned and generic implications. Corrective and preventative actions will be initiated and completed.

In the DOE Assessment Plan for D&A, a line of inquiry was added to each CO. It states that the corrective actions for prior Lockheed Martin Energy Systems, Inc. (LMES) and DOE findings germane to this CO are adequately implemented and are effective in correcting the previously identified condition and preventing its recurrence. Therefore, the last line of inquiry for for each CO addresses lessons learns and generic implications by reviewing corrective actions of previous findings and determining whether or not the deficiency has been permanently resolved.

3.4 Deficiency Tracking System (DTS)

DTS has been established since the restart of RSS. It is currently in use and problems have been documented and corrected. Improvements will be incorporated on a continual basis.

3.5 Special Operation Requests

Open post-operation findings from Special Operation Requests were reviewed for applicability and impact to D&A resumption. No D&A related issues were found.

4.0 Disassembly and Assembly DOE Self-Assessment Review and Verification Activities

See attached matrix.



DOE Self Assessment D and A Resumption

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
DOE IRA Issues from RSS Assessment	OR 1-1	The Y-12 Site Office Facility Representative Qualification Guide does not contain facility-specific (Phase 2) qualification requirements.	x		Miller/Wall	Yes	Full qualifications will be accomplished per an approved (1/26/96) new schedule. This schedule shows all 3 Qualification Standard Cards as complete on 3/96. All Fac. Reps. to be fully qual 7/96. Fac. Reps. are currently interim qualified.
	OR 2-1	Facility Representatives do not have real-time access to the YSO Deficiency Tracking System from their offices.		x	Miller	Yes	Real time access to the YSO DTS will be complete after installation of an Ethernet line. Currently a list of deficiencies are provided on a periodic basis.
	OR 2-2	The Deficiency and Request for Approval Tracking System (DTS), Performance Indicators, and DOE Y-12 Office Monthly Report to the contractor are not mature.		x	McCarten	Yes	A DTS has been established, is operating, was studied for improvements, and is being revised.
	OR 2-3	The Y-12 Site Office has not reviewed closure of the LMES Readiness Assessment Pre-Start findings.	x		Sundie	Yes	LMES RA findings have been reviewed for closure as a part of CO-30 Line Item 30.4 in the DOE Assessment Plan. Results are documented in the YSORT Final Report for D&A.
	OR 2-4	Assessment guides for performance of Conduct of Operations, Radiological Protection, and Criticality Safety are informal and have not been reviewed/approved by management.		x	Hoag	Yes	Assessment guide lines have been prepared and issued. In addition other assessment guidelines have also been prepared. YSO staff has been trained.
	OR 2-5	Two Facility Representatives from Environmental Management who operate in Waste Management facilities at the Y-12 Site do not report to the Y-12 Site Office Manager.	x		Nelson/Wall	Yes	This was resolved during RSS. The RSS evaluation applies to D&A also.
	OR 2-6	The documentation of the formal self-assessment program at the Oak Ridge Operations Office is not capturing major changes being made in the program.	x		ORO Larkin/Hoag	Yes	Due to reorganization in ORO, ORIGS remain in revision but should be completed by July 1996.
	OR 2-7	There is currently no formal program for the orderly transfer of deficiencies and issues from the YSORT into the tracking, and routine oversight activities for the YSO.		x	Hoag	Yes	Pre-restart findings resolved thru ESAMS. Post-restart findings loaded into DTS and ESAMS, and resolved. No formal procedure exists. Findings are handled this way because they are fast track in nature and experience indicates success with this process.
	OR 3-2	Federal programmatic noncompliance exists concerning DOE Order 5480.23. Nuclear Safety Analysis Reports, without an approved Compliance Schedule Agreement or Exemption.	x		Hoag	Yes	This item was resolved for RSS. RFA-CSAs were prepared.
	OR 3-3	The schedule for the Safety Analysis Report Upgrade Program (SARUP) developed to address SAR and OSR/TSR noncompliance with DOE Orders 5480.22 and 5480.23 has not been approved by DOE.	x		Hoag	Yes	The SARUP is to be DOE approved by ORO in late March 1996.
DOE HQ Task 4 Assessment	F-COO-1.1-2	DOE approved matrices of applicability for implementation of DOE 5480.19 do not exist for Y-12 facilities	x		Christenson	Yes	Applicability matrices were developed by LMES and have been approved by DOE for acceptability.
	F-COO-1.2-3	Evaluate need for improved structure to weekly FR meeting.		x	Miller	Yes	FR weekly meeting agenda now includes action items list, and performance indicators for ORPS and the FR Assmnt Program. ES&H and Program Branch Chiefs and the Restart Team Leader were added to the FR weekly meeting notification e-mail list.
	F-COO-1.3-8	YSORT validation and documentation of approval of DOE RSS RA corrective action plans and findings closure packages were not performed in accordance with YSO 5.4.1 and did not require lessons learned/generic implications as required by YSO 5.4.1.	x		Sundie	Yes	Root Cause Analysis was performed. It addressed: adequacy of procedures, lessons learned, and management. A YSORT post finding identifies on-compliance to LMES proc on this issue. This is discussed in the YSORT Final Report for D&A.
	F-COO-3.2-1	Facility Representatives are responsible under DOE O 232.1, Occurrence Reporting and Processing of Operations Information to look for trends and lessons learned information from the occurrence	x		Miller/Wall	Yes	As of 2/22/96, ORPS in place and accessible to all FRs.

DOE Self Assessment D and A Resumption

Source of Issue	Issue Number	Description	Findings	Observation	Assignment	Issue Resolved?	Discussion/Notes
		reporting system. Many of the Y-12 facility representatives are hindered in performing this function due to a lack of convenient access to the ORPS System.					
	F-COO-3.2-2	Roll-up occurrence reports are not in accordance with requirements, and current information is not maintained in the ORPS System.	x		Jackson	Yes	LMES will revise Y80-161 to include all categorization criteria included in Order 232.1 YSO and DP1 Office will approve. An approved deviation allows Y-12 to categorize and report under 232.1 even though contractually they are under 5000.3B.
DOEHQ Task 6 Assessment	1	Review recommendations from Task 5 assessment for applicability to D&A resumption.			Livesey	Yes	No commitments applicable to D&A.
Prerequisites from the DOE D&A Plan of Action	1	LMES has completed their Readiness Assessment and all prestart findings have been resolved, and the ready-to-proceed memorandum has been transmitted to DOE.			Tison	Yes	After closure of pre-restart findings, LMES is required to transmit to DOE an RTP letter. Confirmation of this letter is a part of CO-30 and is discussed in the YSORT D&A Final Report.
	2	YSO has completed a Validation Review of the contractor management self-assessment and RA, and the LMES Readiness-to-Proceed Memorandum has been endorsed by YSO and transmitted to the Restart Authority.			Christenson	Yes	A validation review of LMES MSA & RA is performed as part of CO-30. This has been completed and is documented in the YSORT D&A Final Report. The RTP Memo has been endorsed by YSO and transmitted to the restart authority.
	3	YSO facility representatives are assigned and qualified in accordance with locally developed interim qualification standards. Long-term plans are being developed for eventual qualification in accordance with DOE Standard (DOE-STD-1063-83), Establishing and Maintaining a Facility Representative Program at DOE Nuclear Facilities, dated August 1993. If the facility representative has not completed the interim qualifications, a mentor is assigned as a compensatory measure. The facility representative mentoring requirements are defined and adequate to safety as a compensatory measure.			Wall/Miller	Yes	All Facility Representatives (FRs) have completed interim qualifications and are interim qualified for 18 months. The first re-interim qual is due 12/98. Full qualifications are projected to be completed by 5/99.
	4	The use of mentors, as compensatory measures for Conduct of Operations requirements, is documented. Qualifications, experience, and responsibilities for mentors have been established, mentors have been selected, and mentors have been assigned to specific tasks. Performance objectives have been established that define the minimum performance of YSO personnel prior to mentor removal.			Hoag	Yes	No Mentors for conduct of operations are required. Oversight of conduct of operations will be accomplished by Fac Reps, YSO Restart Team Leaders, and the YSO Restart Team.
	5	Documentation of compensatory measures is complete. YSO personnel understand the compensatory measures and when they are required. The conditions for the removal of compensatory measures are documented and understood by YSO supervisors. A program for the periodic management assessment of the continued need and adequacy of compensatory measures is in place and implemented.			Hoag/Carpenter	Yes	Documentation of compensatory measures is complete. A program to periodically review all compensatory measures has been addressed in the guideline 'Compliance Management Compensatory Measures Assessment Plan' located in the YSO Assessment Manual.
	6	YSO management self-assessment (MSA) has been completed and verifies readiness of YSO to oversee the resumed facility operations. The MSA has verified:			Sundt	Yes	This document completes this activity.



DOE Self Assessment Report and A Resumption

Source of Issue	Issue Number	Description	Finding	Observation	Assignment	Issue Resolved?	Discussion/Notes
Prerequisites from the DOE D&A Plan of Action (continued)	6.a	The post-operation findings from applicable special operation requests that have been determined to be prestart findings have been closed.			Christenson/Sundie	Yes	Post Operational findings for SORs have been reviewed for applicability to D&A. This review was done by LMES as a corrective action to resolve prestart findings from YSORT on CO-25 from the LMES D&A POA.
	6.b	The restart actions planned in response to DNFSB Recommendation 94-4 have been reviewed for pre-resumption items and any identified actions completed.			Sundie	Yes	The 94-4 Corrective Action Plan was reviewed. It does not contain issues applicable to D&A.
	6.c	The Phase II items identified as restart issued in the 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.			Hoag	Yes	These issues have been addressed, documented, and are discussed below.
	c.1	Provide guidance in the developments of the LMES Plan for Continuing and Resuming Operations			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.2	Prepare the DOE line assessment plan, including lines of inquiry and instruction, for review of LMES actions for Continuing and Resuming Operations			Hoag	Yes	The D&A Assessment Plan was prepared and issued October 19, 1995.
	c.3	Prepare the YSO Readiness Assessment (RA) Plan of Action for transmittal to the ORO AMESQ for use in developing the RA Implementation Plan.			Hoag	Yes	The DOE YSO POA was prepared and issued June 7, 1995.
	c.4	Review and walk-down a sample of continuing operations to verify satisfactory completion of the corrective actions (i.e., Group 1, concentrating on essential operations involving CSAs).			Hoag	Yes	The Configuration Management Control System, based on 5480.24 requires reliance on equipment spacing design. This is not being done. Equip. labeling is inadequate. Operator aid posting is inadequate. During walkdowns most CSAs were found to be inaccurate.
	c.5	Review Requests for Special Operations (involving nuclear activities). For Non-nuclear Requests for Special Operations and Non-nuclear Operations Resumption Requests, YSORT validates the contractor's determination that the special activity is non nuclear documents this in a log, and then assigns these requests to the YSO ES&H Branch for review/assessment. YSORT will continue to review Requests for Special Operations for Nuclear Operations until the YSO Readiness Review Group assumes this responsibility.			Hoag	Yes	Review of requests for special operations requests (SORs). See 6.c.12.
	c.6	Upon approval and initiation of the Readiness Review Group, bring all reviews and walkdowns being performed to a conclusion and issue status reports.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.7	YSORT review and comment on AMESQ draft Readiness Assessment procedure and Implementation Plan documents.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.8	Determine the need to reprogram funding in FY-95 to support both LMES and DOE corrective actions.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.



DOE Self Assessment D and A Resumption

Source of Issue	Issue Number	Description	Findings	Observations	Assignment	Issue Resolved?	Discussion/Notes
Prerequisites from the DOE D&A Plan of Action (continued)	c.9	Review Y-12 and ORO actions for DNFSS Recommendation 93-8 and determine if additional actions are required.			Wall/Carpenter	Yes	Recommendation 93-8 was reviewed and no actions were determined to be applicable to D&A.
	c.10	Assume responsibility for the continuing assessment of commitments in the LMES Resumption Plan related to the safety of both nuclear and non-nuclear operations. Also, assume review responsibility for all Requests for Special Operations involving non-nuclear operations. Submit recommendation for concurrence of requests to the Y-12 Site Manager.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.11	Assume responsibility for the continuing assessment of commitments in the LMES resumption plan related to conduct of operations improvements.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.12	Initiate the YSO Restart Team (YSORT) headed by a lead DOE Restart Manager to perform reviews for all Requests for Special Operations (nuclear). Submit recommendation for concurrence for requests to the Y-12 Site Manager. Also, YSORT will review all Requests for Special Operations (including non-nuclear) to validate the LMES determination that the facility/activity is non-nuclear. A log of this validation will be maintained by YSORT. If YSORT agree with the determination then it will be assigned to the YSO ES&H Branch for line assessment for safety of non-nuclear activities.			Hoag	Yes	YSORT reviews, tracks, and logs SORs for nuclear and some non-nuclear activities. For SORs reviewed by YSO, logs of SORs and tracking of SORs are documented in various locations.
	c.13	Review the LMES operations mentoring program and issue a summary evaluation report.			Hoag/Christensen	Yes	This activity was completed during DOE assessment of 5480.18, Core Objective 18 for D&A.
	c.14	Contract additional support services personnel with commercial nuclear and/or Naval nuclear experience to assist in monitoring and assessing LMES corrective action implementation.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.15	Review the status of LMES corrective actions related to the resumption plan in bi-weekly meetings. Review LMES Requests for Action (RFA) in accordance with YSO procedure. Coordinate independent review of RFAs by AMESQ staff.			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
	c.16	Prepare a plan to review and walkdown all resumption requests for nuclear operations to verify satisfactory completion of the resumption requirements (Groups III and IV from Y/AD-823)			Hoag	Yes	This issue was resolved as part of RSS resumption activities.
7	All Requests for Approvals (Compliance Schedule Approvals) required for the facility restart have been approved.			Hoag	Yes	All RFAs have been approved as documented for CO-27. Refer to the YSORT Final Report for D&A.	
YSO Monthly Reports	1	Review and evaluate deficiencies and issues contained in YSO Monthly Reports for D&A significance. Determine if the issues are D&A pre-start.			Hoag, Carpenter, Sundie & Miller	Yes	Fac Reps - Inadequate OSR implementation and proc doc control. Comp measures are in place for D&A restart. Prog Mgmt & ES&A - None applicable. YSORT - Documents to produce & control procedures is a site level issue & not within the D&A resumption scope.

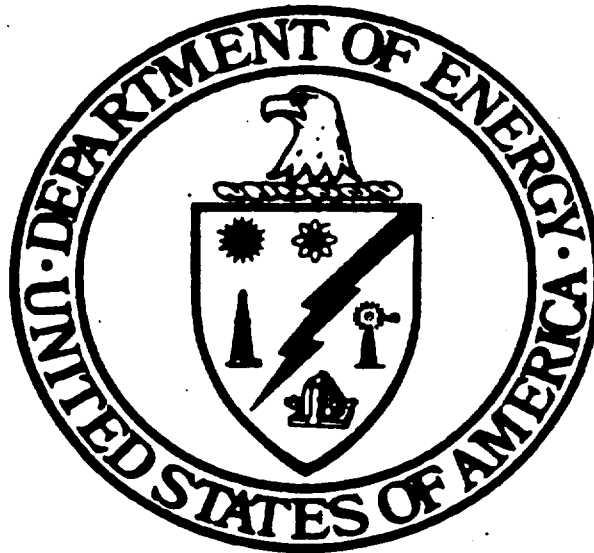
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U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS

Y-12 SITE OFFICE RESTART TEAM

ASSESSMENT OF THE
DISASSEMBLY AND ASSEMBLY
ACTIVITIES AT THE Y-12 PLANT

February 23, 1996



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(NAME AND TITLE)



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Y-12 SITE OFFICE RESTART TEAM

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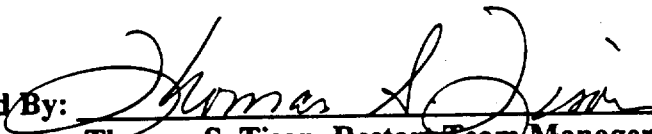
February 23, 1996

Submitted By: 
Dale E. Christenson, Team Leader

Date: 2/23/96

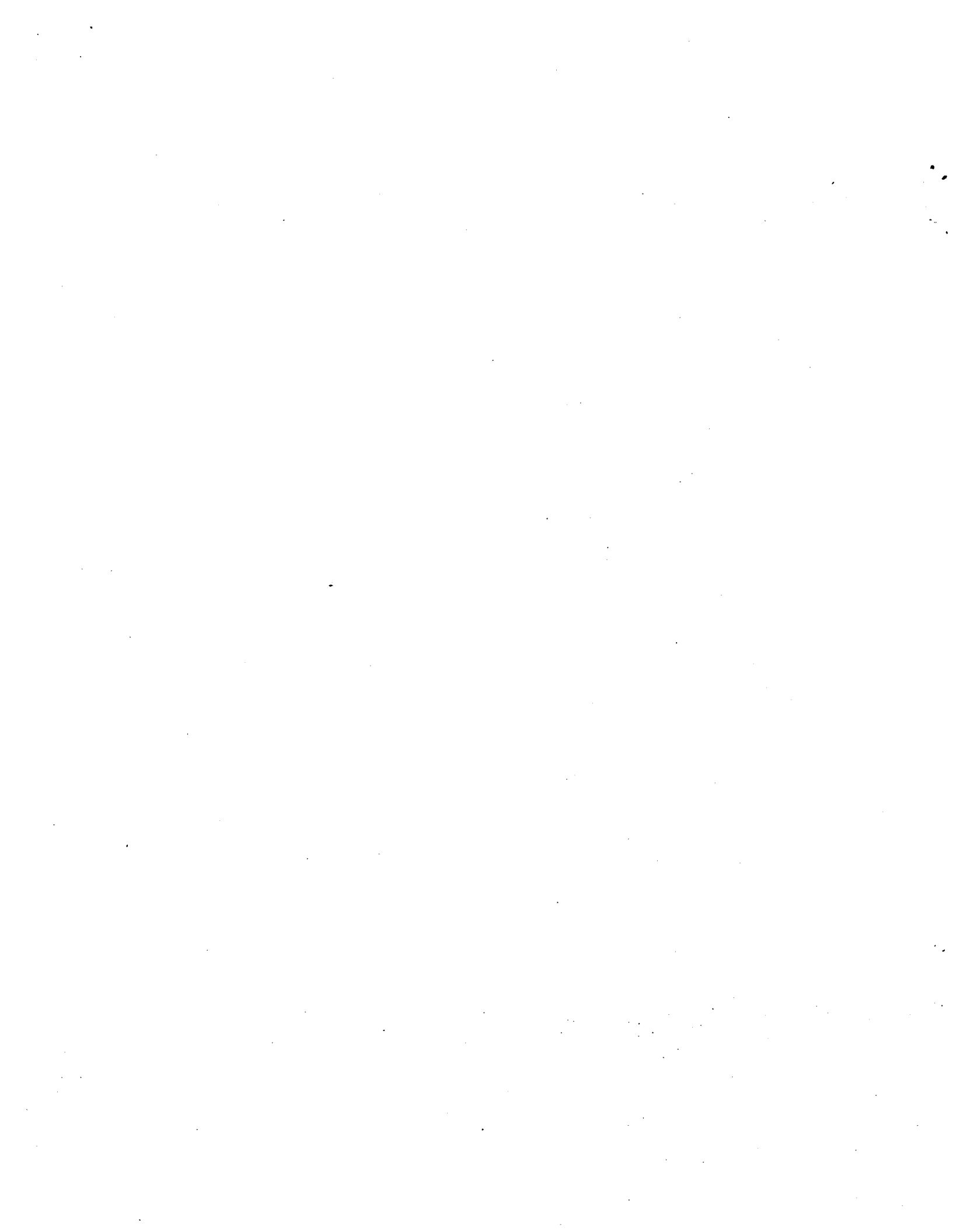
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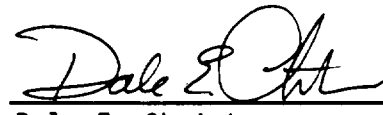
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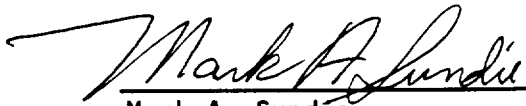


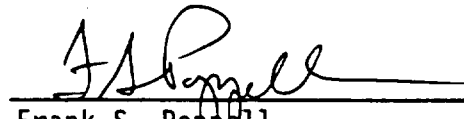
ASSESSMENT OF THE
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Y-12 Site Office Restart Team

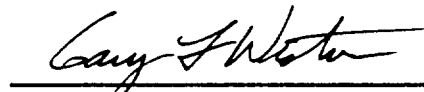

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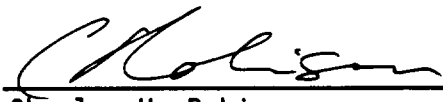

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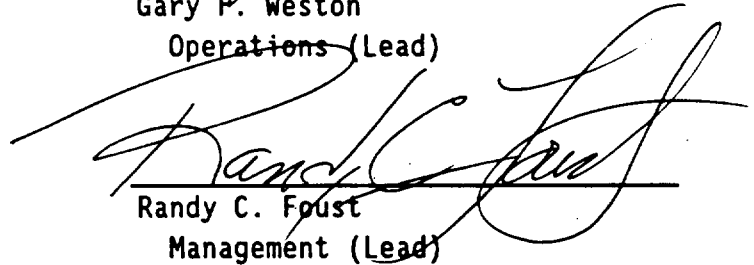

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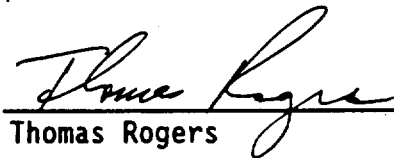

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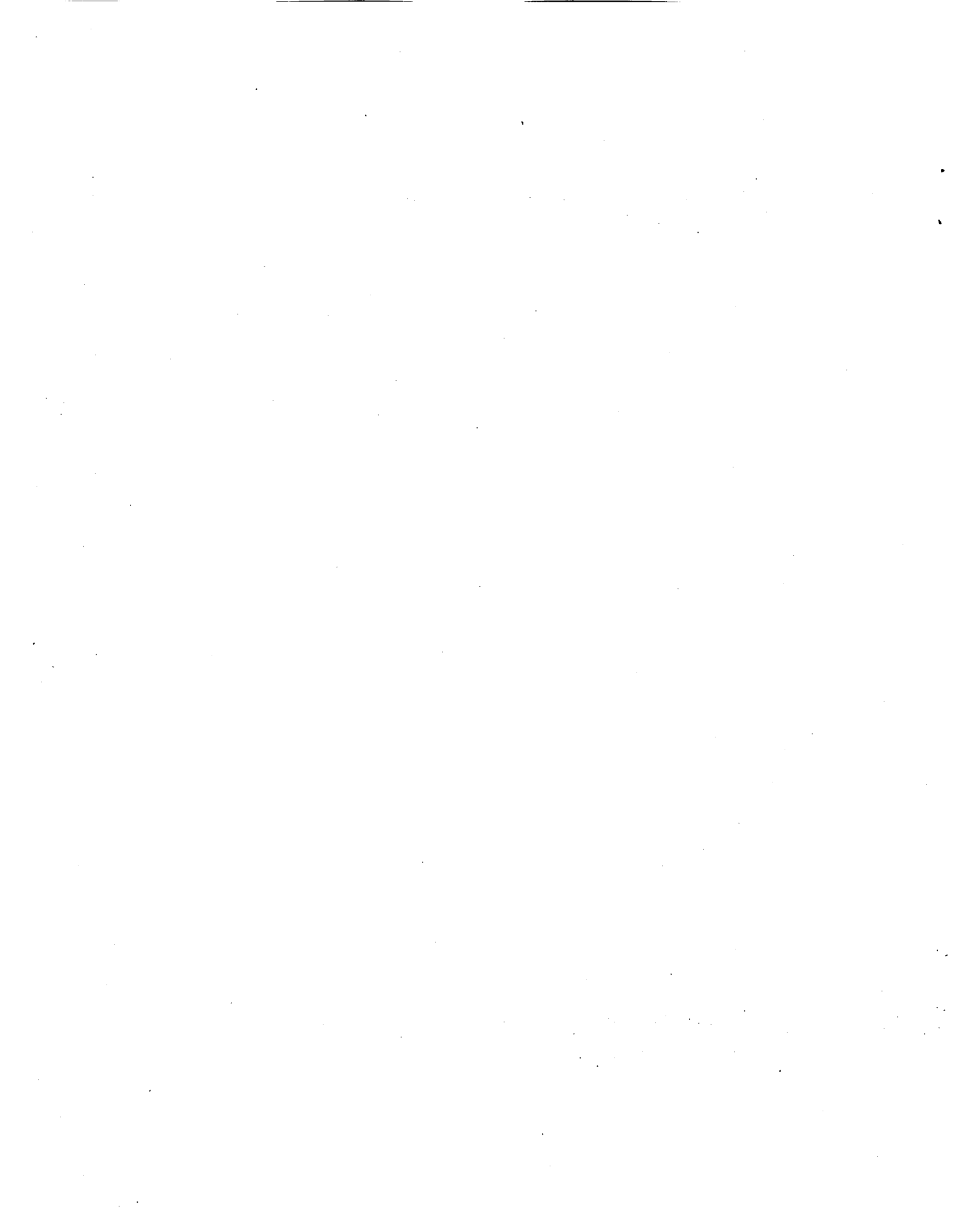

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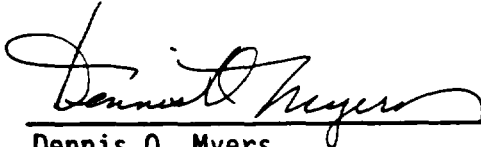

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ASSESSMENT OF THE
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AT THE Y-12 PLANT

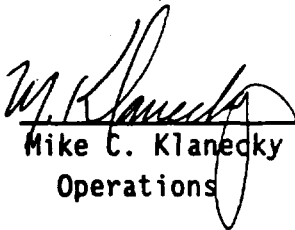
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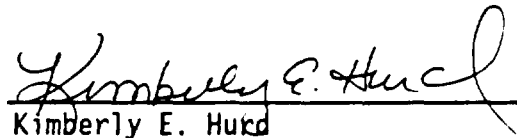

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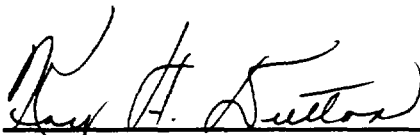

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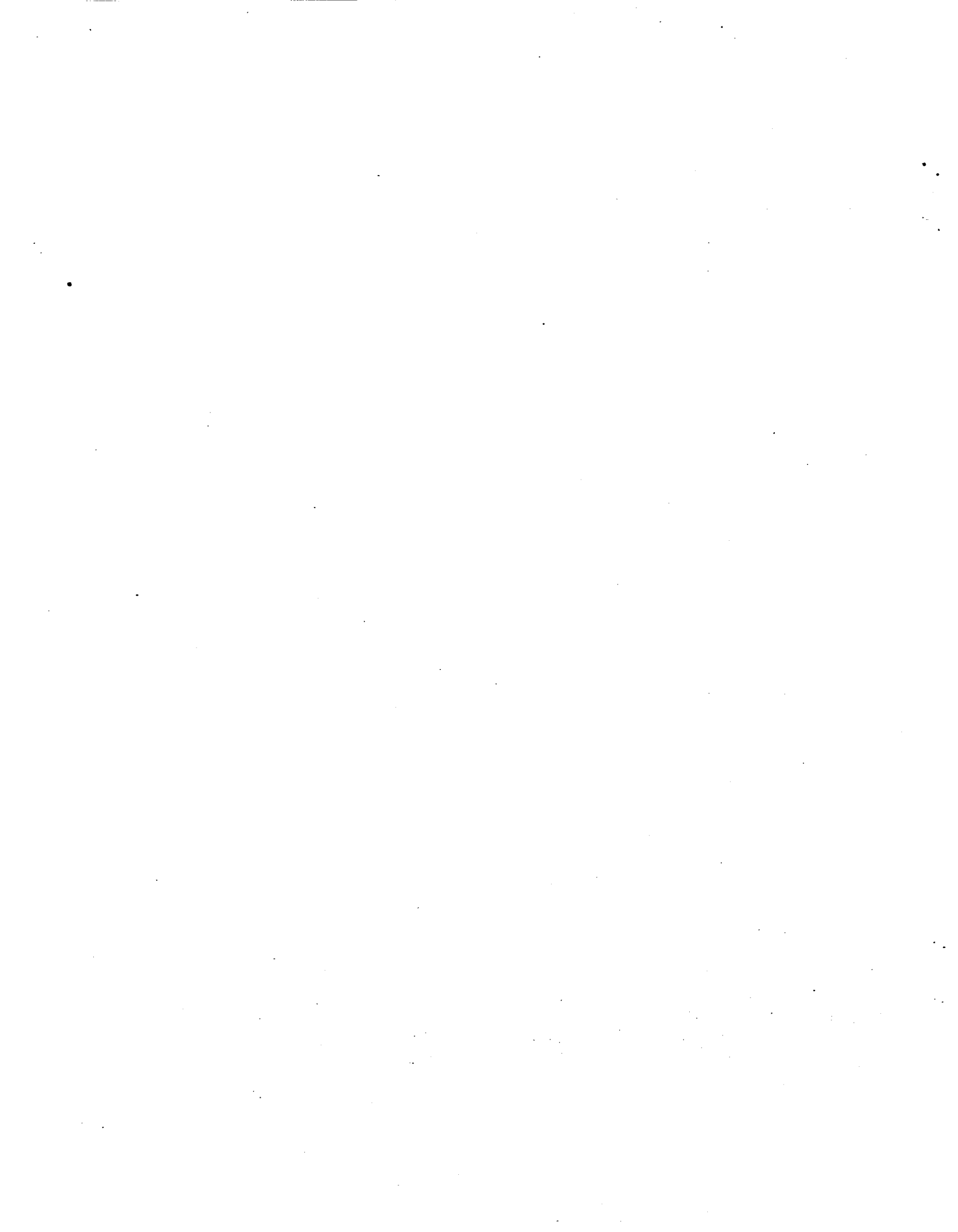


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EXECUTIVE SUMMARY

The Y-12 Site Office Restart Team (YSORT) conducted a review to verify the ability of Lockheed Martin Energy Systems, Inc., (LMES) to conduct a safe resumption of Disassembly and Assembly (D&A) activities, in accordance with DOE Order 5480.31, *Startup and Restart of Nuclear Facilities*, requirements following the stand-down of Y-12 facilities on September 22, 1994. This review was conducted to satisfy the DOE line management responsibility for the verification of the contractor's readiness to resume and to provide a recommendation to the approval authority to proceed with the DOE Readiness Assessment (RA). The YSORT review of LMES D&A mission area activities was conducted from November 1995 to February 1996.

The YSORT consisted of 20 members with diverse nuclear backgrounds. The YSORT activities were full-time, dedicated efforts in planning and executing Y-12 Site Office (YSO) oversight of resumption activities at Y-12.

The YSORT review was performed in accordance with *Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly*, dated October 19, 1995, that was scoped to be consistent with the Lockheed Martin Energy Systems, Inc., Document Y/OA-6238, *Readiness Assessment Plan of Action (POA) for the Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant*, DOE Order 5480.31, and with items required for resumption as identified by LMES. The YSORT review was performed using the Core Objectives (CO) described and scoped in the Document Y/OA-6238. The review was organized into six functional areas which included Management, Operations, Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Startup Test and Assessments. Part of the YSORT review included assessments of LMES implementation of DOE Order 5480.31 requirements in the performance of their Management Self-Assessment (MSA) and the LMES RA.

The YSORT's review generated 102 findings. Fifty-five of these findings were designated by YSORT as pre-restart and 47 findings were designated as post-restart. LMES had closed all pre-restart findings that were generated by YSORT with the exception of three findings at the time of this report. These remaining pre-restart findings have YSORT-approved corrective action plans (CAPs) with closures scheduled to be completed by March 1, 1996. The post-restart findings are either closed or have YSORT-approved CAPs.

The LMES MSA and RA were satisfactorily completed and verified the readiness of the D&A activities. Three additional pre-restart issues remain open from the LMES RA. The remaining pre-restart issues have approved CAPs with closures scheduled to be completed by March 1, 1996. YSORT has verified the

closure of all closed pre-restart LMES RA findings. LMES submitted a letter entitled "Contract DE-AC05-84OR21400, Report of Readiness to Proceed with Operation of the Disassembly and Assembly (D&A) Mission Area - Nuclear," dated February 23, 1996, to DOE management that certified their readiness to resume D&A Operations and documented an acceptable status for all open items.

The overall YSORT conclusion was that D&A facilities, programs, and personnel are ready to safely resume normal operations. This conclusion is contingent upon the adequate closure of the remaining open pre-restart findings. LMES has made significant improvements in how they conduct work activities since the September 1994 stand-down. Continuous improvements are expected as LMES addresses corrective actions for post-restart programmatic findings.

U.S. Department of Energy
Oak Ridge Operations
Y-12 Site Office Restart Team
Assessment of the Disassembly and Assembly
Activities at the Y-12 Plant

1.0 INTRODUCTION

The United States Department of Energy (DOE) formalized a system to standardize and control the process of facility startups as outlined and administered by DOE Order 5480.31. As part of this process, the DOE line management must validate the contractor's state of readiness and then must provide a recommendation to proceed with the DOE RA. The overall framework to restart facilities at the Y-12 Plant is included in Y/AD-623, *Plan for Continuing and Resuming Operations, Oak Ridge Y-12 Plant*, that was concurred on by the Assistant Secretary for Defense Programs. To meet the intent of the DOE Order 5480.31 requirements, the DOE YSO organized and tasked a YSORT of subject matter experts (SMEs) to evaluate LMES readiness to resume D&A activities. YSORT biographical information is provided in Appendix 7.1.

The results of the YSORT assessment of D&A and the recommendations to the Y-12 Site Manager are documented in this report.

2.0 SCOPE

The YSORT assessment, which was conducted in accordance with *Y-12 Site Office Restart Team Assessment Plan for Disassembly/Assembly Activities Resumption*, evaluated the adequacy of the actions taken by LMES to prepare D&A for restart in six functional areas. These functional areas (Management, Operations, Procedures and Programs, Safety Envelope, Training and Qualification/Level of Knowledge, and Startup Test and Assessments) were assessed, and the results were documented in accordance with YSO Operating Procedure YSO-5.4.1, *Restart Team Assessments*.

3.0 REFERENCES

A complete list of references is identified in Appendix 7.4.

4.0 FUNCTIONAL AREA REPORTS

4.1 Management

YSORT evaluated the assessment activities for the Management Functional Area (defined by the YSORT Assessment Plan for Disassembly and Assembly Operations) by a combination of interviews, document reviews, observation and review of the LMES MSA, and observation and review of the LMES RA.

4.1.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Management Functional Area using the following COs:

CO-20 requires confirmation that personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements, and that through their actions, demonstrate a high priority to comply with these requirements.

CO-24 involved a determination whether functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety.

CO-25 determined whether 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.

CO-27 required a review to determine if nonconformances to applicable DOE Orders have been identified and if schedules for gaining compliance have been justified in writing and formally approved.

CO-29 required an assessment to determine if a program was established to promote a site-wide safety culture.

4.1.2 Conditions of Contractor Programs and Procedures

4.1.2.1 Core Objective 20

An assessment was performed by conducting interviews and evidence file reviews to determine if personnel exhibit an awareness of

public and worker safety, health, and environmental protection requirements and if through their actions, demonstrate a high priority to comply with these requirements. The assessment also included a review of radiological practices in Buildings 9204-2 and 9204-2E. This review included internal and external dosimetry, facility contamination, boundary control, radiological instrument calibration and radiation work permits (RWPs).

Interviews of D&A resumption personnel and a review of procedures indicated that concern for safety was evident within plant policies, procedures, and employee practices. All employees and management personnel that were interviewed demonstrated an understanding of safety practices in their daily operations and the importance of safety in the performance of duties at Y-12 Plant. They also demonstrated adequate understanding of their rights and duty to raise safety concerns to their management and that they were empowered to stop a job at any time to get resolution of a safety issue.

The review of radiological control practices within Buildings 9204-2 and 9204-2E indicates that calibration of radiological instruments to support D&A was adequate with no deficiencies identified. Also, the development and use of radiological work permits were evaluated and determined to be adequate. A YSORT concern was identified that involved LMES' efforts to suspend radiological procedures. The cancellation of formal RadCon procedures was not conducted in accordance with LMES Procedure Y10-102, *Operating Procedures Development, Revision, and Control*. In addition, a formal technical qualification program was not in place prior to cancellation of the procedure. This deficiency was identified as a post-restart issue.

Further details of the CO assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3007, 3016, 3025, 3032, 3033, 3038, 3043, 3044, 3056 and 3097. Two post-restart findings were identified during the course of this assessment.

4.1.2.2 Core Objective 24

An assessment was performed to determine if the functions, assignments, responsibilities, and reporting relationships were clearly defined in LMES-approved documents and are adequately implemented throughout D&A Operations.

The assessment was performed by interviews and documentation reviews to determine if the resumption activities defined by CO-24 were performed and effectively implemented. Interviews were performed to gather information on the knowledge and awareness of the D&A Operations personnel on their roles and responsibilities. The assessment was performed to take into consideration the activities performed by the support organizations as defined by Request for Approval (RFA) MMES/Y-12-DOE-5480.19-CSA-160B, *Conduct of Operation Implementation Deficiencies*.

The review demonstrated that the roles and responsibilities are defined, understood, and effectively implemented. Two post-restart findings were identified during the course of this review. These issues focus both on requiring Nuclear Operations to provide organizational information (as described by the Lockheed Marietta Energy Systems, Inc., *Nuclear Operations Conduct of Operations Manual*) to support organizations and on providing briefings or training to support organizations to reinforce their knowledge and awareness of interorganizational agreements on implementation of the Nuclear Operations Conduct of Operations Manual. These issues are not considered safety-significant and outside the pre-restart scope of the Document Y/OA-6238.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3003, 3023, and 3024.

4.1.2.3 Core Objective 25

A review was performed on the process employed by LMES to determine the adequacy of corrective actions taken to resolve deficiencies identified from internal and external assessments conducted since October 1993. Also included was a review of the deficiencies from previous restarts, which were classified as post-restart, to determine their acceptability to remain open after D&A resumption.

Lists of internal and external assessments conducted since October 1993 were compiled and placed in the evidence file. The deficiencies, along with their corresponding corrective actions, were reviewed by the respective organizations management to determine if the corrective action taken was adequate, and were evaluated for pre/post-restart significance. Numerous findings

were identified from this review relating to documentation deficiencies that were identified from the evidence file review. The contractor's issues management program and procedures continue to undergo revision and upgrades. The appointment of an issues manager and the intended revision to procedures are moving the contractor in a positive direction. Procedural improvements are in progress to place time limits on resubmittal of rejected deficiencies, to incorporate generic implication analysis, and to revise deficiency management-related procedures. The condition of contractor programs and procedures addressing issues and deficiency management is, therefore, in a state of continuous improvement but is adequate for restart.

Results from this review indicate that the LMES evaluation process lacked attention to detail with respect to 1) issues that were included in the scope and 2) the preparation of the evidence packages. In addition, LMES failed to evaluate deficiencies for generic implication as required by site procedures. As a result, 13 pre-restart findings and 1 post-restart finding were identified during the course of this assessment. LMES has taken adequate actions necessary to resolve and close the pre-restart findings. As such, the criteria associated with CO-25 have been satisfied to a level necessary to support the resumption of D&A.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3004, 3005, 3037, and 3072.

4.1.2.4 Core Objective 27

An assessment was performed to verify that baseline compliance reviews have been conducted on the 51 DOE Orders of Interest to the Defense Nuclear Facilities Safety Board (DNFSB) that are applicable to D&A and that non-compliances are addressed in DOE-approved RFAs or exemptions. The assessment was performed by reviewing D&A evidence files, documentation, correspondence, and by conducting interviews. The assessment also included a review to verify that compensatory measures, actions, and schedule commitments have been implemented and are effective.

Baseline compliance reviews have been conducted for the 51 DOE Orders of Interest to the DNFSB, and all non-compliances applicable to D&A are addressed in DOE-approved RFAs. Three D&A-applicable RFAs, which were previously approved, are currently

undergoing a revision. Revisions of RFA CSA-2B, RFA CSA-40C, and RFA CSA-47B are in the review and approval process. The RFA process is an ongoing living process. As resumption efforts continue and as assessments are performed, order non-compliances will be identified, documented, approved, and tracked to closure by existing systems. Currently, these systems are being enhanced by DOE-ORO, DOE YSO, and LMES compliance personnel who stay in constant communication.

The assessment of CO-27 yielded two post-restart findings. The findings involve unreasonable resubmission schedules for rejected RFAs and request for closures (RFCs) and the lack of evidence to verify implementation of compensatory measures. Efforts have been made by the contractor to close both of these findings. Inadequate procedures contributed to the lack of punctual resubmittal of rejected RFAs and RFCs. As this generic cause was recognized by the contractor, the CAP for this finding includes a revision to associated procedures. The findings are post-restart, and corrective actions by the contractor are in progress.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3027, 3028, and 3029.

4.1.2.5 Core Objective-29

The D&A facilities have instituted an effective safety culture for employees in accordance with Y-12 Plant policies and procedures. The safety culture has been integrated into policies, procedures, daily briefings, and pre-job evolutions processes. Documentation and personnel interviews indicate that there has been a comprehensive approach to establishing safety as a cultural entity at Y-12 Plant. Additionally, an acceptable Employee Concerns Program at Y-12 Plant is implemented by Procedures Y70-027, *Safety, Health, and Environmental Suggestions, and Complaints*; Y60-164, *Lessons Learned*; and Y10-111, *Required Reading*.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3017, 3019, 3020, 3041, 3057, and 3097. No findings were identified during the course of this assessment.

4.1.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Management Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Lack of evidence to show that the deficiency identified from LMES MSA on Receipt, Storage, and Shipment (RSS)(Finding MG-07) was not repeated on D&A;
- Findings generated from prior DOE and LMES assessments were not evaluated for D&A impact and applicability;
- Evidence files for CO-25 do not contain findings or deficiencies that were identified after May 2, 1995;
- LMES conclusion that post-restart RSS findings are also post-restart for D&A;
- Numerous pre-restart findings identifying deficiencies with the process formulated by LMES to complete CO-25 activity;
- Follow-up action to address deficiencies which were determined to have unsatisfactory corrective action during the CO-25 review; and
- Failure to perform generic applicability review as required by LMES Procedure QA-16.1, *Corrective Action Program*.

In total, 12 pre-restart findings and 8 post-restart findings were identified. LMES has taken sufficient action to close the pre-restart deficiencies.

4.1.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review. Those findings classified as pre-restart either have been closed or resolved for the purpose of D&A resumption.

Contractor performance in the evaluation of deficiencies for generic applicability and causal evaluation are still a concern and weakness. Findings have been written to require LMES to formally address these issues for D&A resumption. Programmatically, LMES has developed a CAP to address these issues as part of an overall programmatic improvement initiative.

4.1.5 Conclusion

Based on the results of the assessment activities associated with COs-20, -24, -25, -27, and -29, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria, noting that the pre-restart deficiencies identified in the assessment reports have been resolved and closed. All activities required by the Document Y/OA-6238 have been completed to a level necessary to support resumption of D&A Operations.

4.2 Operations

The YSORT evaluated Conduct of Operations implementation to determine the readiness to resume D&A activities. This evaluation included the review of programs and procedures; observation of field activities, including Quality Evaluation (QE) Special Operations evolutions; the performance of the LMES personnel during the MSA and RA; and the actions taken by LMES to correct YSORT and other findings.

4.2.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Operations Functional Area using the following COs:

CO-19 required implementation of the following chapters of DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*.

<i>I</i>	<i>Organization and Administration</i>
<i>II</i>	<i>Shift Routines and Operating Practices</i>
<i>V</i>	<i>Control of On-the-Job Training</i>
<i>VI</i>	<i>Investigation of Abnormal Events</i>
<i>VIII</i>	<i>Control of Equipment and System Status</i>
<i>XIV</i>	<i>Required Reading</i>

XV *Timely Orders to Operators*
XVI *Operating Procedures*
XVII *Operator Aids*

An assessment of mentor program activities for D&A was also performed as part of CO-19 activities.

CO-22 was used as a basis for evaluation of the LMES operational drill program, including management's involvement and support; adequacy of drill procedures scenarios, guides, and records; and the effectiveness of observed drills.

4.2.2 Conditions of Contractor Programs and Procedures

LMES had begun the development and implementation activities of the Conduct of Operations Program before the 1994 stand-down, but had been unsuccessful in achieving the necessary changes in plant programs to effectively change the culture. Comprehensive implementation plans for conduct of operations were not available until May 1995. As a result, the LMES Conduct of Operations Program was not fully developed and was inconsistently implemented across the Y-12 Plant organizational units. The program has since progressed to a level where the basic program elements have been implemented.

DOE identified a weakness in D&A operations supervision to recognize and respond to issues and deficiencies confronted during the dry runs required by the MSA for demonstration activities. Additional management guidance, training of line supervision, and demonstration of operational response to upset conditions were required in order to correct this problem area. YSORT has reviewed these actions and has observed improvements on the performance of D&A supervision. Formal observation training for D&A supervision will also be required as a post-restart action to further develop the supervisors ability to recognize issues and deficiencies.

The contractor had not fully implemented the Conduct of Operations program in the area of equipment control and system status, notably with safety system configuration. The condition of the existing configuration drawings for both the Criticality Accident Alarm System (CAAS) and Fire Protection System did not allow

effective implementation of operations requirements. The drawings were deficient in both reflecting the latest "as-built" of the systems as well as not being effectively controlled to ensure that operations had the current engineering issue of the drawing. An intensive program was initiated to walkdown, update and control the issuance of these required drawings. The updates of the electrical drawings for the Criticality Accident Alarm and mechanical drawings for Fire Protection Systems had not been completed at the time of this report, but will be completed prior to restart. The "as-built" electrical drawings for fire protection will be completed post-restart. Compensatory measures, as defined by LMES, will require additional Shift Technical Advisor (STA) review for all changes which affect system status and involve these electrical drawings. YSORT has reviewed the completed actions for these drawing updates inclusive of the compensatory actions for the STA review and the new drawing control program. Based on this assessment, YSORT considers the actions taken as acceptable for interim compliance to the configuration requirements defined by Chapter VIII of the Nuclear Conduct of Operations Manual.

The contractor had not fully implemented the Conduct of Operations Program in organizations which provide support to the Disassembly and Storage Organization (DSO), primarily with the Quality Organization (QO). This facility tenant organization performs radiography, dimensional inspection, ultrasonics, and material testing as an integral part of the assembly and disassembly operations. The level of program development and implementation for the QO was at a lower level of implementation than would be required to support restart of the mission area. Findings were issued in QO conduct of operations training, procedures, standing orders (SO), operator aids, compensatory measures, and self-assessments areas.

YSORT had initially found that the documentation of the QO Conduct of Operations Program neither adequately defined the program nor its implementation to the requirements of RFA-160B. LMES has initiated additional program development efforts to provide management and floor operation mentors to this area. Five additional mentors have been assigned to this organization to provide the interim corrective actions for restart.

Other conduct of operations deficiencies were initially identified in interface between operations and the support organizations, specifically, with Fire Department Operations, RadCon, Plant Shift Superintendents (PSS) Office, and the Nuclear Criticality Safety Department (NCSD). Specific implementation problems were found in selected support organizations implementation of Memorandums of Understandings (MOUs) for timely orders, operating procedures, required reading, operator aid programs, and training. The identified weaknesses required improvements in rigor and formality of operations and strengthening these interface areas with line operations. The LMES CAPs and their implementation for correcting these deficiencies have been reviewed and assessed by YSORT and are judged as acceptable for restart.

The formality and rigor of D&A procedure adherence have been improved by line operations. During the initial assessment period for D&A, it was found that line and support organization personnel did not always recognize procedure inadequacies. As a result, they did not always stop operations to process approved corrections when problems were identified. In response to the findings, the contractor has revised specific procedures, reperformed procedure dry runs as part of the verification and validation (V&V) process, and reemphasized the need for good procedure use practices to its staff. Additionally, LMES has instituted a new procedure control program and has made other program improvements that have been recognized by YSORT. Based on this evidence, the adequacy of operating procedures and program implementation was found acceptable for the D&A mission area restart. (Section 4.3, *Procedures and Programs*).

LMES performance of the routine and off-normal operations drill program was judged as acceptable; however, improvements are required for program maturation. The drill program was very basic and requires continued development with more complex, challenging drills that better test the LMES staff's response and control of the scenarios. Personnel demonstrated an in-depth knowledge of certain evolutions such as operational safety requirements (OSR) inoperabilities; however, the overall program lacked the depth and breath to challenge workers' knowledge and capabilities over a wider range of scenarios. LMES has recognized these weaknesses and has assigned more experienced personnel to this area to provide the needed direction for the required long-term program improvements. Although the drill program was in a maturing

process, the existing program was considered adequate for restart.

The YSORT assessment included a review of the mentor program that included strategies 2 and 3 functions as defined in LMES Y/AD 627, *Mentor Program Description, Revision 1*. The mentors' primary focus has been to provide a compensatory measure in oversight of fissile material activities and to perform assessments of conduct of operations chapter implementation. The two facility mentors assigned to D&A are experienced personnel with strong conduct of operations backgrounds and Naval Nuclear and DOE facility experience. Both mentors have provided the necessary experience base to advise and to mentor facility operations for both operations management and supervisory functions. YSORT has observed the positive results of their efforts in developing the facility Conduct of Operations Program.

The mentors' periodic program assessment of Conduct of Operation implementation was also reviewed, and it appears to be a positive asset in providing self-assessment results to facility operations. The line organization assessment function needs to be developed and implemented to fulfill Chapter I requirements for self-assessments and begin to the phaseout of this interim mentor functions.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3009, 3010, 3011, 3012, 3013, 3014, 3021, 3022, 3034, 3036, 3049, 3051, 3059, 3062, 3063, 3087, 3096, 3100, 3102, 3107, and 3108.

4.2.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Operations Functional Area activities are summarized in Appendix 7.2. The specific finding and contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Operations procedures could not be performed as written;
- Inadequate documentation of QO Conduct of Operations Program;

- Operations inadequacies and equipment deficiencies with Vacuum Lift Rigs;
- Inadequate rigor and formality of SO implementation;
- Conduct of Operations Manual, Chapter II, requirements were not captured in Daily Administrative Checks (DACs) and the performance of DACs was found to be inadequate;
- Rigor and formality in system status files need improvement to address inadequate configuration drawings of the CAAS and Fire Protection System and inadequate control of configuration drawings;
- Required reading log sheets were incomplete;
- QO operator aids were not adequately integrated with operations;
- QO MOUs were not implemented for SO, required reading and operator aids;
- Timely recognition and prompt corrective action to conduct of operations issues by operations supervision need improvement; and
- DOE Order 5480.19 applicability matrix for D&A was not submitted by LMES.

Several other operations problems are documented in other functional areas of this report including procedures, training and management.

There were 16 pre-restart and 9 post-restart findings identified during the review of this functional area. One of the pre-restart findings remain open at the time of this report's publication. The open finding involves the completion of electrical drawings of the Criticality Accident Alarm and mechanical drawings of the Fire Protection Systems.

4.2.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

The first significant restart issue in Operations Functional Area is the minimum level of conduct of operations implementation achieved by the tenant organizations or support organizations. Although the restart requirements as defined by Document Y/OA-6238 has been achieved, continuous improvement is necessary for long-term success of D&A.

The second significant restart issue concerns the recognition of issues and deficiencies by D&A supervision. YSORT has reviewed the CAPs and the implementation of the plans. In assessing this area, YSORT observed program improvements through the upset condition drills that were used to train and demonstrate the adequacy of D&A supervision to recognize issues and take effective corrective action to deficiencies. Actions taken are adequate for restart of D&A; however, an important post-restart action remains involving the conduct of a formal observation training program. YSORT will assess the adequacy of this training during post-restart period.

4.2.5 Conclusion

Based on the results of the assessment activities associated with COs-19 and -21, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria. The electrical drawings for the Criticality Accident Alarm System (CAAS) and mechanical drawings for the Fire Protection System remain to be completed as a pre-restart action. Post-restart program improvements are required to ensure that maturation and sustainability of conduct of operations continue.

4.3 Procedures and Programs

The YSORT conducted an independent assessment of the LMES procedure activities and observed the use of procedures during execution of special operation packages, procedure V&V activities, procedure dry runs, and performance during the LMES MSA and RA.

4.3.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Procedures and Program Functional Area using the following CO:

CO-07 evaluated the adequacy and correctness of procedures for operating systems and utility systems.

4.3.2 Conditions of Contractor Programs and Procedures

CO-07 has been satisfied in that there are operationally and technically correct procedures that are controlled for use by operations personnel involved in D&A operations. This includes DSO and QO procedures and personnel. D&A personnel are aware of and follow procedural requirements. This has been documented in assessment reports by the YSORT and observations by the MSA Team.

The flow-down of criticality safety approvals (CSA) requirements into procedures for all DSO and QO procedures that are required for the performance of D&A tasks had not been completed at the time of this report. See Section 4.4, Safety Envelope, for results of the YSORT review of incorporating CSA requirements into procedures.

All completed DSO procedures required for D&A tasks have been upgraded using the improved V&V process implemented as a result of the DOE RSS RA findings. The process is cumbersome, but has resulted in an increased level of confidence in the procedures. The V&V process involves getting the proper technical personnel involved during the verification to ensure all the technical concerns and requirements related to the task are correctly implemented. Operations personnel are involved to ensure the procedure can be performed as written. Qualified operations personnel are teamed with an experienced validator during validation to ensure the procedure can be performed as written. During the performance of dry runs for practice and procedure familiarization, it was identified that a number of procedure problems were still appearing. After discussion with DOE, it was decided that whenever possible, a procedure would be performed during validation since that is the only way to truly determine if the procedure is acceptable and adequate. This was expanded to include the use of practice dry runs of procedures for training

purposes to include a procedure writer, who would document procedure improvements, that are identified during the practice. This has resulted in procedures that have caused very few problems during performance demonstrations for LMES MSA and RA teams.

Some problems related to document control of procedures were identified in Building 9204-2E during performance of special operations package activities for QE during November that resulted in a series of findings on document control. These findings identified that Building 9204-2E personnel were not using working copies of procedures, and procedures were located in a reading room that had not been set up as a Document Management Center as required by Procedure Y10-189, *Document Control*. As a result of these findings, DSO and QO management appointed document coordinators for their organizations in Building 9204-2E and established Document Management Centers, with the assistance of the Plant Procedures Group, to control the procedures. By establishing the Document Management Centers and requiring the use of validated working copies, positive control of procedures has been established. Although this has presently solved the document control problem in Building 9204-2E, continued diligence by the coordinators and operations personnel will be required to ensure that the correct version of a procedure is used.

Personnel training on the latest revision of procedures is tracked using the Training Management System (TMS), and supervisors are directed to verify training records prior to performing a pre-job brief. The DSO training organization has been effective in ensuring that DSO personnel are trained on procedure revisions prior to the effective date of the revision. Some problems were noted in the qualification of QO personnel, but observation of QO pre-job briefs revealed that the supervisors did an effective job of informing personnel of changes to procedures. The QO has also implemented a method similar to DSO for tracking training on procedures.

All DSO and QO personnel required to support D&A activities had completed the Conduct of Operations Manual, Chapter XVI, training module on "Procedure Use and Adherence." This is an effective training module that covers the conceivable procedure circumstances with which personnel could be presented during the performance of their jobs. The training was well presented and

resulted in personnel having a much better understanding and appreciation of procedure use and adherence requirements. During level of knowledge interviews and performance of evolutions for the LMES MSA and RA teams, it was evident that personnel were knowledgeable of the requirements and demonstrated attention to detail during the performance of procedures.

The QO had not performed dry runs of procedures, other than radiography, prior to the MSA. During a dry run of the Mauser procedure, the operator was observed referring to a notebook that subsequently was discovered to contain old, out-of-date drawings and instructions used in setting up the Mauser for particular measurements. In addition, none of the Material Testing Laboratory procedures were scheduled for demonstration prior to resumption. This resulted in DOE expressing concerns about the effectiveness of the procedures and the operator familiarity with the procedures. As a result of the observations and concerns and some related findings, the QO instituted the use of practice dry runs of procedures to familiarize personnel with the procedures and to confirm the useability of the procedures. The old, out-of-date documents were removed from the work place or validated for useability. As a result of concerns noted by the LMES RA team, 27 QO procedures were walked down and revised as necessary.

A large number of procedure V&Vs were observed to determine the effectiveness of the new program and to evaluate the quality of the procedures for D&A. A significant amount of staff resources has been committed by LMES to ensuring V&V activities are completed successfully, which has resulted in the V&V being cumbersome and time consuming (sometimes taking 2 days to complete a verification). Discussions with LMES personnel led to the conclusion that this commitment of resources was necessary due to inadequacies in the development and technical review stages of the procedure process. This has been documented in a post-restart finding that should result in LMES' improving the overall procedure process. The primary causes of the problem appear to be a lack of attention to detail, inadequate training, and lack of proper definition of responsibilities of SMEs and procedure owners.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3026, 3031, 3066, 3068, 3092, 3093.

4.3.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Procedures and Programs Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- Document control of procedures in Building 9204-2E was not effective;
- Working copies of procedures were not being used for performance of tasks;
- A Document Management Center was not established in 9204-2E;
- Surveillance procedure for Fire Sprinkler System did not include instructions for performance of the procedure nor address partial performance of the procedure;
- QO procedures and instructions were in use that had not been upgraded since April 1, 1995; and
- QO used old, out-of-date, and non-validated documents for guidance in the performance of D&A-related tasks.

There were six pre-restart and five post-restart finding identified during the review of this functional area.

4.3.4 Significant YSORT Restart Issues

Except as discussed below, no significant restart issues were identified during the performance of this review remain open.

There is continued concern for the adequacy of site-wide procedure and document control programs that are still developing to the level where there is confidence that procedures produced will be technically and operationally correct and the operators will always have the current version of the procedures available for use. Compensatory measures have had to be put in place to ensure the quality and timeliness of procedures. Correction of these weaknesses will require training and management attention over a period of time to resolve.

4.3.5 Conclusion

Based on the results of the assessment activities associated with CO-07, the D&A procedures required for restart are adequate and correct, personnel are trained on the latest revisions of procedures, and procedure revisions are adequately controlled for restart. Problems with procedure performance have been corrected through practice dry runs, training, and procedure revisions. Problems with the adequacy of QO procedures and document control have been acceptably resolved.

Procedures and Programs will require the personnel to continue to use the same level of diligence in ensuring that procedures are correct and in the use of procedures.

4.4 **Safety Envelope**

The YSORT evaluated LMES implementation of authorization basis documentation and the associated implementing procedures for D&A resumption readiness. The YSORT also performed reviews to confirm the establishment of a program to verify operability and to periodically reconfirm operability of the two OSR-controlled safety-significant systems, Fire Protection, and CAAS. These reviews focused on surveillance testing, preventive maintenance (PM), and instrument calibration.

The YSORT also evaluated D&A CSAs and procedures to determine that technical procedures adequately implement CSA requirements. This evaluation involved a review of the CSAs and operating procedures associated with D&A; interviews with personnel from the NCSO, DSO, and QO; walkdowns of all CSAs to ensure that the facility conditions reflect the criticality safety limits and controls; observation of dry runs to verify that criticality safety operating limits and controls are effectively implemented in the facility; and observation of the interface between NCSO and Operations for establishing criticality safety controls in operating procedures.

The YSORT observed various LMES field activities and performance of the LMES MSA and RA in support of the above reviews.

4.4.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Safety Envelope Functional Area using the following COs:

CO-04 verified the existence of adequate and correct safety limits for operating systems.

CO-10 verified that a program was in place to confirm, and periodically reconfirm, the condition and operability of safety systems, including safety-related process systems and safety-related utility systems.

CO-11 confirmed that safety systems and other instruments which monitor technical safety requirements are monitored for calibration.

CO-12 ensured that all safety and safety-related utility systems are currently operational and in a satisfactory condition.

4.4.2 Conditions of Contractor Programs and Procedures

The OSR for D&A, specifically for Buildings 9204-2 and 9204-2E, was reviewed by YSORT. This review, which consisted of walkdowns and observation of surveillance testing, determined that the OSR was technically accurate and consistent with the physical facility configuration. The YSORT noted that the D&A OSR had also been reviewed during the RSS RA and revised to resolve pre-restart RSS findings. During the D&A review, several LMES MSA and RA observations and findings were identified regarding a lack of clarity of OSR requirements in surveillance procedures and the procedures not containing all applicable OSR requirements. However, the YSORT found that the surveillance procedures do contain appropriate references to the OSR Limiting Conditions for Operations (LCO) action statements when system operability is in question.

The YSORT conducted reviews to confirm the establishment of a program to verify operability and to periodically reconfirm operability of the safety-significant systems, Fire Protection System and CAAS. As was the case with the OSR discussed above, this review had also been performed during the RSS RA. The YSORT, MSA, and LMES RA identified additional observations and findings in this functional area during the D&A review. These included

procedure errors involving CAAS post-maintenance testing and surveillance testing and the failure to follow fire-cycle surveillance test procedures. Additionally, the CAAS surveillance test procedure had been revised to resolve a pre-restart RSS deficiency involving audibility checks of CAAS horns and sirens, but deficiencies were subsequently identified in the associated job aids. Deficiencies were also identified in the safety-significant PM procedures. Specifically, inadequate justification was provided to allow a revision to the CAAS PM procedure that incorporated a CAAS detector setpoint change. Additionally, all fire protection PM procedures have not been issued.

Implementation of DOE Order 5480.21, *Unreviewed Safety Questions (USQs)*, continues to be inadequate as evidenced by the identification of additional YSORT findings. Similar deficiencies were also identified during the RSS resumption assessment and indicate a site-wide programmatic implementation failure. A formal root-cause analysis was conducted, and a corrective action was approved to address unreviewed safety question determinations (USQD) deficiencies. Corrective actions are in progress and are adequate to support resumption.

In accordance with the procedures governing the CSA process, LMES conducted a criticality safety review, which included a physical walkdown, of all CSAs associated with D&A. NCSO, DSO, and QO participated in the V&V of CSA requirements. The V&V process provided CSAs with essential criticality safety limits and controls. However, the current CSA process does not always produce limits and controls that can be incorporated into procedures. Specifically, CSAs do not always quantify limits, establish maintenance and surveillance requirements for physical controls, delineate sampling and measurement requirements, define terms to establish the verifiability of controls, and prescribe actions for NCSO response to abnormal conditions.

Consequently, CSA requirements were not always adequately incorporated into approved procedures. Several deficiencies in how CSA requirements were not incorporated into procedures include: physical criticality safety requirements were specified without any administrative action by the procedure user; CSA requirements were restated rather than specifying requirements as operating instructions; specific control application for CSA requirements were not identified; and terms to establish the

verifiability of controls were not defined. Although these deficiencies create procedures that are cumbersome and rely upon the diligence of operators and NCSO engineers during the V&V of the procedures, they are an improvement to the operator being required to use both the procedure and the CSA. Despite the above identified deficiencies, the CSAs and the procedures which have incorporated the CSA requirements are adequate for resumption of D&A. The incorporation of CSA requirements into procedures was not completed at the time of this report but is required prior to restart.

While the process for integrating CSA requirements into procedures is immature, the need to establish guidance and provide a better interface between NCSO and Operations for establishing criticality safety controls into operating procedures are addressed in the CAPs. As part of the corrective actions in response to the YSORT D&A findings, NCSO has developed a SO to identify objectives and criteria for technical guidance in the development of procedures that govern fissile material activities. The SO is an interim action until an internal NCSO procedure that contains the appropriate guidance is developed. This guidance will provide support for communicating criticality safety controls in operating procedures rather than CSAs. Furthermore, supervisory and worker participation in the validation of CSAs is a mandate of the CSA process. This validation ensures that the CSA requirements being incorporated into procedures are understandable to supervisors and workers.

In regards to criticality safety postings, the CSAs associated with D&A do not always ensure that the signs specify all parameters subject to procedural control. The deficiency of criticality safety postings was identified as an RSS post-restart programmatic issue. A formal plan and schedule have been provided for addressing posting inadequacies, which includes reviewing current criticality safety posting practices against DOE Order 5480.24, *Nuclear Criticality Safety*, and American National Standards and American National Standards Institute (ANS/ANSI) standards.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 1603, 3000, 3006, 3045, 3064, 3067, 3074, 3091, 3095, 3098, and 3099.

4.4.3 YSORT Finding/Issue Closure

The findings identified by the YSORT in this Safety Envelope Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- USQs were not properly performed (three examples);
- CAAS surveillance procedure job aids were deficient;
- CAAS horns were deficient;
- Procedures do not always include controls and limits significant to the criticality safety of the operation, and do not always specify all parameters they are intended to control;
- No criteria exist for NCSO to provide technical guidance in the development of operating procedures or in the improvement of criticality safety practices and procedural requirements; and
- Supervisor/worker participation in the review of CSAs and the incorporation of CSA requirements into procedures is not evident.

There were four pre-restart and eight post-restart findings identified during the Safety Envelope Functional Area. One pre-restart finding remains open at this report's publication. The open finding involves the incorporations of CSA requirements into procedures. LMES has taken sufficient action to close the remaining pre-restart findings or taken acceptable compensatory actions to address the concerns in the interim.

4.4.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.4.5 Conclusion

Based on the results of the assessment activities associated with COs-4, -10, -11, and -12, the activities performed by LMES are determined to be adequate in meeting the requirements as identified by assessment criteria. All activities that are required by Document Y/OA-6238 have been completed at a level necessary to support resumption of D&A.

4.5 Training and Qualification/Level of Knowledge

The YSORT assessed the status of training and qualification and the level of knowledge of D&A personnel to determine readiness to resume D&A activities. This assessment included the review of programs and training records, the performance of the LMES MSA and RA, and the actions taken by LMES to correct YSORT and other findings. Personnel from DSO, QO, PSS, Facility Maintenance Organization (FMO), Fire Department, and NCSD were included in the scope of this review as defined by the LMES D&A resumption crew rosters.

4.5.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Training and Qualification/Level of Knowledge Functional Area using the following COs:

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

CO-14 verified the technical qualifications of contractor personnel responsible for facility operations were adequate.

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

CO-17 verified the level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance.

CO-18 verified that there are sufficient numbers of qualified personnel to support safe operations.

CO-23 verified the management qualification or contractor personnel responsible for facility operations are adequate.

4.5.2 Conditions of Contractor Programs and Procedures

The staffing of the D&A mission area includes personnel from DSO, QO, FMO, PSS, Fire Department, and NCSD. Within the DSO, QO, FMO, and NCSD, personnel are required to be qualified or certified as defined by the Y-12 TIM. The Y-12 TIM does not address the PSS or Fire Department. Acceptance of PSS and Fire Department personnel readiness to resume safe operation of the D&A mission area is based on completion of required training that supports their ability to conduct surveillance testing of the safety-significant systems associated with D&A. The training programs and the personnel training status for each of these organizations were assessed during the D&A Training and Qualification/Level of Knowledge Functional Area review.

Personnel from the DSO were involved in the resumption of RSS. During the RSS review, the DSO training programs and the status of personnel certification and qualification were determined to be acceptable. New certifications for D&A tasks only affected the assembly/disassembly positions. All other DSO positions met certification/qualification requirements during the RSS resumption process. A training and qualification record review was performed for the DSO and was determined to meet the minimum staffing requirements to support a safe D&A resumption.

Certification and qualification records of personnel from the QO determined the QO could support the minimum staffing requirements established by QO for D&A resumption. The YSORT review is based on these personnel meeting the minimum educational and experience requirements, signed qualification cards, comprehensive written examination results, oral examination results, and the certification endorsements made by QO management. However, during the LMES RA, the integrity of the QO examinations was challenged. To address this LMES RA concern, the LMES line management conducted a review of all qualification/certification examinations for QO personnel on the D&A resumption crew. This review determined a total of four QO personnel failed the comprehensive written examinations. The failures included two metallurgist, one dimensional inspector, and one radiographer. These personnel were placed in remediation training and, to date, three of them were

recertified. The QO also made some programmatic changes to prevent recurrence of this condition. The LMES RA reviewed these corrective actions and determined them to be satisfactory. The FMO was determined to have no personnel qualified as required by the Y-12 Training Implementation Matrix (TIM) and will not be able to complete FMO qualifications to support the D&A resumption schedule. FMO proposed a task qualification of FMO personnel in order to support the D&A resumption schedule. YSORT has accepted a task qualification of FMO personnel as a means to support D&A resumption. A review of these records determined that FMO meets the minimum staffing requirements that they established for D&A resumption.

The PSS and the Fire Department training and qualification programs are in a similar condition. Both organizations have personnel assigned to D&A that were not included in the Y-12 TIM prior to the YSORT review of D&A. Since these organizations have not been in the Y-12 TIM, no effort was ongoing to train and qualify applicable PSS and Fire Department personnel under the requirements of DOE Order 5480.20/20A, *Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities*. This condition does not allow the Fire Department and the PSS to upgrade their training and qualification programs to the DOE Order requirements and support the D&A resumption schedule. The YSORT determination of personnel readiness for Fire Department and PSS personnel was based on satisfactory completion of training requirements established to support applicable D&A tasks. Submittal of acceptable records to document satisfactory completion required D&A training that will support meeting the minimum PSS and Fire Department staffing requirements has been completed or reviewed by YSORT and is adequate for restart of D&A.

The NCSD personnel assigned to D&A were included on the resumption crew for RSS. The training and qualification process in the NCSD for these incumbent personnel was determined to be acceptable to support RSS. No new training requirements were identified for NCSD personnel for D&A tasks and, therefore, the NCSD training and qualification process was determined to be acceptable for D&A Resumption. A review of NCSD training and qualification records was conducted and they were determined to support the NCSD minimum staffing requirements for a safe D&A resumption.

YSORT was not able to complete the review required by CO-16 because the D&A procedures had not been revised. CO-16 verified that training had been performed to the latest revision of the procedures. A pre-restart finding was issued by YSORT to document this condition. This finding remains open at the time of this report.

Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3001, 3002, 3008, 3015, 3018, 3030, 3035, 3039, 3040, 3046, 3047, 3048, 3050, 3052, 3053, 3054, 3058, 3060, 3065, 3069, 3070, 3071, 3073, 3077, 3083, 3084, 3085, 3086, 3088, 3090, 3094, and 3109.

4.5.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Training and Qualification/Level of Knowledge Functional Area are summarized in Appendix 7.2. The specific findings and the contractor response documentation are available in the YSORT evidence files. Pre-restart findings were issued to document the following concerns:

- All key personnel and supervisors and support personnel required to resume safe operation had not been identified;
- A DSO supervisor's education and experience history were not evaluated against DOE Order 5480.20A criteria;
- Fire Department and PSS positions had not been categorized under DOE Order 5480.20A and personnel had not been evaluated against the Order for minimum education and experience;
- The PSS, DUO, FMO, and the Fire Department had not provided their minimum staffing requirements for the D&A resumption;
- Personnel on the D&A resumption crew from the Fire Department, PSS, NCSO, and DSO were deficient in their Energy Systems and/or their unescorted access to the Y-12 MAA training requirements;
- PSS and Fire Department training requirements had not been identified for safe resumption of D&A;

- A significant number of procedures are scheduled for revision to support D&A resumption and personnel will need to receive appropriate training following the completion of the YSORT review;
- Controls established by NCSD, PSS, and the Fire Department to ensure that only trained and qualified personnel are assigned work were determined to be ineffective;
- The PSS, FMO, Fire Department, QO, and DSO training and qualification record files did not include education and experience histories, medicals, training exception approval forms, and/or qualification cards for all personnel on the D&A resumption crew; and
- Minimum staffing requirements were not supported by the training record files for the PSS, FMO, and the Fire Department.

There were 17 pre-restart and 15 post-restart findings identified during the review of this functional area. One pre-restart remains open at the time of this reports publication. The open pre-restart finding is the training on procedures which have not been completed. LMES has taken sufficient action to resolve or close the remaining pre-restart findings.

4.5.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.5.5 Conclusion

Based on the results of the assessment activities associated with CO-13, -14, -16, -17, and -23, the activities performed by LMES are determined to be adequate in meeting the requirements defined by the assessment criteria, noting that pre-restart findings remain to be closed. All activities required by the Document Y/OA-6238 have been completed to a level necessary to support resumption of D&A Operations.

4.6 Startup Test and Assessments

YSORT evaluated the scope and content of the Startup Test and Assessments Functional Area, using the criteria specified in the YSORT Assessment Plan. This assessment included independent reviews of the program and procedures; comparison of field conditions and procedures with the program documents; observation of related activities of both the LMES MSA and RA Teams; and evaluation of actions taken by LMES with respect to previous and current findings of the LMES MSA and RA and YSORT.

Training was addressed only with respect to operator performance as an indicator of its adequacy. The viability of procedures was addressed only with respect to the observed activities. Other aspects of procedures and training are more comprehensively addressed in the Sections 4.3 and 4.5 of this report.

4.6.1 Core Objectives Reviewed

The YSORT Assessment Plan requires evaluation of contractor performance in the Startup Test and Assessments Functional Area using the following COs:

CO-28 required verification that an adequate restart test program had been developed which includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

CO-30 required verification that the breadth, depth, and results of the contractor RA are adequate to verify the readiness of hardware, personnel, and management programs for operations. This CO also verified that the contractor MSA was adequately implemented and that identified deficiencies were resolved and/or closed acceptably.

4.6.2 Conditions of Contractor Programs and Procedures

4.6.2.1 Core Objective 28

Document Y/OA-6238, Prerequisite 11 (PR-11), stated that all systems and components necessary for the processes that were being restarted had been identified, that all maintenance calibrations

and surveillances would be current, and that the start up test program and system walkdowns would verify restart readiness. Based on the PR-11 statements, LMES management position has been that a restart test program is not required. The MSA confirmed that a restart test program had not been developed and that there was an insufficient number of dry runs to observe that demonstrated system and equipment operability. Also, several past due calibrations and maintenance were noted. The MSA also found an evidence package deficiency involving an out-of-date list of equipment to be restarted. YSORT concurred with these findings and evidence file deficiency. The MSA findings prompted LMES to conduct seven additional dry runs and repeat the three original dry runs.

The original dry runs did not demonstrate the operability of all the equipment required for resumption. The MSA issued a finding that a restart test program had not been developed as a result of the lack of demonstration of equipment operability during the dry runs. Subsequent to the MSA an additional seven dry runs and a repeat of the original ones were conducted. There were a total of six dry runs that involved partial equipment operation. These dry runs, where equipment was exercised, essentially duplicated a start up test of that equipment and therefore adequately addressed these issues. LMES management had not previously understood the necessity of exercising both operators and equipment after a long stand down.

The LMES RA identified numerous equipment not on the updated equipment list for restart that were out of their calibration/maintenance cycles. In addition, the LMES RA identified that equipment not required for resumption had not been administratively tagged out of service. Most of these deficiencies were associated with the QO because the equipment in question was their responsibility. Also identified was that a number of maintenance tasks needed to be completed to support resumption. To address this issue LMES performed walkdowns of this equipment and initiated the appropriate maintenance job requests where needed. YSORT concurred with these findings.

YSORT also identified a concern with the accuracy of the air flow indication by the gauge mounted on the walk-in hood during the RA. Further investigation indicated that the gauge air flow indication was verified during the quarterly survey (i.e., operability

inspection/test) that determines the acceptability of the hood for operations. However, the procedure used for accomplishing this survey lacked any detail on the activity. YSORT issued a finding that was resolved by an LMES commitment that the survey activities would be technically justified and specifically delineated in a procedure prior to the quarterly survey after resumption of operations. Another deficiency identified was that pressure and vacuum gauges on lifting fixtures were not calibrated throughout Y-12 facilities. LMES initiated a corrective action to replace the suspect gauges on a fixture with calibrated instruments and committed to tag similar fixtures in other Y-12 facilities as out-of-service pending further evaluation.

4.6.2.2 Core Objective 30

The YSORT evaluation of the LMES MSA included review of the development and execution of the assessment implementation plan evaluation criteria and methodology; observation of LMES assessment activities; and, the evaluation of the resolutions for the MSA identified deficiencies. The overall process was acceptably implemented but the LMES MSA conclusions in the Operations Functional Area were considered inappropriate by YSORT.

The number and extent of operational activity dry run observations were initially insufficient to confirm operational readiness. Further, the results of the dry runs indicated weaknesses. In one case, a dry run evolution had to be stopped because of unfamiliarity with the applicable procedures. Procedure noncompliances were observed in several others, and personnel were found to be unaware of the Y-12 procedure compliance policies.

In spite of these results, the MSA concluded that implementation of conduct of operations requirements was adequate to support resumption. YSORT initially considered that the MSA was less than adequate in that it should have concluded the Operations Functional Area to be unsatisfactory subject to more substantial corrective actions and a subsequent reassessment of the entire Operations Functional Area.

In response to a DOE request, more dry runs were eventually conducted and the MSA partially reconvened because of the insufficient data. In these later dry runs, the LMES staff's performance in the additional exercises was adequate.

Subsequently, the LMES RA determined that sufficient improvement had occurred to warrant a conclusion of operational readiness.

An assessment was performed to evaluate the LMES RA to determine if the breadth, depth, and results are adequate to verify the readiness of hardware, personnel, and management programs to support resumption of D&A operations. Also included in this evaluation was a review of the actions and/or compensatory measures taken to resolve/close pre-restart findings that were identified by the LMES RA team. The assessment was performed by a combination of observations and document reviews. The LMES RA team was observed performing interviews, document reviews, and field activities.

Observations of LMES RA Team activities indicate a comprehensive review in accordance with their assessment plan. The qualifications of the team participants were reviewed and determined to be adequate in meeting recognized criteria for performing an independent assessment. The training of the LMES RA team was determined to be adequate to familiarize the team on the scope of the assessment and on those activities required to perform an effective LMES RA. From a review of the Criteria and Review Approach Documents, it was determined that the breadth, and depth of the LMES RA was adequate to verify the readiness of hardware, personnel, and management programs to support the resumption of D&A operations.

The initial review by the LMES RA concluded that only the C5 disassembly and electron beam welder was ready for operations, and that activities performed by the QO were not ready. The initial review documented 16 pre-restart findings and 3 post-restart findings. An additional assessment of the QO was conducted which documented an additional two pre-restart findings. YSORT conducted a review of the actions taken by LMES to resolve and close the pre-restart findings.

YSORT conducted a review to determine the adequacy of corrective actions to resolve and close the post-restart findings. From this review YSORT identified an issue whereby LMES was statusing the LMES RA deficiencies as "closed" prior to the completion of the corrective action. As such a post-restart finding was written documenting the deficiency as a violation of LMES Procedure QA-16.1. This finding prompted LMES to initiate a reverification of

all closed LMES RA findings. This reverification identified two findings that were closed without full completion of the work, and some closed findings that contained evidence file deficiencies. The two findings are open issues at the time of this report.

Based on the results from the assessment activities including information received from YSORT personnel, it is concluded that the LMES RA was performed in a manner to effectively establish the readiness of D&A to resume operations. The activities performed by LMES were determined to be adequate in satisfying the acceptance criteria associated with this assessment activity. Further details of this assessment are documented in YSORT Routine Assessment Form, Assessment Nos. 3103, 3104, 3105, 3106, 3110, and 3111.

4.6.3 YSORT Finding/Issue Closure

The findings identified by YSORT in the Startup Test and Assessments Functional Area are summarized in Appendix 7.2. The specific findings and contractor response documentation will be available in YSORT evidence files. Two post-restart findings were identified during the review of this functional area.

4.6.4 Significant YSORT Restart Issues

No significant restart issues were identified during the performance of this review. Those findings classified as pre-restart have either been closed or resolved for the purpose of D&A resumption.

4.6.5 Conclusion

Based on the results of the assessment activities associated with CO-28 and 30, the activities performed by LMES are determined adequate for restart. The MSA was adequate, but conclusions drawn by the MSA were not consistent with identified problems. The LMES RA was adequate in meeting the requirements defined by the LMES, Document Y/OA-6245, "Implementation Plan for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and specified in DOE Order 5480.31

5.0 CONCLUSIONS

The consensus of the YSORT, from the evidence obtained, indicates that LMES is adequately prepared to resume D&A activities as defined by Document Y/OA-6238. Subsequent resumption of additional D&A activities must be evaluated in accordance with LMES Procedure Y10-190, *New Activity Start-up Requirements*. This conclusion is based on (1) the evaluation of the LMES MSA; (2) the evaluation of the LMES RA; (3) assessments by the YSORT members; and (4) adequate closure and/or resolution of all pre-restart findings identified by the LMES MSA, LMES RA, and YSORT pre-restart findings. In addition, YSORT confirmed completion of the LMES RA Prerequisites identified in the Document Y/OA-6238.

As discussed in this report, there are three YSORT pre-restart findings remaining open upon publication of this report. These findings include 1) inadequate safety system configuration drawings (See Section 4.2); 2) procedure revisions and associated training (See Section 4.5); and 3) procedures not always incorporating CSA limits and conditions (See Section 4.4). In addition, three pre-restart LMES RA issues remain open. These issues include 1) completion of QO CSA revisions for deficiencies identified by the LMES RA; 2) correction of equipment deficiencies identified on the list of equipment required for restart; and 3) completion of training for the QO on Nuclear Operation Conduct of Operations Manual, Chapter 5, *On the Job Training*. These findings must be completed and verified by YSORT prior to resumption of D&A activities.

Post-restart findings from this review will be entered into the YSO Deficiency Tracking Database and tracked to closure.

6.0 ACRONYMS

ANS	American National Standards
ANSI	American National Standards Institute
CAP	Corrective Action Plan
CSA	Criticality Safety Approval
CAAS	Criticality Accident Alarm System
CO	Core Objectives
D&A	Disassembly and Assembly
DOE	Department of Energy
DNFSB	Defense Nuclear Facilities Safety Board
DSO	Disassembly and Storage Organization

ESAMS	Energy Systems Action Management System
FMO	Facility Maintenance Organization
LCO	Limiting Conditions for Operations
LMES	Lockheed Martin Energy Systems, Inc.
MMES	Martin Marietta Energy System, Inc.
MSA	Management Self-Assessment
MOU	Memorandum of Understanding
NCSD	Nuclear Criticality Safety Department
ORO	Oak Ridge Operations
OSR	Operational Safety Requirements
PM	Preventive Maintenance
PSS	Plant Shift Superintendent
QE	Quality Evaluation
QO	Quality Organization
RA	Readiness Assessment
RadCon	Radiological Control
RFA	Request for Approval
RFC	Request for Closure
RSS	Receipt, Storage, and Shipment
RWP	Radiological Work Permit
STA	Shift Technical Advisor
SME	Subject Matter Expert
SO	Standing Order
TIM	Training Implementation Matrix
TMS	Training Management System
USQ	Unreviewed Safety Question
USQD	Unreviewed Safety Question Determination
V&V	Verification and Validation
YSO	Y-12 Site Office
YSORT	Y-12 Site Office Restart Team

7.0 APPENDICES



7.1 Team List and Biographies

Y-12 SITE OFFICE RESTART TEAM

Restart Manager	-	Thomas S. Tison
Team Leader	-	Dale E. Christenson
Team Leader	-	Mark A. Sundie
Resumption Area Lead	-	Frank S. Poppell

FUNCTIONAL AREA	TEAM MEMBER
Management	Randy C. Foust (Lead) Richard L. Renne Peter R. Kulesza
Operations	Gary F. Weston (Lead) Dennis O. Myers Mike C. Klanecky
Procedures and Programs	Gerald R. Mountain (Lead) Charles H. Robinson
Safety Envelope	Kirk W. Van Dyne (Lead) Charles H. Robinson
Training and Qualifications/Level of Knowledge	Thomas Rogers
Startup Test and Assessments	George Napuda (Lead) Wayne L. Britz
Technical Editor	Donald A. Beckman
Administrative Support	Kimberly E. Hurd (Lead) Kay F. Dutton Nicola P. White

YSORT Biographies

Donald A. Beckman

Mr. Beckman has 25 years experience in the management, operation, maintenance, design, and regulation of nuclear power plants and defense facilities. He holds a B.S. degree in Marine Engineering from the U.S. Merchant Marine Academy, 1969. Since 1982, he has been providing consulting services to government and industry. His assignments support nuclear utilities and the Department of Energy (DOE) in the development and evaluation of management programs. Ongoing engagements include support to the Nuclear Regulatory Commission (NRC) in special inspections, support to the DOE for management of production programs, major design and construction projects, facility startup and restart, and to nuclear utilities in the areas of management and quality program support. Prior to his consulting career, Mr. Beckman was the first NRC Senior Resident Inspector assigned to the Beaver Valley Power Station in 1979. His career with NRC spanned 1977-1982 and included duty as a region-based inspector in the areas of operator training, quality assurance, operations, maintenance, and engineering. He was part of NRC's immediate response team for the Three Mile Island Accident. His last assignment involved management of an engineering section responsible for general systems engineering, fire protection, environmental qualification of electrical equipment, and related subjects. From 1976 to 1977, Mr. Beckman was a startup and test supervisor for Burns and Roe's for the Clinch River Breeder Reactor and a variety of nuclear and non-nuclear generating station projects. In 1971, Mr. Beckman, as a test engineer for submarine reactor plants, joined Newport News Shipbuilding and Dry Dock. During the next 5 years, he certified as Shift Test Engineer, directed the refueling and overhaul activities of nearly two dozen nuclear submarines, and served as Chief Test Engineer and Delivery Engineer for the last two 637 Class attack boats. From 1969 to 1971, Mr. Beckman served as a U.S. Coast Guard and U.S. Atomic Energy Commission-licensed engineering officer on board the Nuclear Ship Savannah, the first and only U.S. civilian-operated, nuclear-powered merchant ship culminating as a shift supervisor. He also served intermittently as an engineering officer on oil-fired steam and diesel-powered merchant ships.

YSORT Biographies (continued)

Wayne L. Britz

Mr. Britz received a B.S. degree from the U. S. Merchant Marine Academy and a M.S. degree in Nuclear Engineering, from the Georgia Institute of Technology. He was a nuclear engineer, health physicist, deck officer, and an Atomic Energy Commission-licensed reactor operator on the Nuclear Ship Savannah from 1966 to 1970. He was an inspector, nuclear engineer, and health physicist for the Atomic Energy Commission/Nuclear Regulatory Commission from 1971-80 where he developed criteria and guides supporting regulations, and evaluated systems for their ability to meet regulatory requirements. He was Manager of Radiation Protection Services at Public Services Electric and Gas Company (PSE&G) from 1980 to 1986 where he was responsible for the radiological protection program for the Salem and Hope Creek nuclear power plants to comply with Nuclear Regulatory Commission regulations. At PSE&G, he was responsible for the radiological environmental monitoring program and for radiological support to the emergency preparedness program. He provided expert witness and written testimony to the government and private industry. Since 1986, Mr. Britz has been a consultant to various government agencies, nuclear power utilities, and private industry. He served as a Project Manager for the Center for Disease Control's dose reconstruction project at the Idaho National Engineering Laboratory. He was a member of the DOE Plutonium Vulnerability Study at the Pantex Plant. He has conducted Operational Readiness Reviews for the Department of Energy at Rocky Flats, the Waste Isolation Pilot Plant, and Savannah River.

YSORT Biographies (continued)

Dale E. Christenson

Mr. Christenson received a B.S. degree, in Civil Engineering from the University of Washington and a M.S. degree, in Civil Engineering from the University of Maryland. He is a registered Professional Engineer in the State of Maryland. He has five years experience in the nuclear operations field. As an officer in the Department of Defense, he served for eight years in the Naval Nuclear Reactor program, which is recognized as one of the most respected nuclear programs in the country. While in the Navy, he served in the engineering department for three years and was certified to act as an Engineer on board U.S. Naval Vessels with nuclear plants. He joined the Department of Energy (DOE) in 1991 and has been a member of Y-12 Site Office since August 1994. Mr. Christenson has completed the Conduct of Operations assessment training conducted by EM-25. He has also received training on DOE Order 5480.31, "Restart of Nuclear Facilities." He has been instrumental in the development of the Plan of Action for the "DOE Readiness Assessment for Receipt, Shipment, and Storage of Special Nuclear Material at Y-12 Plant."

YSORT Biographies (continued)

Randy C. Foust

Mr. Foust received a B.S. degree, in Mechanical Engineering and a M.A. degree, in Business Administration from the University of Tennessee, Knoxville, and has 15 years experience in the nuclear field. Prior to his current assignment at the Department of Energy (DOE) Y-12 Site Office, Mr. Foust spent 5 years at DOE's Savannah River (SR) plant where he was initially employed by Westinghouse Savannah River Company (WSRC) in the Reactor Quality Assurance Department of the Reactor Division and later transferred to the Environmental Protection Department of the ESH&QA Division. At SR, Mr. Foust was assigned duties of Division Coordinator for interface and resolution of DOE Findings, Lead Quality Engineer for the review of Design Modification Packages, ALARA Committee Member, Quality Representative on the Startup Test Review Board, Principal Engineer/Team Lead on the Readiness Self Assessment for Chargeback and Restart of K-Reactor, and Environmental Support and Regulatory Interface for Transition and Decontamination & Decommissioning activities. Prior to joining WSRC, Mr. Foust spent 10 years working in the commercial nuclear field. Initially, Mr. Foust worked for the Tennessee Valley Authority where he was assigned duties of Responsible Systems Engineer for the construction, modification and testing of NSSS and Safety Systems on a Westinghouse PWR, and later, Staff Specialist on Environmental Qualification per 10CFR50.49. He also worked on the Clinch River Breeder Reactor Project as an Assistant Cognizant Engineer for Westinghouse, Advance Reactor Division, and spent two years working as a Marketing Manager and Senior Environmental Qualification Engineer for a independent engineering materials testing laboratory.

YSORT Biographies (continued)

Peter R. Kulesza

Mr. Kulesza received a B.S. degree, in Mechanical Engineering from Bucknell University and has over 14 years of experience in the nuclear field. Prior to joining DOE's Restart Team at Y-12, he was employed by Midwest Technical Inc. During that two-year period, he worked as the assistant manager and coordinator for the condition assessment survey of facilities at Y-12. Mr. Kulesza worked for Lockwood Greene Engineers for 11 years in various capacities ranging from lead engineer to planning consultant. His responsibilities included determining the scope, schedule, and budget for projects, as well as managing all technical disciplines for several inter-state projects simultaneously. While with Lockwood Greene, Mr. Kulesza was involved with facility, utility, and process upgrades, and conceptual designs. The work encompassed chilled water, steam, compressed air, perchloroethylene, oxygen, ventilation, and acid recovery systems; biode-nitrification; uranium reclamation processes from digestion to derby production; vacuum casting and ingot processing; core element machining; and scrap processing. He has also conducted process improvement work for the metals, heat pump, and rubber industries. This work was performed in facilities in Tennessee, Kentucky, and Ohio.

YSORT Biographies (continued)

Gerald R. Mountain

Mr. Mountain has A.S. and B.S. degrees, in Nuclear Engineering and over 25 years experience in the nuclear field. He is a Cum Laude graduate of North Carolina State University and a graduate of the Navy nuclear power program. Since 1992, he has been involved full time in supporting The Department of Energy (DOE) and its contractors in the areas of procedure program development, assessment, and improvement. During 1992, he served as a mentor for EG&G Rocky Flats to the Director, Plant Procedures. Tasks performed included assessment of the plant procedure and document control programs and development and implementation of program improvements. In 1993 he supported the staff of the Office of Nuclear Safety by assisting in the implementation of a new division procedure program, developing a DOE Facility Procedure Program Assessment Plan, performing procedure program assessments, and was a member of the DOE Spent Fuel Task Force that performed assessments of the status of spent fuel facilities at eleven DOE facilities. Mr. Mountain is a member of the DOE Procedure Standards Committee, which has been responsible for the development of DOE standards on procedures. During 1994, he performed an order compliance assessment at Pantex for Mason & Hanger on DOE Orders 5480.21, 22, 23, and 24. In the commercial nuclear field, he has been an Nuclear Regulatory Commission Licensed Senior Reactor Operator at a commercial boiling water reactor (BWR), a procedure program manager, an operator trainer, and technical consultant. From 1978 to 1981 he was the Inspection Manager for BWR inspection for American Nuclear Insurers (ANI) where he was responsible for the management and performance of ANI semi-annual inspection activities at all commercial BWRs. During this time, he was also a certified Quality Assurance lead auditor. Prior to entering the commercial nuclear industry, he served ten years in the U.S. Navy as a Reactor Operator, Gunnery Officer, ASW Officer, and is a graduate of the Naval Enlisted Scientific Education Program.

YSORT Biographies (continued)

Dennis O. Myers

Mr. Myers has a B.S. in Mechanical Engineering from the University of Virginia, and is a certified nuclear test engineer and a certified NRC inspector. Mr. Myers has twenty years of nuclear-related experience balanced between line and oversight positions. These positions involved responsibility for the line implementation of industry regulations and responsibility for the oversight of regulated operating activities. As an independent regulatory and technical advisor, he served the NRC in the assessment of inspection related corrective actions at several reactor sites. Mr Myers evaluated the technical adequacy of electrical, mechanical, and I&C modifications to safety-related systems. In addition, he served as the subject matter expert in the areas of conduct of operations and operating procedures for the restart of operating activities at RFO in 1995. The restart was conducted in accordance with DOE Order 5480.31 and closely monitored by the DNFSB. Mr. Myers has conducted seminars on conduct of operations for prospective Tiger Team members. As a senior operations program consultant, he performed a mentoring function to the managers of licensing and QA at a commercial BWR. He interfaced with and resolved NRC pre- and post-reactor startup concerns and issues. He provided a day-to-day assistance in the implementation of regulations to operations and I&C departments. He also provided leadership in the development of the performance-based quality surveillance program. Mr. Myers served as NRC senior resident and resident inspector where he performed detailed assessments of operating activities at several commercial reactors. In addition, he was a nuclear shift test and chief test engineer. He conducted naval nuclear propulsion plant overhaul activities within the bounds of rigid conduct of operations requirements and in the midst of profit driven production programs.

YSORT Biographies (continued)

George Napuda

Mr. George Napuda has over 30 years experience in commercial and naval nuclear power, vendor control, and manufacturing. He is a graduate of Picatinny Arsenal Toolmaker School and attended Franklin and Marshall College and Fairleigh Dickinson University. He holds Journeyman Certification from the Department of Army and Federal Committee on Apprenticeship, a B.A. degree, in Liberal Arts and Science and an M.A. degree, in Industrial Psychology. He has held certifications, based on formal examinations, in eddy current, magnetic particle, liquid penetrant, radiographic, ultrasonic, and visual nondestructive testing techniques; statistical quality control, metrology, and vendor evaluation; and management oversight, performance evaluation, and severe accident overview. He has also earned a number of other certifications by examination including Pressurized Water Reactor Facilities and Regional Inspector (Nuclear Regulatory Commission (NRC)); Lead Auditor (utility); and Oxygen Breathing Apparatus (Department of Interior). He has participated in comprehensive management, program, and performance assessments for almost two decades both as a team member and a team leader. He has successfully completed a number of international assignments, presented technical presentations at professional conferences, and presented adult technical training courses. Examples of areas in which he was instrumental in effecting industry performance improvements include design, procurement, material management, quality assurance, and quality control programs; corrective action methodology; root cause analysis; and maintenance, training, and manufacturing processes. He has presented technical papers at international, national, and regional levels. He has given formal training sessions and "field" training to the Department of Energy, the NRC, and utility technical and professional staff. His career has included positions with private industry, Department of Defense, and NRC. He is now serving as a consultant to the Department of Energy, NRC, and the domestic and international nuclear power industries.

YSORT Biographies (continued)

Frank S. Poppell

Mr. Poppell received a B.S. degree, in Nuclear Engineering, from the Georgia Institute of Technology and has eighteen years in the nuclear field. He has three years experience at the DOE Rocky Flats and Savannah River facilities performing safety evaluations, assisting with the resolution of DOE issues for restart of K-Reactor, evaluating Department of Energy (DOE) oversight concerns (Operational Readiness, Tiger Team, and Defense Nuclear Facility Safety Board Reviews) for incorporation into waste management facility startup documents, and performing DOE Order compliance assessments. He has eleven years experience in the commercial nuclear industry primarily in the areas of Licensing/Regulatory Compliance, Reactor Engineering, and Operations as a Shift Technical Advisor. His commercial nuclear power experience includes coordinating resolution of Nuclear Regulatory Commission issues, providing Operations oversight for Technical Specification operability and reportability determinations, directing control rod movements and power maneuvers, and preparing/reviewing Unreviewed Safety Question evaluations. He also has four years nuclear experience at Charleston Naval Shipyard as a Shift Test Engineer coordinating reactor plant testing on submarines during overhaul and refueling.

YSORT Biographies (continued)

Richard L. Renne

Mr. Renne received a M.S. of Public Health Degree in Health Physics, Medical Physics, and Environmental Health from the University of Minnesota. He has 25 years of experience in operational health physics, medical radiology, environmental health in governmental, private, and institutional operations. He has served in international operations as technical liaison to the Federal Republic of Germany, the Republic of South Korea, and the British Ministry of Defense. He has served as consultant/radiological advisor to Salem and Cooper nuclear power facilities, Professor and Chairman of the Department of Radiological Sciences, University of Tennessee Center for Health Sciences, Radiation Manager at Pantex, Fernald, and Rocky Flats, Chief Health Physicist for the US Army Missile Command, and Radiation Specialist for the 4th Naval district as an Officer in the United States Navy. Mr. Renne has operational experience in radiological devices and applications including medicine, operational health physics, lasers, electro-magnetic pulse technology, and nuclear weapons. He has served as consultant to numerous private enterprise companies in association with new product development and marketing techniques. Mr. Renne has been an instructor, evaluator, and assessor for Conduct of Operations implementation at various locations. He received his initial NRC assessment training as a health physicist employed with an agreement state for nuclear licensing, inspection, and evaluation. Mr. Renne has qualified as an NRC licence manager for medical and operational sources. He started his career by obtaining National Certification from the American Registry of Radiologic Technology for medical uses of radiation and radiation producing devices.

YSORT Biographies (continued)

Charles H. Robinson

Mr. Robinson has B.S. degree in Chemical Engineering from the University of Massachusetts and has completed graduate course work toward a M.S. Degree in Nuclear Engineering at the University of Lowell. He has seven years experience in nuclear criticality safety. Prior to contracting with the Department of Energy through Enercorp Federal Services Corporation in 1995, he was employed as a Nuclear Criticality Safety Engineer by Babcock & Wilcox, Naval Nuclear Fuels Division, in Lynchburg, Virginia. While at Babcock & Wilcox, he performed criticality safety analyses; served as a certified quality assurance reviewer of analyses; reviewed and approved procedures; and conducted audits, assessments, and investigations. Prior to Babcock & Wilcox, he was employed by the U. S. Nuclear Regulatory Commission (NRC) as a Nuclear Process Engineer and Chemical Engineer, and was certified as an NRC Incident Investigator. While at the NRC, he performed various licensing and inspection activities for licensed nuclear fuel cycle facilities, including reviewing and approving license amendments; performing independent criticality safety analyses; and conducting operational team assessments, augmented inspections, and root-cause investigations. His assessment/inspection/restart experience, as a team member, at facilities includes Allied Chemical, Babcock & Wilcox, Combustion Engineering, General Electric, Nuclear Fuel Services, Sequoyah Fuels, Siemens, and Westinghouse, and involves commercial fuel production, naval nuclear fuel production, uranium hexafluoride production, uranium recovery, and waste treatment.

YSORT Biographies (continued)

Thomas Rogers

Mr. Rogers received a B.S. degree in Nuclear Engineering from the Georgia Institute of Technology and has seventeen years experience in the nuclear field. He has over four years experience at Department of Energy (DOE) facilities working for DOE's Office of Nuclear Safety where he performed assessments at the Princeton Tokamak and the Los Alamos TA-55 Plutonium Facility. He served as an Operational Readiness Review team member for Westinghouse Savannah River Company at the Savannah River K-Reactor and In-tank Precipitation Facility. He has eight years experience in the commercial nuclear industry where he participated in numerous performance-based assessments including conduct of operations assessments, emergency operating procedure assessments, safety system functional inspections, and quality assurance audits. He also participated in restart efforts at the Sequoyah, Indian Point 3, North Anna, and Rancho Seco nuclear power stations. Additional commercial nuclear power experience includes over three years with the Nuclear Regulatory Commission where he served as an operator-licensing examiner for pressurized water reactors. He has five years experience at a naval shipyard as a nuclear shift test engineer on fast attack submarine and cruiser reactor plants.

YSORT Biographies (continued)

Mark A. Sundie

Mr. Sundie has a B.S. degree in Nuclear Engineering from the Pennsylvania State University and has over 15 years experience in the nuclear field. Prior to joining the Department of Energy (DOE) in late 1989, he was employed by the Tennessee Valley Authority (TVA) for ten years, where he was assigned to the Bellefonte Nuclear Plant in Scottsboro, Alabama, as a Systems Engineer and Reactor Engineer. While at Bellefonte, he completed the training programs for Shift Technical Advisor and Station Nuclear Engineer. He also spent five years at the Sequoyah Nuclear Plant in Soddy-Daisy, Tennessee, where his duties included nuclear engineering, reactor core surveillance, Restart Test Director, and Refueling Test Director. Mr. Sundie joined DOE in late 1989 at the Savannah River (SR) Operations Office under the Assistant Manager for Defense Programs, Separations Division. His first assignment was as a Facility Representative for FB-Line, 247F, and 235F facilities. He served in this position for three years. In his next assignment as Program Engineer for Separations F-Canyon programs and Division Training Liaison, Mr. Sundie participated in the Order Compliance reviews for HB-Line, FB-Line and F-Canyon and completed all the necessary division requirements for subject matter expert in the area of Training and Qualification programs. His restart experience consists of roles as a team member in the HB-Line, FB-Line, and 247F Operational Readiness Reviews. Most recently, he served as the DOE-SR Team Leader for both the F-Canyon and FB-Line Restart efforts, where he supervised eighteen subject matter experts from the DOE-SR staff and validated the contractor's state of readiness prior to commencement of the independent Operational Readiness Review. Mr. Sundie came to the Y-12 Site office in February 1995, where he currently serves as the Technical Support Team Leader.

YSORT Biographies (continued)

Thomas S. Tison

Mr. Tison received a B.S. degree, in Aerospace Engineering from Virginia Polytechnic Institute and a MBA, in Research and Development from Florida State University. He also completed courses of study at the U.S. Air Force (USAF) Squadron Officer's School and Air Command and Staff College. Mr. Tison has 15 years experience with the Department of Energy (DOE). Prior to his position as Restart Team Manager, he served as Site Manager for the DOE K-25 Site Office. He provided direction to the Management and Operations contractor with a work force of 1800 employees. The primary focus of the K-25 Site is environmental restoration and waste management activities. Mr. Tison was responsible for ensuring that effective programs were established and maintained by the contractor for environmental, safety, and health permitting and compliance with national programs, such as the Clean Air Act; Clean Water Act; Resource Conservation and Recovery Act; OSHA; and Nuclear Safety. Mr. Tison was also responsible for the safe, compliant, efficient operation of the Toxic Control Substance Act incinerator. He supervised fifteen federal employees and provided direction to eleven contractor employees. Previous to his work at K-25, Mr. Tison served in positions ranging from Program/Project Engineer to Program Management Branch Chief at the DOE Y-12 Site Office. He was involved in the design and construction of numerous capital construction projects and was responsible for establishing and implementing project management policy and guidelines. Before joining DOE, Mr. Tison performed work for the Clinch River Breeder Reactor. He also served 10 years in the USAF as a program control officer, configuration manager, and structural engineer.

YSORT Biographies (continued)

Kirk W. Van Dyne

Mr. Van Dyne has over 15 years of nuclear regulatory experience in the U.S. Navy nuclear propulsion program, commercial nuclear power program, and Department of Energy (DOE) facilities. He has a broad technical background in the areas of operations, licensing/regulatory compliance, inspection, and oversight. Mr Van Dyne received a B.S. degree, in Civil Engineering Technology from Virginia Polytechnic Institute and State University. Prior to his involvement in the assessment of resumption activities at Y-12, Mr. Van Dyne consulted to the Nuclear Regulatory Commission (NRC) at Tennessee Valley Authority (TVA) Watts Bar nuclear facility. In this capacity, he augmented NRC inspection resources to determine TVA's readiness for receipt of an operating license. Mr. Van Dyne consulted to Westinghouse Savannah River Company (WSRC) and participated in the development and implementation of the Systematic Evaluation Program (SEP). He contributed a commercial nuclear regulatory perspective to this evaluation program. Prior to the SEP, his efforts were focused on the resolution of issues relating to the K-Reactor restart as well as the development and implementation of the post-restart issue management system. For three years, Mr. Van Dyne assisted in the restart and startup of troubled commercial nuclear plants, including Comanche Peak and Turkey Point. During these periods Comanche Peak received an operating license and Turkey Point was removed from the NRC's list of Category "3" plants. Mr. Van Dyne was also employed by the NRC where he held various positions, including that of Resident Inspector. He received advanced training in both pressurized water and boiling water reactor technologies. While employed by the U.S. Navy, Mr. Van Dyne served as a Shift Test and Chief Test Engineer at Norfolk Naval Shipyard. His responsibilities included the planning, supervision, and review of plant condition changes and post maintenance testing in support of the overhaul of S5W and S6G submarine reactor plants.

YSORT Biographies (continued)

Gary F. Weston

Mr. Weston received a B.S. of Engineering degree in Marine Engineering, from the State University of New York Maritime College and has over 25 years experience in various engineering positions and assignments. Prior to joining the Y-12 Restart Team, he was employed by Stone and Webster Engineering Corporation where he served in positions as project manager for outage modifications, project design manager, certified lead auditor, lead startup engineer, consultant for events analysis and system operations assessments, design baseline verification program manager, and construction completion planning supervisor for various nuclear utilities. During this period of employment, he spent two years with the Institute of Nuclear Power Operations as a program manager in the Events and Analysis Division, which was responsible for plant operations assessments and event analysis. Prior to these assignments, he was employed by EDS Nuclear as superintendent of mechanical quality engineering for a nuclear construction project, by LPL for both field engineering and startup and test engineering positions and by Newport News Shipbuilding as a nuclear construction supervisor for overhaul and refueling of S5W plants. Previous to these nuclear assignments, he served in 2nd and 3rd assistant engineering positions aboard various US merchant vessels.

YSORT Biographies (continued)

Michael Klanecky

Mr. Klanecky received a B.S. degree of Management/Industrial Psychology from Regis University, an A.S. in Mathematics and has over 15 years experience within the DOE complex in various quality assurance and nuclear facility conduct of operations assignments. At Rocky Flats, Mr. Klanecky was directly involved in the restart activities of Building 559, supporting Operations and Quality Assurance management functions. He performed numerous assessments of Plutonium Operations/Conduct of Operations and analytical laboratory management responsibilities in Building 559 following resumption of laboratory operations. In supporting management, he assisted in configuring the path of cultural change associated with implementing Conduct of Operations. As a support service contractor to the Department of Energy, Mr. Klanecky has accomplished numerous in depth QA assessments of contractor administrative and operations programs. Gaining several certifications in the audit function, Mr. Klanecky has developed and lead assessments and readiness reviews of special operations involved with the Rocky Flats Thermal Stabilization Program, i.e., consolidate and place in a safe configuration plutonium oxide waste, residue, and metal. In addition, he developed and coordinated readiness reviews for the limited restart of nuclear facilities as well as the decommissioning of non-essential weapons production facilities. Other areas of lead assessor responsibility include, the quality assurance evaluation of Rocky Flats Safety Program (OSRs, CSOLs, and nuclear criticality safety), facility engineering QA, software development QA and environmental QA and regulatory compliance (i.e., RCRA, Waste Management, and Underground Storage Tanks). Mr. Klanecky supports Y-12 Site Office Program Management and Environmental Safety and Health branches by performing QA and Conduct of Operations related evaluations associated with on-going Y-12 Plant and nuclear facility restart activities.

7.2 YSORT Findings

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3000.01	USQD No. 95-CAASX4, Rev. 0 for procedures Y50-53-SO-031 and Y50-53-SO-005 was not properly performed.	SE	4	x	
3001.01	All key personnel and supervisors and support personnel required to resume safe operations have not been identified by category.	TQ	18	x	
3002.01	Evidence file C303ME does not provide evidence that technicians meet the one year job related experience required of a technician.	TQ	14	x	
3002.02	Evidence File C303DS does not document an evaluation of JD Moeretz for minimum education and experience requirements as a supervisor.	TQ	14	x	
3002.03	Fire Department personnel have not been categorized under 5480.20 and evaluation against minimum education experience requirements.	TQ	14	x	
3002.04	Plant Shift Superintendent personnel have not been categorized under 5480.20 and evaluated against minimum education and experience requirements.	TQ	14	x	
3004.01	Pre-and Post-restart Findings and Observations generated from the DOE and LMES assessments of RSS and DUO were not evaluated to determine their impact or significance towards D&A to ensure that the deficiencies were corrected or non-existent within D&A.	MG	25	x	
3004.02	The evidence files do not contain findings or deficiencies which were generated after May 2, 1995 to show their review by the IMPRB in terms of their D&A applicability nor their pre/post restart significance.	MG	25	x	
3004.03	The conclusion that post-restart RSS findings are post-restart for D&A is not supported by conclusive evidence and no indication is provided to show the process which was performed to provide this conclusion especially for deficiencies from RSS and DUO.	MG	25	x	
3005.01	LMES Finding MG-07 from LMES MSA RSS was not reviewed or taken into consideration during D&A Resumption Activities. MG-07 must be resolved prior to D&A resumption. Once all operations are restarted, this finding will have no basis for resolution.	MG	25	x	
3006.01	Procedure Y50-53-SO-005 job aids were deficient. (Rev. 1)	SE	10, 12		x
3006.02	Alarm horns were deficient. (Rev. 1)	SE	10, 12		x
3008.01	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR for the PSS.	TQ	18	x	
3008.02	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	
3008.03	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	
3008.04	The D&A evidence files do not provide documentation of the minimum staffing requirements established by the 9204-2/2E OSR.	TQ	18	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3009.01	Operations Procedure Y20-NM-303 cannot be performed as written. Operators demonstrated a lack of familiarity and use of this specific procedure. The quality of the specific procedure training defined in the TMS for Module 07451 could not be verified.	OP	19	x	
3010.01	Inadequate evidence file documentation of the status of conduct of operations implementation program for Beta 2E Quality Organization associated with D&A resumption. Evidence File C601Q does not meet CO-19 nor the criteria of evidence file C601Q.	OP	19	x	
3010.02	Inadequate evidence file documentation of implementation of a compensatory measure program required by RFA-160 by the Quality Organization for restart of the D&A mission area. Evidence file C603Q does not meet the closure criteria.	OP	19	x	
3011.01	Building 9204-2E assembly area bridge crane hoisting evolutions that require component lifts which utilize crane mounted vacuum pumps do not maintain required vacuum to ensure safety during lift operations.	OP	19	x	
3012.01	Rigor and formality in the use of Operations Standing Orders as required by Chapter XV of the Conduct of Operations Manual needs to be improved.	OP	19	x	
3013.01	Daily administrative checks that are currently performed on the CAAS and SNM control are incorrectly exempted from the requirements of Conduct of Operations Chapter II in 9204-2E operations.	OP	19	x	
3013.02	YSORT observation of performance of separate DAC of SNM area in two 9204-2E areas were found inadequate in meeting requirements for performing hands-on verification of TID seals.	OP	19	x	
3014.01	Lack of any support organization mentoring program description that defines the support organization current mentoring activities being performed for conduct of operations implementation of DOE Order 5480.19.	OP	19		x
3016.01	The Internal Dosimetry Program is presently operating without current technical procedures or evidence of qualified personnel. Procedure Y10 102 does not authorize the suspension or rescission of procedures by management, other than that described therein.	MG	20, 19		x
3021.01	Rigor and formality in maintaining system status files needs improvement based on the limited assessment of the file. LMES needs to improve the quality of the file and comply with the intent of Chapter VIII requirements.	OP	19	x	
3021.02	The current system configuration drawings for the Beta 2 and 2E Fire Protection Systems are inadequate for operations perspectives. Full system P&IDs and electrical drawings for the Fire Protection System need to be developed and issued.	OP	19	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3021.03	There is no required controlled issue of and distribution of system status file configuration drawings, P&IDs, Single line and schematic drawings to the Nuclear Facility Operation Managers to assure that the latest drawing revision is maintained.	OP	19	x	
3022.01	Drill Program has not been effectively implemented.	OP	22		x
3022.02	The level of knowledge of the drill participants radiation control skills was not challenged and the evolution was not a learning experience.	OP	22		x
3023.01	Co-signers of the MOUs contained in CSA-160 do not have an official listing of key management/operations personnel in the Nuclear Facilities which are part of Nuclear Operations.	MG	24		x
3023.02	Facility specific conduct of operations training or briefings need to be developed and offered to support organizations (PSS, Fire Department, RadCon, and Quality to allow individuals first hand information on the requirements of the COO manual and MOUs.	MG	24		x
3026.01	The method of controlling procedures for use in B2E has not been effective in ensuring that the current version of procedures is in use.	PR	7	x	
3026.02	Beta 2E is not using working copies of procedures as described in Y10-189, "Document Control."	PR	7	x	
3026.03	The Plant Procedures Group (as the Releasing Organization) is not marking distributed procedures as Controlled Copies as required by Procedure Y10-189.	PR	7		x
3026.04	The reading room in Beta 2E should be treated as a Document Management Center and as such should comply with the requirements of Procedure Y10-189.	PR	7	x	
3027.01	Per procedures, LMES does not meet required schedules for submittals of revised RFCs and RFAs after rejection of original submittals by DOE.	MG	27		x
3028.01	Evidence indicating all compensatory measures applicable to D&A are effectively implemented is unavailable.	MG	27		x
3030.01	Personnel on the D&A resumption crew from the Fire Department, PSS, NCSD, and DSO are deficient in their Energy Systems Training Requirements and/or their Unescorted Access the Y-12 MAAs training requirements.	TQ	13	x	
3031.01	DSO Procedures required for D&A activities that have not been upgraded using the increased rigor that has been applied since 9/1/95 in performing Verification and Validation should be upgraded to this standard prior to use.	PR	7		x
3031.02	The development and technical review stages of the procedure process need strengthening in order to relieve the burden experienced during verification and validation.	PR	7		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3031.03	The current process being used for identification of CSA requirements to be incorporated into procedures is an undocumented process. The process needs to be proceduralized and reviewed to ensure that requirements are considered and process is followed.	PR	7		x
3035.01	The PSS and Fire Department Personnel perform duties that are governed by DOE Order 5480.20/20A but they are not included in the Y 12 TIM.	TQ	13		x
3035.02	PSS and Fire Department training requirements for D&A resumption have not been identified.	TQ	13	x	
3035.03	TMS identifies nine DSO personnel on the D&A resumption crew as deficient in completing their qualification cards.	TQ	13	x	
3035.04	FMO have not completed any of their qualification cards.	TQ	13		x
3036.01	The Required Posting Log Sheets for Beta 2E were incomplete. Approval signatures and procedural references were missing.	OP	19	x	
3036.02	Quality Organization operator aids are not integrated into the D&A program.	OP	19	x	
3036.03	The MOU requires QO to review D&A Standing Orders and operator aids (as applicable), and Required Reading information. There is no evidence to show this requirement is being consistently met.	OP	19	x	
3037.01	Evidence file deficiencies in C10.03, C10.02, and C10.01.	MG	25	x	
3037.02	A memo contained in C10.03 states that it was inappropriate to include finding I20865 in the review because it was coded as Management Commitment. No where in the criteria does it state, nor was it accepted by DOE in the POA development.	MG	25	x	
3037.03	Numerous deficiencies identified by DOE and LMES during assessments of RSS and DUO and Special Operation Packages containing findings were not included on the list of assessments to be evaluated for pre/post D&A significance.	MG	25	x	
3037.04	Only one finding from Source S2069 was evaluated for corrective action adequacy. C10.02 evidence file is extremely deficient since review was not performed on corrective actions taken to close findings and did not include actions to close CSA infractions.	MG	25	x	
3037.05	Numerous findings status as closed in C10.03A were noted as having unsatisfactory corrective action in C10.02. No information is presented to indicate what actions will be taken to reopen these findings and correct the unsatisfactory status.	MG	25		x
3037.06	Numerous pre-restart findings identified in C10.03A were not closed but are in the process of being resolved.	MG	25	x	

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3037.07	Evidence File C10.02 performs and evaluation on the adequacy of action taken. The evaluation performed and documented in C10.02 was not performed on the actions taken to resolve the pre-restart findings when issues were not closable to support D&A.	MG	25	x	
3037.08	At the time of this evaluation, not all the pre-restart issued identified in C10.03A were closed or resolved as stated in the text of the file.	MG	25	x	
3039.01	A significant number of D&A procedures are under revision that will require additional training prior to D&A resumption.	TQ	16	x	
3045.01	Procedures do not always include those controls and limits significant to the nuclear criticality safety of the operation, and do not always specify all parameters they are intended to control.	SE	4	x	
3045.02	No objectives or criteria exist for NCS D to provide technical guidance in the development of operating procedures or in the improvement of criticality safety practices and procedural requirements.	SE	4	x	
3045.03	Supervisor/worker participation in the review of CSAs and the incorporation of CSA requirements into procedures is evident	SE	4	x	
3046.01	LMES does not have personnel assigned to continuing training programs in TMS after initial qualification.	TQ	13		x
3049.01	LMES has not submitted a Conduct of Operations applicability matrix for Disassembly and Assembly Operations Facilities for approval by the DOE Y-12 Site Office as required by DOE Order 5480.19.	OP	19	x	
3050.01	Controls established by NCS D, PSS, and the Fire Department to ensure only trained and qualified personnel are assigned to work are ineffective.	TQ	14	x	
3051.01	The timely recognition and prompt corrective action to Conduct of Operations issues by some floor level supervisors in normal operations activities need improvement in 9204-2E.	OP	19	x	
3056.01	Operator Aid OA-9204-2E-95-47 instructions to personnel were relative to RadCon controls and by definition invoked the memorandum of understanding between Building 9204-2E and the RadCon organization and proper posting requirements.	MG	20		x
3059.01	Equipment Lockout/Tagout Program is not always being effectively implemented in Beta 2E by support organizations.	OP	19		x
3060.01	LMES has not completed an analysis of all Y-12 positions to determine if they are governed by DOE Order 5480.20A.	TQ	13		x
3060.02	The PSS and Fire Department have not upgraded their training programs to meet the requirements of DOE Order 5480.20A.	TQ	13		x
3064.01	Numerous findings indicate a Y-12 site-wide programmatic weakness in the USQD process.	SE	4		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3066.01	Procedure ESPS-FO-006 needs to be revised to provide correct instructions for the performance of the surveillance and to address partial performance of the procedure.	PR	7	x	
3066.02	Sitewide guidance on the performance of surveillance procedures on safety significant systems is lacking in that no guidance is provided on whether or not portions of procedures may be performed and what decision process should be used.	PR	7		x
3067.01	Inadequate justification for CAAS detector setpoint changes.	SE	4, 11		x
3067.02	USQD screen for CAAS detector setpoint changes was not properly performed.	SE	4		x
3068.01	Quality Organization procedures that have not been revised since 4/1/95 should not be used for operating activities until they have been upgraded in accordance with Y10-102.	PR	7	x	
3068.02	Quality Organization documents (such as those observed near the Maser) that are used to supplement or complement operating procedures should be subjected to the same review and approval process as the procedures.	PR	7	x	
3069.01	The PSS does not have division Training Office/Manager to manage training related issues.	TQ	14		x
3072.01	Deficiencies identified by DOE/YSORT from the evaluation and assessment of D&A readiness to resume operations have not been evaluated for generic implications. These deficiencies should be evaluated for applicability within D&A operational boundaries.	MG	25	x	
3072.02	Deficiencies identified from DOE/YSORT, LMES and DOE IRA teams should be evaluated for generic applicability at the site level as required by QA-16.1.	MG	25		x
3074.01	Section VI.A.1. does not contain the requirement to immediately notify the PSS upon detection that any listed Sprinkler System is not operable.	SE	4		x
3075.01	No procedure or other document demonstrate that the operability of the Walk-in-hood, including the relative accuracy of the Air Flow Gauge, was accomplished during the quarterly survey.	ST	28		x
3077.01	The QO engineers Koerner and Waldrop do not have signed qualification cards on file.	TQ	18		x
3077.02	The following DSO files did not have signed qualification cards on file: Wasilko, Reis, Linson, and Hunnicutt.	TQ	18		x
3077.03	There is no education and experience history on file for R. Roosa, Nuclear Operations Manager.	TQ	18		x
3077.04	There is no D&A comprehensive oral examination on file for DSO personnel Howard and Scott.	TQ	18		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3077.05	There is no D&A comprehensive written examination of file for DSO cleaner Scott.	TQ	18		x
3077.06	The education waivers on file for DSO personnel Hunnicutt and Thomas are not appropriate.	TQ	18		x
3077.07	None of the PSS records reviewed had education or experience histories, training exception approvals, medical information, or qualification cards.	TQ	18	x	
3077.08	The following FMO personnel records included training exceptions but the approved exception approval forms were not on file: Ellis, Freshour, Lewis, King, Campbell, Barnes, Bryant, Beeler, McDonald, and Rowell.	TQ	18		x
3077.09	The following FMO files had no education or experience histories and no documented review that they meet DOE Order minimum education experience requirements: Ellis, Grizzle, Gerth, King, Campbell, Barnes, Beeler, Anderson, and Pride.	TQ	18		x
3077.10	None of the FMO files had signed qualification cards to document their task qualifications for D&A.	TQ	18	x	
3077.11	Minimum staffing requirements are not supported by the training record files for the PSS, FMO, and the Fire Department.	TQ	18	x	
3087.01	9204-2E assembly are bridge crane hoisting evolutions that require component lifts which utilize crane mounted vacuum pumps do not maintain required vacuum to ensure safety during lift operations.	OP	19		x
3096.01	A Fire Protection System air compressor electrical breaker was observed in an energized position in Building 9204-2E disassembly area adjacent to the walk-in-hood.	OP	19	x	
3096.02	Fire Protection Operations Department has not effectively implemented the requirements of Conduct of Operations Manual Chapters IX or Chapter II, nor has informed facility Operations of the status of the Fire Protection System.	OP	19		x
3096.03	Equipment tagging for the Fire Protection valve station next to the walk-in-hood area of 9204-2E disassembly area was found deficient for compliance to Conduct of Operations Manual Chapter XVIII equipment labeling requirements.	OP	19		x
3098.01	No guidance exists for NCSD to provide technical assistance in the methods of implementing criticality safety requirements into operating procedures or in the improvement of criticality safety practices and procedural requirements.	SE	4		x
3099.01	No guidance exists in the procedures development program on the methods for implementing criticality safety requirements identified in the technical procedures.	SE	4		x

Finding No.	Finding Description	Functional Area	Core Objective	Pre-Restart	Post-Restart
3102.01	The timely recognition and prompt corrective action to Conduct of Operations issues by some floor level supervisors in normal operations activities need improvement in 9204-2E.	OP	19		x
3108.01	Fire Protection Operations was found to have locked electrical equipment breaker/disconnects and locked areas of operations facilities in non compliance with Administrative Control Tagging Lockout/Tagout program requirements.	OP	19		x
3109.01	All Fire Department personnel identified on the D&A resumption crew have not completed required training.	TQ	13		x
3110.01	Contrary to the requirements of LMES Procedure QA-16.1, deficiencies are stated as "closed" in ESAMS prior to completion of the corrective action or the independent verification as required by QA-16.1	ST	30		x

Totals

YSORT Findings	102
Pre-Restart	55
Post-Restart	47

7.3 Lessons Learned

YSORT evaluated its activities during the D&A assessment process and identified the following lessons learned. These should be applied to future YSO/YSORT assessments in an effort to improve upon the process.

1. YSORT's assessment of the LMES MSA and RA (CO-30) should be assigned to the Resumption Area Lead since this person is coordinating the effort and, therefore, is more knowledgeable of the overall progress and performance of LMES' assessments. Furthermore, a line item for each Functional Area Lead should be incorporated into the assessment plan to accommodate furnishing applicable information to the Resumption Area Lead. From this information, a "roll-up" of the assessment issues could be developed.
2. In the D&A assessment plan, every CO includes a line item concerning the resolution of previous findings germane to that CO. Similar to the above lesson learned, the "roll-up" should be developed by the Management Functional Area Lead as part of CO-25. Again, the other Functional Area Leads will need a line item in the assessment plan to accommodate this effort.
3. Several issues should be clarified in future POAs including: 1) the scope and intent of CO-28 concerning the startup test program; 2) the identification of personnel required for resumption and the scope of training requirements for these personnel, specifically for the support organizations; and 3) expectations and requirements of procedure development (e.g., inclusion of CSA limits and conditions in procedures).
4. For several YSORT pre-restart findings, LMES developed corrective action plans, which had post-restart actions, and were accepted by YSORT. In order to close out the pre-restart finding, a post-restart finding had to be generated. If there are obvious pre- and post- corrective actions required for resolution of the issue, process both pre- and post-findings concurrently.
5. The parallel process established to perform formal and informal V&Vs worked fairly well; however, it is necessary to obtain a letter from LMES to provide expectations for this process, including the frequency of formal correspondence (i.e., bi-weekly, weekly, and then daily submittals).

6. The management of the closures of findings was significantly complicated by LMES breaking one finding into more than one part (i.e., ESAMS ID number) if the finding involved more than one organization or had actions with different scheduled completion dates. In future assessments, LMES should be required to submit one corrective action plan and/or closure package for each finding at which point YSORT would perform their validation/verification. LMES' verbal agreement with the YSORT counterpart on the proposed or completed corrective actions should be acceptable; however, YSORT should not manage these parts since the issue is not completely addressed.

7.4 References

1. DOE "Y-12 Site Office Restart Team Assessment Plan for Disassembly and Assembly Resumption," October 19, 1995.
2. DOE Y-12 Site Office Operating Procedure YSO-5.4.1, "Restart Team Assessments," April 14, 1995.
3. DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," May 18, 1992.
4. DOE Order 5480.20, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities," June 19, 1991.
5. DOE Order 5480.21, "Unreviewed Safety Questions," December 24, 1991.
6. DOE Order 5480.24, "Nuclear Criticality Safety," August 12, 1992.
7. DOE Order 5480.31, "Startup and Restart of Nuclear Facilities," January 8, 1996.
8. Lockheed Martin Energy Systems, Inc., Y-12 Plant, Document Y/OA-6238, "Readiness Assessment Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," Revision 2, January 4, 1996.
9. Lockheed Martin Energy Systems, Inc., Y-12 Plant, Document Y/OA-6248, "Management Self-Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant," January 4, 1996.
10. Lockheed Martin Energy Systems, Inc., Oak Ridge Y-12 Plant Command Media, Procedure Y10-190, "New Start-up Requirements," January 2, 1996.
11. Martin Marietta Energy Systems, Inc., Y-12, "Nuclear Operations Conduct of Operations Manual," 1995.
12. Martin Marietta Energy Systems, Inc., Y-12 Plant Quality Assurance Program Policy and Procedures, Y60-160, "Corrective Action Program," January 23, 1995.

13. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Administrative 10 Series, Vol.4, Y10-189, "Document Control," April 25, 1995..
14. Martin Marietta Energy Systems, Inc., Y/AD-627, "Mentor Program Description for Y-12 Resumption," January 12, 1996.
15. Martin Marietta Energy Systems, Inc., Y-12 Plant, Y/AD-623, "Plan for Continuing and Resuming Operations," October 1994.
16. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Y10-111, "Required Reading," Rev. 1, September 1, 1992.
17. Martin Marietta Energy Systems, Inc., Y-12 Plant Quality Assurance Procedures, Y60-164, "Lessons Learned," June 30, 1992.
18. Martin Marietta Energy Systems, Inc., Y-12 Plant Procedures, Administrative 10 Series, Vol. 3, Y10-102, "Operating Procedure Development, Revision, and Control," September 1, 1995.
19. Martin Marietta Energy Systems, Inc., Procedure, QA-16.1, Rev. 1, "Corrective Action Program," June 1994.
20. Martin Marietta Energy Systems, Inc., Health and Safety Procedures, 70 Series, Vol. 1, Y70-027, "Safety, Health, and Environmental Suggestions, and Complaints," August 8, 1988.
21. Request for Approval, Request No. LMES/Y-12-DOE-4330.4A-CSA-2B, "Implementation of Maintenance Requirements in the Field," October 30, 1995.
22. Request for Approval, Request No. LMES/Y-12-DOE-5480.7A-CSA-40C, "Testing of Fire Protection Systems," May 25, 1995.
23. Request for Approval, Request No. MMES/Y-12-DOE-5480.7A-CSA-47B, "Special Hazard Protection," April 13, 1995.
24. Request for Approval, Request No. MMES/Y-12-DOE-5480.19-CSA-160B, "Conduct of Operation Implementation Deficiencies," February 7, 1996.

Addendum to Enclosure 1
Ltr: Gustavson to Spence
Dated February 23, 1996

2000
LOCKHEED MARTIN 

Memorandum

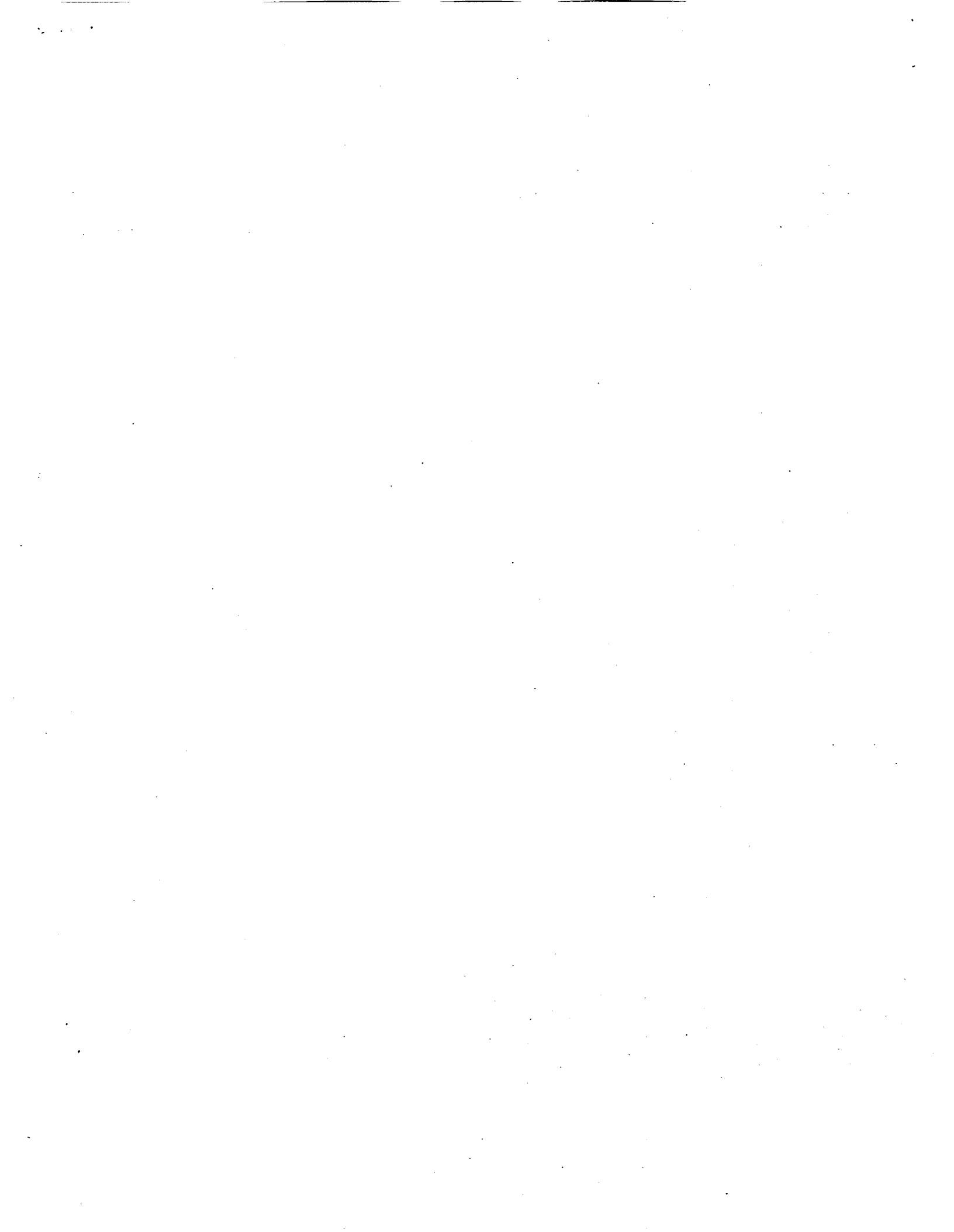
Date: February 22, 1996
To: F. P. Gustavson
From: JPF J. P. Flynn, 701 SCA, MS-8241, 6-4614
Subject: **Readiness Assessment Report for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant**

In accordance with R. K. Roosa's memo of January 12, 1996, a readiness assessment (RA) was conducted for Disassembly/Assembly Activities on January 15-26, 1996. Due to the fact the RA team determined that the Quality Organization (QO) was not prepared to resume operations, four members of the team returned on February 19-20, 1996 to reassess QO.

The results of this reassessment are contained in the attached addendum to the original report Y/OA-6249.

JPF:lhs

Attachment



**Lockheed Martin Energy Systems, Inc.
Readiness Assessment Report
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant**

January 19-20, 1996

This document has been reviewed by the Y-12
Classification Office, and has been determined to
be

UNCLASSIFIED

This review does not constitute clearance for
Public Release.

Date 2.22.96 RB

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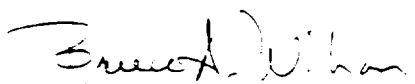
I, by signature here, acknowledge that I concur with the findings and conclusions of this addendum:




N. T. Ford
Training/Qualification



H. A. Oliver III
Operations/Procedures



B. A. Wilson
Operations/Procedures

APPROVED: 

J. P. Flynn, RA Team Manager

DATE: 2/22/96

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SUMMARY AND CONCLUSIONS

The Lockheed Martin Energy Systems, Inc. (LMES), Independent Readiness Assessment (RA) for resumption of disassembly/assembly (D&A) activities was conducted January 15-26, 1996. That RA team determined that, prior to resuming Quality Organization (QO) activities associated with D&A, the QO activities in the areas of procedures, training, and Criticality Safety Approvals (CSA) should be reassessed by the RA team.

This reassessment was conducted by the three team members who previously looked at those areas and the team manager on February 19-20, 1996. The RA team used the Criteria and Review Approach Documents used during the original RA (OP-1, TQ-1, TQ-2, TQ-3, TQ-4, TQ-5) to assess these areas.

The team had the following prestart findings:

- RA-OP-1-6 Procedure Y50-55-DI-008 did not contain necessary CSA requirements.
- RA-OP-1-7 Revisions to CSAs required for resumption had not been made.

The team concluded that the areas of training and procedures were lacking in the formal controls necessary to support long-term operation. However, the team believes that adequate interim measures are in place to warrant continuation of resumption activities once prestart findings are resolved.

Specifically, the team believes that the following interim measures must remain in place until long-term corrective actions are implemented:

TRAINING

- The QO training manager position must continue to be filled by an individual with qualifications comparable to the individual (R. M. Mack) presently filling the position on an interim basis.
- QO management must periodically monitor activities to ensure the interim measures remain effective.

PROCEDURES

- The Document Management Center must continue to be staffed by an individual with qualifications comparable to the existing division procedure coordinator, A. F. Zerby.
- QO management must periodically monitor procedure control activities to ensure the interim measures remain effective.

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APPENDIX A

**Assessment Forms
(Form 1)**

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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.
2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Approach

Record Review:

1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.
2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.
3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.
4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Interviews:

None

Shift Performance:

1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.
3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.

Personnel contacted/position:

- A. K. Zava, Quality Organization (QO) manager
- J. P. Stanley, materials and equipment evaluation department manager
- K. F. Kesterson, materials testing laboratory supervisor
- R. P. Allen, mechanical/physical properties technician
- W. B. Johnson, mechanical/physical properties technician
- R. L. Jackson, LMES lead, document control
- A. F. Zerby, QO procedures coordinator
- J. R. Adcock, QA specialist (on loan to QO)
- B. L. Witt, physical testing alternate supervisor
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- J. A. Hummel, radiographer
- C. C. Blankenship, dimensional inspection supervisor
- D. E. Riggs, dimensional inspector
- C. A. Begley, inspection methods engineer
- M. E. Wagoner, mentor
- J. D. Brasfield, mentor
- S. L. Chapman, training and procedures manager

Records & other documents reviewed:

- Procedure Y50-55-PT-437, "Tensile Testing of Various Materials"
- CSA PT-MT-102, "Materials Testing Laboratory Operations"
- QO Standing Order 96-02, Rev. 0 and Rev. 1, "Control of Quality Procedures"
- Memo to File: February 13, 1996, DMC Standard Distribution Lists
- Procedure Y10-55-012, "Quality Organization Command Media Control System"
- Procedure Y50-55-PT-374, "Operation of 9MEV Linac 9204-2E"
- Radiography product procedure
- CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
- CSA PT-RAD-205, "Vibration Test"
- Procedure Y50-55-DI-008, "Operation of Optical Comparators in Manual Mode"
- CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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- CSA PT-PLT-100, "Fissile Material Loading Limits"
- CSA PT-PLT-400, "Contaminated Combustibles and Noncombustibles"
- CSA PT-ULTR-200, "Ultrasonic W-Testing and Fissile Storage Arrays"
- Awareness training handouts for Standing Order 96-02

Evolutions/operations witnessed:

- Tensile testing of stainless steel specimen
- Radiography of mockup
- Manual measurements using optical comparator

Discussion:

1. Two technicians were observed performing tensile testing of a stainless steel specimen on a Tinius Olsen 30K machine. The QO manager, group manager, and supervisor were present throughout the testing. Testing was conducted using a reader-worker method of performing Class III procedure Y-50-55-PT-437. No deficiencies were noted.
2. CSA PT-MT-102 was walked down. No deficiencies were noted. Revisions to CSAs DI-B2E-100, PT-PLT-100, PT-PLT-400, PT-RAD-200, PT-RAD-205, and PT-ULTR-200 were undergoing field verification (see RA-OP-1-7).
3. The team reviewed the above documentation and interviewed QO personnel regarding corrective actions for the procedure and document control system. Short-term corrective actions had been implemented to ensure that QO personnel had access to the latest versions of controlled documents. These actions included designating a document management center (DMC), maintaining properly identified controlled copies at the DMC, performing an audit against procedure Y10-189, "Document Control," and issuing a standing order to establish the control and issuance of procedures.
4. The procedure control process was verified with one supervisor following the tensile testing evolution. Controlled copies of the required procedures were maintained, and the supervisor was aware of requirements for working copies. In implementing this system, however, he was required to maintain controlled copies of many procedures he was not responsible for. Also, each supervisor had to obtain a current list of QO procedures each day from the procedures coordinator. This requirement was stipulated in an awareness training session but was not documented through command media.
5. The list of required procedures identified to the team on February 19 was supposed to include all procedures listed in the Plan-of-Action (POA). Three procedures on the list were not in the

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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POA (Y10-55-DI-029, Y50-55-PT-420, and Y50-55-PT-433), and one was in the POA and not on the list (Y50-55-PT-435). A letter has been drafted and will be signed by Mr. Gustavson removing procedure Y50-55-PT-435, "Dye Penetrant Testing," from the list of resumption procedures in the POA. The other three procedures are additions and are not a decrease in commitments.

6. A Surveillance Plan, dated February 14, 1996, stated that a QO internal division procedure (Y10-55-012) to incorporate changes in the document control process had been revised on February 13, 1996. QO personnel said this statement was not correct, the procedure was undergoing revision, and the surveillance plan statement would be corrected. In addition, quality management is evaluating the usefulness of procedure Y10-55-012 in light of other governing procedures.
7. The same Surveillance Plan stated that the scope included... "the extent to which the Quality Organization meets the requirements..." of procedure Y10-189, "Document Control." However, the plan only looked at procedures and not control of other documents such as CSAs and OSRs.
8. Short-, intermediate-, and long-term corrective actions were discussed with the manager of training and procedures. QO management intends to formalize the intermediate and long-term plans in a document that will be provided to the assessment team prior to the conclusion of this follow-up visit.
9. During observation of the use of the optical comparator, the supervisor used a controlled copy rather than a working copy of the applicable procedure, Y50-55-DI-008. This was permissible according to Rev. 0 of Standing Order 96-02; however, Rev. 1 of this standing order will only allow use of a working copy obtained from the DMC.
10. Two radiographers were observed performing radiography of a mockup using the 9MEV Linac. A third radiographer demonstrated reading and interpretation of radiographs taken recently on the same mockup during procedure verification. The alternate supervisor gave a thorough pre-job briefing and was present throughout the observation. The department manager and two mentors were present during radiography. Radiography was demonstrated in a disciplined and professional manner. CSA requirements were contained in the product procedure. No deficiencies were noted.
11. One dimensional inspector was observed performing manual measurements using an optical comparator. His supervisor gave the pre-job briefing and was present throughout the demonstration. The inspection methods engineer and two mentors were also present throughout the observation. Measurements were performed correctly, and necessary rigor was demonstrated. One deficiency was noted: procedure Y50-55-DI-008 did not contain applicable CSA

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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requirements, although the optical comparator can serve as a fissile work station (see RA-OP-1-6).

Conclusions:

CSAs and Procedure Use

1. The level of rigor and discipline in the activities observed was satisfactory to warrant resumption of operations within the Quality Organization. Pre-job briefings were thorough. Guidance and direction provided by supervisors and mentors were timely and correct.
2. Revised CSAs must be field verified, issued, and made effective, including training of personnel.

Procedure Control

1. The short-term corrective actions provide reasonable assurance that QO personnel will use the current, approved, and correct version of approved procedures. This conclusion is based on the following:
 - a. establishment of a Document Management Center (DMC) staffed by a division procedure coordinator
 - b. performance of a surveillance to identify non-compliances with procedure Y10-189
 - c. development of corrective actions based on that surveillance
 - d. issuance of a standing order to establish control of the issuance of procedures and procedure revisions
 - e. performance of training of QO personnel on the contents of the standing order
 - f. observations of evolutions and interviews of QO personnel
2. Intermediate and long-term corrective actions are necessary to provide confidence that the document control system will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:
 - a. assurance that the position of division procedure coordinator will remain filled by a comparably qualified person


FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: 2/21/96
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- b. development and implementation of a corrective action program that will focus on full compliance with procedure Y10-189
- c. dedication of additional resources as deemed necessary
- d. periodic monitoring by QO management to ensure the short-term corrective actions remain effective

The long-term corrective actions should include participation in the development of a site-wide document control system that meets the needs of resumed facilities.

Inspected by: H. A. Oliver III B. A. Wilson	Approved by:  Date: 2/22/96 RA Team Manager
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96
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Method of Appraisal (short narrative description):

Objective

CO-13 Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM).
2. Compliance with the TIM schedule is current.
3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.

Approach

Records Review:

1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.
2. Review training and qualification records to verify compliance with the TIM schedule.
3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.
4. Review records to determine the following:
 - a. Content of training programs is determined by systematic analysis.
 - b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.
 - c. Division training staff qualification requirements have been met.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96
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- d. Verification of qualification requirements leading to certification has been conducted.
- e. A graded approach is used to establish program content.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- S. L. Chapman, QO training manager
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- QA/QO personnel needed to perform D&A operations, 10/27/95
- Proposed QO training manager rolls and responsibilities, 2/7/96
- Training program execution, 2/1/96
- Quality training team evaluation, 2/8/96
- Quality Training Development and Administration Guide (TDAG) (proposed revision), 2/8/96
- Y-12 Non-Reactor Nuclear Facility Quality Organization Training Plan (Rev. 1), October 31, 1995
- Training Development and Administration Guide (TDAG) for Y-12 Quality Organization - Disassembly and Assembly Resumption Training Criteria, Rev. 2, February 1996
- Letter, February 7, 1996, Frank Denny, recommendations to address Y-12 Quality Organization training program deficiencies (w/enclosures)

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96
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- Letter, February 5, 1996, S. L. Chapman, R. O. McClosky, R. J. Graham, report of QO D&A training and qualification records review
- Quality Organization standing order number 96-03, Rev. 0, "Administration of Examinations"
- Quality Organization standing order 96-01, Rev. 0, "Qualification Proficiency Requirements"

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. Ralph Mack, RA recovery team leader, and B. H. Poole, RA recovery team member, were interviewed. Both have a good understanding of the qualification/certification process.
2. The Quality Organization revised training program was developed and implemented by the recovery team.
3. The Training Development and Administrative Guide (TDAG) for the Y-12 Quality Organization met the immediate need of the organization, but it did not specifically describe how the organization implemented training requirements.

For example, the TDAG referred to the "Y-12 Plant Y90 series" for program development. The Y90 series did not specifically indicate who in QO had authority to direct and approve program development. The TDAG also indicated that the QO training program was based on needs analysis, job analysis, and task analysis, but did not specify when or why each type of analysis was used. It referred to Y90-40, "Conduct of Training Analysis," for methods and criteria. Y90-40 listed many types of analyses and did not specifically state the ones used to develop the QO program.

The TDAG discussed continuing training, but did not address examination requirements, drill requirements, and exemption requirements.

The RA recovery team is adequately qualified to administer the training program and to compensate for the weakness in the command media.

Conclusions:

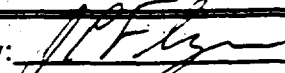
1. The short-term corrective actions provide reasonable assurance that the Quality Organization (QO) Training Program will be compliant with applicable training requirements. This conclusion is based on the following:

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: 2/21/96
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- a. assignment of an interim training manager, in that the TQ-RA recovery team leader is functioning as the QO training manager
 - b. development of the Quality Training, Development and Administration Guide (TDAG), Rev. 2, February 1996
 - c. issuance of Quality Organization Standing Order 96-01 "Qualification Proficiency Requirements" and Quality Organization Standing Order 96-03 "Administration of Examinations"
 - d. performance of a surveillance to identify programmatic and record deficiencies
 - e. development of corrective actions based on that surveillance
 - f. interviews with TQ-RA recovery team personnel
2. Intermediate and long-term corrective actions are necessary to provide confidence that the QO Training Program will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:
- a. assurance that position of QO training manager will remain filled by a comparably qualified person
 - b. development and implementation of a corrective action program that will focus on full compliance with applicable training requirements
 - c. dedication of additional resources as deemed necessary
 - d. periodic monitoring by QO management to ensure the short- and long-term corrective actions remain in effect

Inspected by: N. T. Ford	Approved by:  RA Team Manager
	Date: 2/22/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TC)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96
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Method of Appraisal (short narrative description):

Objective

CO-14 Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)
2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)
3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.
4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)
2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.
3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.
4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96
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Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- QA/QO personnel needed to perform D&A operations, 10/27/95
- Proposed QO training manager rolls and responsibilities, 2/7/96
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- Quality Organization standing order 96-01, Rev. 0, "Qualification Proficiency Requirements"

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96
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Evolution:/operations witnessed:

- See OP-1

Discussion:

1. The Quality Organization standing orders on examination requirements and proficiency requirements were reviewed. Both orders were found to be adequate. However, the standing order on examination administration requirements lacked detail. Specifically, the standing order stated that if an incumbent demonstrated a weakness in a particular area of a comprehensive examination, the incumbent should be remediated. The standing order did not give guidance on when it was appropriate to remediate using a written examination or simply conduct a one-on-one discussion.
2. The standing orders should eventually be incorporated into the TDAG. QO plans to revise the TDAG in the near future. This revision should concentrate on expanding the program element discussions to include more detail on specifically how the organization implements the requirements.

Conclusions:


1. The short-term corrective actions provide reasonable assurance that the Quality Organization (QO) Training Program will be compliant with applicable training requirements. This conclusion is based on the following:
 - a. assignment of an interim training manager, in that the TQ-RA recovery team leader is functioning as the QO training manager
 - b. development of the Quality Training, Development and Administration Guide (TDAG), Rev. 2, February 1996
 - c. issuance of Quality Organization Standing Order 96-01 "Qualification Proficiency Requirements" and Quality Organization Standing Order 96-03 "Administration of Examinations"
 - d. performance of a surveillance to identify programmatic and record deficiencies
 - e. development of corrective actions based on that surveillance
 - f. interviews with TQ-RA recovery team personnel

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: 2/21/96
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2. Intermediate and long-term corrective actions are necessary to provide confidence that the QO Training Program will continue to function as required and improve. The intermediate corrective actions should include the following as a minimum:
- a. assurance that position of QO training manager will remain filled by a comparably qualified person
 - b. development and implementation of a corrective action program that will focus on full compliance with applicable training requirements
 - c. dedication of additional resources as deemed necessary
 - d. periodic monitoring by QO management to ensure the short- and long-term corrective actions remain in effect

Inspected by: N. T. Ford	Approved by:  RA Team Manager
	Date: 2/22/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96
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Method of Appraisal (short narrative description):

Objective

CO-16 Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.
2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.
3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96
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Records & other documents reviewed:

- Letter, February 14, 1996, D&A file, summary of the programmatic requirements of the Y-12 Quality Organization personnel supporting Disassembly and Assembly activities
- Training Development and Administrative Guide (TDAG) for Y-12 Quality Organization - Disassembly and Assembly Resumption Training Criteria, Revision 2, February 1996
- QA/QO personnel need to perform D&A operations, 10/27/95

Evolutions/operations witnessed:

- See OP-1

Discussion:

1. The TDAG (Rev. 2) and a list of QA/QO personnel needed to perform D&A operations were reviewed. These documents indicated that line management had designated in writing personnel needed to perform specified tasks.
2. Personnel listed as supporting three typical evolutions were checked for training to the required procedures. These procedures and associated training module numbers were Y50-55-PT-457 (Tensile), module 14003; Y50-55-PT-374 (Radiograph), module 14765; Y50-55-01-023 (Mauser), program 6243. All personnel checked were current in their specific training.
3. The status of continuing training program was checked. Fixed and flexible training components (training modules) had been identified. However, not all of the planned programmatic elements of the program were complete. The TDAG did not give specific guidance on how the continuing training program was implemented. Specifically, guidance on continuing training examination requirements, drills, and exemption requirements was not addressed in the TDAG.


FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: 2/21/96
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Conclusion:

Because of the weakness of the TDAG, the continuing training program has not been fully established in the Quality Organization. Additional detailed guidance on program implementation is needed before the QO continuing training program can become functional and compliant with applicable training requirements. The closure criteria for the LMES RA-TQ-3-2 continuing training program (poststart finding) have not been completed.

Inspected by: N. T. Ford	Approved by:  Date: 2/22/96 RA Team Manager
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: 2/21/96
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Method of Appraisal (short narrative description):

Objective

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

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

1. Review documentation to ensure examination requirements for qualification/certification have been met.
2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.
3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.

Interviews:

1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.
2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: 2/21/96
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2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member
- M. A. Childs, training consultant
- J. L. Mincy, corrective actions

Records & other documents reviewed:

- Five QO personnel training records

Evolutions/operations witnessed:


- See OP-1

Discussion:

1. Selected examinations of various operations personnel were reviewed. The level of knowledge of these personnel based on this review was adequate.
2. Interviews were conducted with TQ-RA recovery team members. All had an adequate understanding of the qualification/certification process. Personnel interviewed demonstrated exceptional knowledge of training fundamentals. In addition, the staff was experienced in nuclear facility training program implementation.

Conclusion:

The level of knowledge of operations personnel was evaluated during the LMES RA and found to be adequate. The level of knowledge of the RA recovery team was found to be adequate.

Inspected by: N. T. Ford	Approved by:  RA Team Manager
	Date: 2/22/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: 2/21/96
-----------------------------------	-----------------------------------	---------------

Method of Appraisal (short narrative description):

Objective

CO-18 There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

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

Personnel contacted/position:

- R. M. Mack, TQ-RA recovery team leader
- B. H. Poole, TQ-RA recovery team member

Records & other documents reviewed:

- QA/QO personnel needed to perform D&A operations, 10/27/95
- Five QO personnel training records

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: 2/21/96
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Evolutions/operations witnessed:


- See OP-1

Discussion:

Staffing requirements documents and qualification records and reports were reviewed. No significant deficiencies were noted during the review. Additionally, there had been no significant changes that affected personnel requirements since the last LMES RA.

Conclusion:

The numbers and qualifications of personnel are adequate to support operations.

Inspected by: N. T. Ford	Approved by:  RA Team Manager
	Date: 2/22/96

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APPENDIX B

**Deficiency Forms
(Form 2)**

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Memorandum

Date: February 7, 1996

To: F. P. Gustavson

From: *JPF* J. P. Flynn, 701 SCA, MS-8241, 6-4614

Subject: **Readiness Assessment Report for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant**

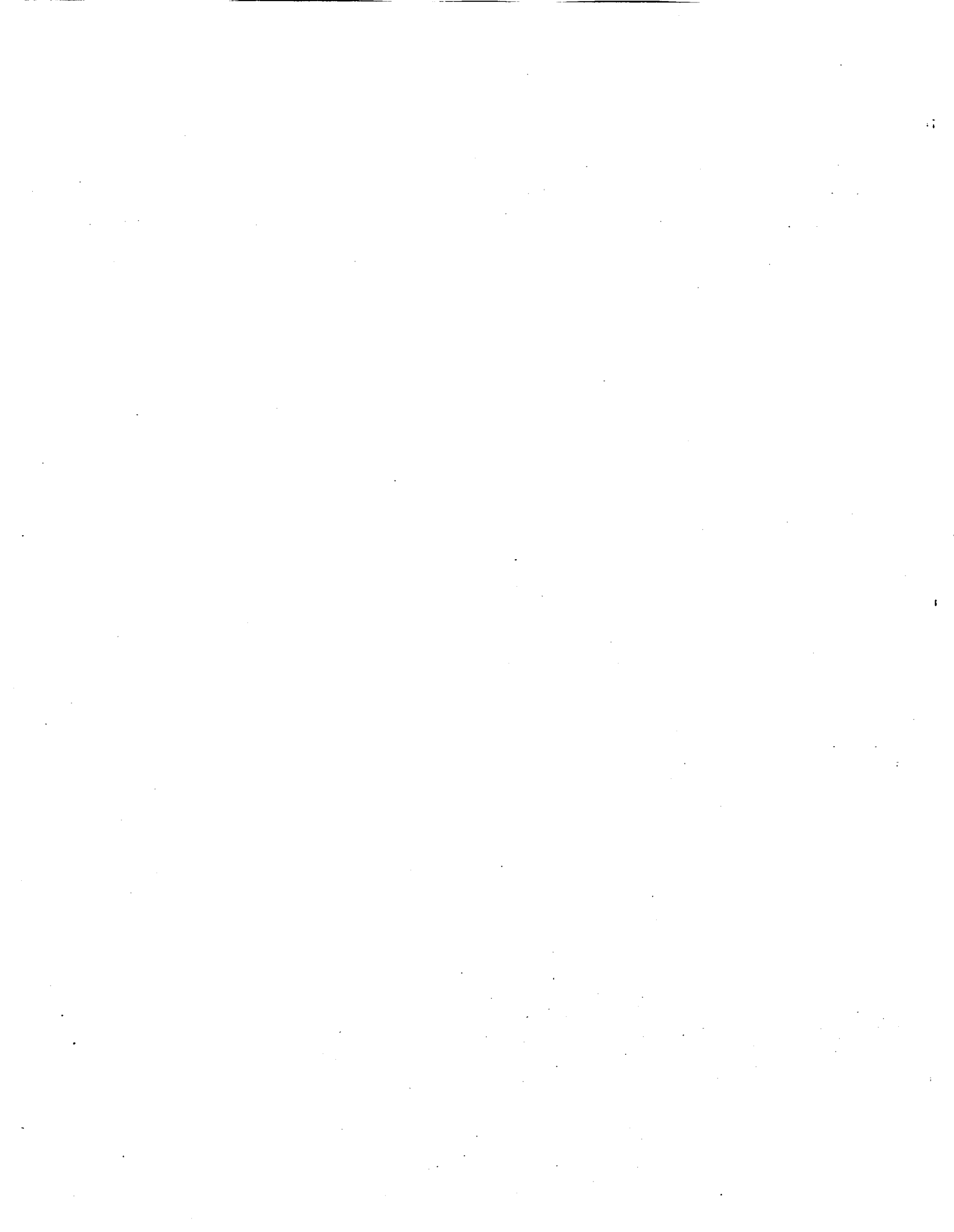
In accordance with R. K. Roosa's memo of January 12, 1996, a readiness assessment (RA) was conducted for Disassembly/Assembly Activities. Fifteen copies of the report are attached for your distribution.

Due to the fact that the RA team determined that the Quality Organization (QO) was not prepared to resume operations, this should not be considered a final report. Once we have reassessed QO, an addendum to the report will be issued.

Once the concerns identified in QO have been adequately resolved, we will bring the appropriate RA team members back to reassess QO in the areas of procedures, Criticality Safety Approvals, and training/certification. This assessment will be based upon Sections OP-1, TQ-1, TQ-2, TQ-3, TQ-4, and TQ-5 (except drills) of Appendix A of the attached report.

JPF:lhs

Attachment



Y-12

OAK RIDGE Y-12 PLANT

LOCKHEED MARTIN



Lockheed Martin Energy Systems, Inc.
Readiness Assessment Report
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant

January 15-26, 1996

This document has been reviewed by the Y-12
Classification Office, and has been determined to
be

UNCLASSIFIED

This review does not constitute clearance for
Public Release.

Date 2/7/96 *m/fcl*

MANAGED BY
LOCKHEED MARTIN ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY


Y/OA-6249

**Lockheed Martin Energy Systems, Inc.
Readiness Assessment Report
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant**


January 15-26, 1996

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I, by signature here, acknowledge that I concur with the findings and conclusions of this report.



N. T. Ford
Training/Qualification



J. J. Hummer
Management



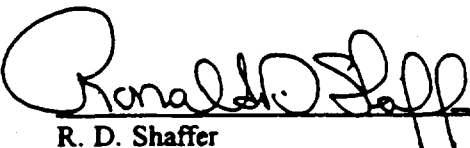
for J. E. Lee
Operations/Procedures



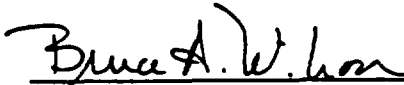
R. K. McConathy
Training/Qualification



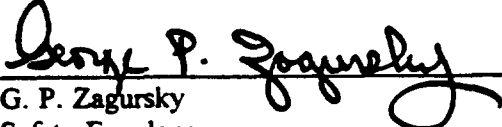
H. A. Oliver III
Operations/Procedures/Safety Envelope



R. D. Shaffer
Management



B. A. Wilson
Operations/Procedures



G. P. Zagursky
Safety Envelope

APPROVED: 

J. P. Flynn, RA Team Manager

DATE: 2/7/96



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EXECUTIVE SUMMARY

The Lockheed Martin Energy Systems, Inc. (LMES), Independent Readiness Assessment (RA) is one of the activities to be completed prior to resuming disassembly/assembly (D&A) activities at the Department of Energy (DOE) Y-12 Site. The results of this RA will be used to determine whether the core objectives as described in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," have been adequately met.

Operations at the Y-12 Plant were shut down in September 1994 as a result of operational deficiencies noted by the Defense Nuclear Facilities Safety Board (DNFSB) staff during routine activities. LMES initiated a Type "C" Investigation to determine the full significance of the deficiencies observed. The investigation revealed that several improvements were necessary to resume operations in a disciplined manner. The resulting extended shutdown led to the completion of this RA in accordance with DOE Order 5480.31, "Startup and Restart of Nuclear Facilities," and DOE Standard 3006-93, "Planning and Conduct of Operational Readiness Reviews (ORR)."

The RA was conducted January 15-26, 1996. The RA was a systematic inquiry into the ability of the Y-12 Plant staff to conduct D&A activities in a safe and disciplined manner. The scope of the RA was determined by the core objectives identified and approved in the POA. Although many core objectives were assessed, the focus of this RA was on management, personnel qualification, training, procedures, safety culture, and administrative support systems.

While the scope of the POA addressed many activities, including assembly, disassembly, and materials testing laboratory operations, the RA team recommends only resumption of operations associated with C5 disassembly and operation of the electron beam welders. Subsequent startup of additional processes within the D&A facility must be evaluated by LMES in accordance with approved procedures.

The numerous issues associated with the Quality Organization (QO) in the areas of training and certification programs, procedures, and Criticality Safety Approvals indicate that the organization is not at an adequate level to support the full scope identified in the POA. Prior to resuming QO activities, the QO activities should be reassessed by the LMES RA team.

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I. INTRODUCTION

A. General

During a review of Building 9204-2E containerized storage operations and applicable Criticality Safety Approvals (CSA) on September 22, 1994, violations of administrative safety controls associated with material storage arrays were observed. Operations personnel, upon discovery of the criticality safety violation, did not immediately administratively control the area (i.e., ensuring that personnel were kept at a safe distance away from the array). They also did not immediately notify Nuclear Criticality Safety Department (NCSD) personnel or the plant shift superintendent. This was a violation of LMES and Y-12 Plant training and procedures. Following the event, all CSAs 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 CSA walkdowns, the occurrence report covering the initial infraction, the Type "C" Investigation, and DNFSB Recommendation 94-4 indicated the basic cause was a lack of rigor in conduct of operations that permitted less than strict compliance with procedures. Within the umbrella of conduct of operations, the principal failure was personnel not following procedures with the rigor required. A contributing factor was the lack of training on CSAs in particular. CSAs were not always clearly written, and their limitations were not well understood by some personnel.

DOE Assistant Secretary for Defense Programs memorandum of November 8, 1994, *Resumption of Y-12 Operations*, to the Oak Ridge Operations Office has stipulated that the RA is the appropriate format to ascertain readiness for restart. The Assistant Secretary for Defense Programs (DP-1) has stated his concurrence that the manager, Oak Ridge operations office (ORO), will be the restart authority in this same memorandum.

B. Y-12 Plant

The Y-12 Plant is one of two installations in Oak Ridge, Tennessee, managed by LMES for DOE. LMES also manages the Oak Ridge K-25 Site. For four decades the Oak Ridge Y-12 Plant has been the national center for the handling, processing, storage, and disassembly of all DOE-controlled enriched uranium (EU) materials and components as well as depleted uranium (DU) and other special materials components.

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

Resumption activities for the Y-12 Plant are divided into mission areas that are defined by programmatic mission descriptions and needs. The RA Implementation Plan (Appendix A) addresses the scope of the resumption of D&A activities, which is one of the mission areas for the Y-12 Plant.

C. Disassembly Activities

Disassembly activities in Building 9204-2E are presently limited to manual techniques and a single-lathe operation. These activities were in progress prior to the September 22, 1994 stand down. Disassembly begins with receipt of the unit from the storage area (storage activities were assessed for readiness as part of the Y/OA-6233, "Martin Marietta Energy Systems, Inc., Readiness Assessment Plan of Action for the Receipt, Storage, and Shipment of Special Nuclear Materials at the Oak Ridge Y-12 Plant." Upon receipt of the units on the second floor of Building 9204-2E, they are transferred by forklift truck to the "tear-down" area. The "tear-down" area is a portion of the Material Access Area (MAA) on the second floor. The unit is then removed from its container and placed on a disassembly work table using an overhead crane and program-specific lifting device. The disassembly work table is then positioned in a recirculating walk-in hood. Disassembly of the unit is then performed using manual hand tools (hammers, chisels, pry bars) and pneumatic devices (chipping hammers, chisels, wrenches). A small Hardinge lathe is used for disassembly activities outside the walk-in hood. As the parts are removed, they are identified, verified, weighed, and segregated for further disassembly operations or transferred out of the area. Segregated parts are then transferred to the materials management area for final disposition to recovery processing areas (recovery processing will not be included in the scope of the RA).

D. Assembly Activities

Assembly activities in Building 9204-2E include all aspects of assembly processing, from component precleaning to packaging. All assembly processes were approved for operation prior to the September 22, 1994, stand down, although specific programmatic operations may not have been ongoing at that time.

Assembly processing begins with receipt of the components from the storage area. Upon receipt of the components, they are transferred to the "cleaning" area. Prior to beginning cleaning operations, all components are verified for certification and material identification. Cleaning operations are performed by hand-wiping components with solvent. Additional surface preparation may be completed by electropolishing components in a charged solution or power brushing with a stainless steel brush. Cleaned components are wrapped in Kraft paper for protection and placed back in their respective containers for movement to the second floor assembly area.

Examples of other pretreatment activities include containerizing and baking of components, adhesive coating, and electrical testing. After component cleaning or pretreatment, the components are moved to the assembly work station required for the next operation. These work stations and work areas include environmentally enhanced rooms; assembly stands; surface plates; electron-beam, laser, gas tungsten arc, gas metal arc, and spot welders; bond stands, vacuum furnaces, machining stations, lathes, and leak-test stations. The assembly process may require several assembly steps with repeated use of some of the work stations or work areas. Interfaces with QO personnel may also occur several times during the assembly process to facilitate verification of product acceptance criteria. These interfaces may be with radiography, dye penetrant, ultrasonics, or dimensional inspection personnel as required by the specific process or program. Upon completion of assembly operations, the component is packaged in a container approved for off-site shipment.

E. Material Testing Laboratory

Materials testing operations under this resumption plan are limited to Room 311 in Building 9204-2E. Materials testing begins with the receipt of small samples of metallographic or mechanical properties evaluation.

Upon receipt of metallography samples, they are mounted in epoxy molds and, after hardening, are ground and polished to a flat, smooth surface. Samples are then moved to photographic stations for microscopic evaluation and photographic documentation. Additional steps to etch or anodize the surface using nitric acid and ammonium hydroxide, respectively, may be required prior to photographing.

Upon receipt of mechanical properties test samples, they are tested on standard industrial-type mechanical test equipment, usually to failure, to produce the required mechanical properties data.

F. Readiness Assessment Process

The RA was conducted to determine whether D&A activities were ready to resume the activities that were shut down as a result of events on September 22, 1994.

An Implementation Plan (Appendix A) was prepared to comply with the requirements of DOE Order 5480.31 and DOE-STD-3006-93. The scope of the RA is described in the POA, Y/OA-6238, which was prepared by Y-12 Plant line management and approved by the ORO manager.

The Implementation Plan contains the overall assessment procedure and its appendices, including the Criteria and Review Approach Documents (CRAD) that define the review objectives and criteria as well as the approach for assessing each objective.

Results of the assessment are provided in this report. Deficiencies are classified as prestart findings, which must be closed prior to resumption of operations; poststart findings, which should have approved corrective action plans and milestones in place prior to resumption; or observations, which may be used by management to support continuous performance improvement.

The RA team consisted of three LMES employees, one Lockheed Martin Corporation employee, two Lockheed Martin Energy Research Corporation employees, and three technical consultants.

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II. READINESS ASSESSMENT EVALUATION

A. Management (MG)

The management area was assessed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," (POA) and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to validate that management systems required to support resumption of D&A activities were in place, or adequate formal compensatory measures had been instituted to address identified deficiencies. These compensatory measures had to identify the required interim actions, a schedule for gaining compliance, and qualitative and/or quantitative measures to determine when adequate compliance is achieved.

The review approach included document reviews, interviews, observation of specific work activities, and facility walkdowns. This review took into account the results of the LMES Management Self Assessment (MSA) and the Y-12 Site Office Restart Team (YSORT) findings. The specific organizational levels applicable to this review were identified in the POA and included the floor level technicians and supervisors in QO and D&A up to and including the manager, nuclear operations. The results of the management review were documented daily on the Assessment Forms (Form 1) included in Appendix B. Specific deficiencies were documented on the Deficiency Forms (Form 2) contained in Appendix C.

The management review assessed the position descriptions, evidence files, and the performance appraisal process to determine if managerial qualifications of LMES personnel responsible for facility operations were adequate. The documentation in official records demonstrates that the incumbent managers identified in the POA meet the education, experience, technical, and medical standards.

The functions, assignments, responsibilities, and reporting relationships of the line management were evaluated based on overall definition, understanding, and implementation. The areas of emphasis included D&A and QO as identified in the POA. The mentor program was also reviewed to ensure that qualifications, functions, assignments, responsibilities, reporting relationships, and experience, as well as a strategy for removal of mentors, were adequate. The review of evidence and interviews with personnel identified in the POA as being required to support D&A operations indicated that the reporting relationships below the department manager were not clear. The QO does not have responsibilities, accountabilities, and authorities identified for specific positions within the organization (see RA-MG-2-2). Additionally, the conditions under which mentors may be removed have not been defined and documented. The current and draft Y-12 Plant mentor program descriptions do not contain measurable criteria for determining when mentors established as compensatory measures associated with disassembly operations can be removed. This is not an issue of safety and does not affect the resumption of operations (see RA-MG-2-1). The last area where a deficiency was noted pertained to the qualification of mentors needed to support Strategy III disassembly activities. Strategy III mentors have been established as compensatory measures for requests for approvals (RFA) associated with DOE Order 5480.19. To address this, D&A has prepared a list of procedures that require a mentor to be present when the procedures are performed. Currently, there are no respirator qualified

mentors available to support disassembly activities associated with the walk-in hood and, as such, the Strategy III required compensatory measures cannot be met (see RA-MG-2-3).

A review was conducted of the system in place to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and internal LMES organizations. The program evaluation centered on the Energy Systems Action Management System (ESAMS). Some minor deficiencies were noted with items being tracked outside of ESAMS and items being closed when corrective actions were not 100 percent complete (see RA-MG-3-1).

The 17 nonconformances associated with DOE orders applicable to D&A were reviewed to determine that approved schedules existed, required actions described had been adequately addressed at all levels, and operations management had reviewed and verified that compensatory measures or corrective actions were in place. Some of the random sample of requests for approval had not received DOE-ORO approval (see RA-MG-4-1).

The program to promote a site-wide safety culture at the Y-12 Plant was reviewed as it related to D&A and QO operations. Awareness training session records, occurrence reports, and the employee concerns program were assessed to determine timeliness and effectiveness of actions. The team interviewed all levels of the line organizations associated with D&A activities to determine their level of understanding of the safety message communicated during the awareness sessions conducted following the September 22, 1994, incident. During these interviews, personnel indicated they had a basic understanding of the safety message; however, the recall of precipitating events was limited (see RA-MG-5-1).

The overall conclusion in the management area is that, after resolution of the prestart findings, adequate rigor and programmatic controls are in place to resume operations associated with C5 disassembly as long as mentors are in place.

The deficiencies identified in the management area are as follows:

RA-MG-2-1	Finding	Mentor program removal criteria are not measurable or verifiable. (Poststart)
RA-MG-2-2	Finding	A clear understanding of reporting relationships and authorities has not been communicated below the department manager level. (Prestart)
RA-MG-2-3	Finding	Mentors assigned as Strategy III are not respirator qualified to support walk-in hood activities. (Prestart)
RA-MG-3-1	Observation	There is insufficient documentation to support closure of ESAMS items.
RA-MG-4-1	Finding	RFAs generated for DOE orders related to D&A activities have not all been approved by DOE-ORO. (Prestart)

- RA-MG-5-1 Observation Personnel do not recall the events that precipitated the September 1994, incident as they related to the management safety awareness message.
- RA-MG-5-2 Observation Corrective actions associated with reportable occurrences as required by DOE Order 5000.3B, "Occurrence Reporting," are not timely.

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

- YSORT 3004.01 Prestart and poststart findings and observations generated from the DOE and LMES assessments of RSS and depleted uranium operations (DUO) are not evaluated to determine their impact or significance towards D&A to ensure that the deficiencies are corrected or nonexistent within D&A.
- YSORT 3004.02 The evidence files do not contain findings or deficiencies that were generated after May 2, 1995 to show their review by the Issues Management Prioritization Review Board in terms of their D&A applicability and their restart significance.
- YSORT 3004.03 The conclusion that poststart RSS findings are poststart for D&A is not supported by conclusive evidence, and no indication is provided to show the process that was performed to provide this conclusion especially for deficiencies from RSS and DUO.
- YSORT 3027.01 LMES does not meet resubmittal schedules for RFAs that are rejected by DOE.
- YSORT 3028.01 Evidence indicating all compensatory measures applicable to D&A are effectively implemented is not available.
- YSORT 3056.01 There is an operator aid program deficiency associated with radiological requirements for exiting the MAA in Building 9204-2E.
- YSORT 6081.01 Radiologically controlled areas are established by unqualified personnel.

B. Operations (OP)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." Each organization identified in the POA as necessary to support D&A activities was assessed to determine whether:

1. The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," was adequate for resumption of operations. The scope of the assessment was limited to the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

2. Personnel exhibited an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrated a high-priority commitment to comply with these requirements.
3. A routine operations drill program, including program records, had been established and implemented.
4. An adequate-restart test program had been developed that included adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators.

The review approach included document reviews, interviews, and observation of evolutions and drills. Emphasis was placed on observation of actual evolutions. Because of the status of the facility, C5 disassembly was performed on a mockup. Because no actual safety-significant system surveillances were scheduled during the assessment, the team requested and the facility performed surveillances on portions of the fire cycle system and criticality accident alarm system (CAAS). D&A and QO were assessed against the nine chapters of DOE Order 5480.19 listed above. Operator rounds were observed, required reading and narrative logs were reviewed, and control of operator aids was assessed. Evolutions were observed in both D&A and QO. The results of the operations review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The manager, nuclear operations stated that the Nuclear Operations Conduct of Operations Manual was the guidance document to be used for performing operations in D&A. Workers at every level were to use the manual if they had an operational question. The Conduct of Operations Manual was written to apply to day shift operations, with the caveat that a second shift could be

established during periods of high demand. The Conduct of Operations Manual was present in D&A resumption areas, and organizational managers were aware of its contents. Compliance with conduct of operations requirements with regard to procedure quality and use, including CSAs, was at a lower level within the QO than in other D&A resumption areas.

During evolutions observed, supervisors and workers were knowledgeable and followed procedures. Supervisors' thorough pre-job briefs and effective direction during performance of evolutions were key elements in the successful completion of all evolutions requested by the assessment team. These evolutions were performed in a timely and professional manner. Generally, when problems occurred, either during the pre-job brief or the evolution itself, work was stopped until the situation had been corrected. The one exception involved fire protection personnel deviating from a quarterly fire cycle surveillance test to perform the test for the RA team (see RA-SE-1-3). Although the surveillance test was "modified" for demonstration purposes, management should have recognized the inability to perform the procedure as written and taken appropriate action.

As required, mentors were present during significant evolutions and were available throughout the assessment. Without exception, their advice and guidance were timely and correct. With appropriate supervisory and mentor involvement, operations were conducted with rigor and discipline.

Although some deficiencies in radiological controls practices were observed, the assessment concluded that awareness of and compliance with safety, health, and environmental protection requirements (including radiological controls) are satisfactory.

The team observed two drills, interviewed drill program managers and monitors, and reviewed program procedures and evidence files. At the time of this assessment, eight drill scenarios had been developed. The two drills observed by the team included a CSA violation and fire system inoperability. Pre-drill briefings, conduct of the drills, and post-drill critiques were performed according to procedure requirements, and the participants correctly performed required actions. Deficiencies observed by the RA team were usually noted by operations personnel during the critique. Overall problems with the drill program were also identified during the MSA and by YSORT, therefore no findings were issued.

The drill program is in its initial stages and should improve with time and experience. Management attention is needed to effect the necessary improvements and to emphasize its importance. Deficiencies noted during this assessment, the Management Self-Assessment (MSA), and YSORT activities should be factored into program improvements.

The team assessed the restart test program, including means to ensure that all equipment identified for restart is operable and that equipment not considered for restart is tagged out of service. In addition, the team reviewed maintenance records, including preventive and corrective maintenance, calibrations, and surveillances. The fact that a formal restart test program has not been developed was previously identified by the MSA and YSORT. This assessment focused on equipment operability and identification of nonrestart equipment.

The operability of all equipment necessary to support D&A resumption has not been adequately demonstrated. Corrective maintenance is required on numerous pieces of equipment and systems

to achieve operability. The Kathabar system is necessary to maintain strict temperature and humidity conditions in the MAA, yet is not included on the restart equipment list. The system is operable, but it has numerous outstanding maintenance job requests (MJR). In addition, not all equipment has been tagged out of service if not required for restart, as required by CO-28 in the POA (see RA-OP-5-1).

The overall conclusion in the operations area is that, after resolution of the prestart findings, adequate rigor and controls are in place to resume operations associated with C5 disassembly. The deficiency identified in the operations area is as follows:

RA-OP-5-1 Finding The operability of all equipment necessary to support restart has not been adequately demonstrated. (Prestart)

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

YSORT 3011.01 Crane mounted vacuum pumps do not maintain required vacuum to ensure safety during list operations.

YSORT 3022.01 The drill program has not been effectively implemented.

C. Procedures

The assessment in the area of procedures was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant. The assessment was conducted to ensure there were adequate and correct procedures for operating systems and utility systems associated with D&A resumption activities. This review included the procedure development, revision, and use processes, as well as the document control program for procedures and CSAs.

The review approach included document reviews, interviews, and observation of evolutions and drills. The results of the procedures review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

Four different organizations are responsible for the procedures reviewed during this assessment; D&A, QO, the Y-12 Plant, and Product Engineering. These organizations are required to follow plant level procedures Y10-102, "Technical Procedure Process Control," and Y10-189, "Document Control," for procedures affecting D&A resumption. Plant procedure Y10-102 is the governing document for developing, modifying, revising, approving, and canceling technical procedures, whereas procedure Y10-189 specifies the procedure control process. Implementation of other governing documents such as procedures 60-WP-023, "Product Procedure," and Y10-135, "Command Media Development at the Y-12 Plant," was not reviewed as part of this assessment.

Deficiencies were identified with the implementation of both procedures Y10-102 and Y10-189. DSO was generally found to be in programmatic compliance with these procedures, and deficiencies were indicative of problems associated with continually changing requirements and

evolving cultural changes. Personnel were knowledgeable of program requirements and had records to support the revision and control process. Some problems were identified during evolutions, such as non-documented pen and ink changes to working copies, working copies not returned or verified within the appropriate period, and confusion resulting from two different procedure modification dates. These types of problems were previously identified during the MSA and by the YSORT, and therefore are not documented as findings by this team. One finding involved failure to meet a POA prerequisite, in that all procedures identified in the POA have not yet been revised, corrected, validated, and distributed (see RA-OP-1-1).

Deficiencies in QO procedures were more programmatic in nature. Interviews with QO personnel and observations revealed that a procedure control system, as required by procedure Y10-189, was not in place (see RA-OP-1-5). The operations procedure coordinator had distribution lists of manuals and receipt acknowledgments of transmitted procedures, but uniquely identified, stamped controlled copies of procedures were not maintained and the status of latest revisions to controlled copies could not be ascertained. Two QO CSAs contained vague, nonspecific wording that permitted operator latitude in interpreting requirements (see RA-OP-1-3).

The method for verifying the current revision of procedures differed for each organization. D&A verified the revision number through the computer database, VTX. Product procedures were verified through a secret database system with limited access. QO must verify the current procedure revision numbers verbally through the operations procedure coordinator.

Product procedures determined to be technical procedures by procedure 60-WP-023 are subject to the requirements of procedure Y10-102. Only one of the four product procedures required for restart was reviewed during this assessment (see RA-OP-1-1). The revisions to this procedure were made according to procedure Y10-102, and transmitted to the field using product engineering transmittals. Although this caused some confusion during the pre-brief for an evolution, the system did eventually work. However, immediate intent and non-intent changes cannot follow procedure Y10-102 because of the requirement for the product engineer to coordinate all changes with the cognizant design agency. This was not identified as a finding because only one procedure was available for review, and no examples of problems were encountered.

Plant procedures were not reviewed in detail as part of this RA. However, a CAAS surveillance procedure did not include applicable Operational Safety Requirements (OSR) (see RA-OP-1-4). Deficiencies with the control and distribution of plant procedures similar to those that had been identified during the MSA and by YSORT were found during this assessment.

In summary, numerous problems were identified in the control and revision of procedures, including incorporation of CSA limits and OSR requirements. The procedure system is fragmented and in a continual state of change. The governing procedure, Y10-102, had five change directives as of May 1995, was extensively revised in September 1995, and was undergoing a major revision during this assessment, only four months later. The document control program, procedure Y10-189, generally provides adequate guidance for control of procedures. However, not all of the organizations supporting D&A resumption were complying with the requirements of this procedure. This assessment reviewed the procedure programs associated with D&A and QO, and to a lesser extent, plant and product engineering. The problems identified in D&A were not programmatic, and the corrective actions for the prestart findings should resolve

the deficiencies. The other organizations should consider more extensive corrective actions to achieve programmatic compliance and consistency with all affected site organizations.

The deficiencies identified in the procedures area are as follows;

- | | | |
|-----------|---------|--|
| RA-OP-1-1 | Finding | Nineteen procedures in the POA had not been revised to meet requirements. (Prestart) |
| RA-OP-1-4 | Finding | The CAAS surveillance procedure did not contain the applicable OSR requirements. (Prestart) |
| RA-OP-1-5 | Finding | The control and issuance of procedures and procedure revisions by the QO are not in accordance with procedure Y10-189 requirements. (Prestart) |

The following deficiencies were identified by the RA team. However, YSORT findings had been previously written on these issues, and the RA team did not write duplicate findings:

- | | |
|---------------|--|
| YSORT 3026.01 | Method of controlling procedures for use in B2E has not been effective. |
| YSORT 3026.02 | B2E is not using working copies of procedures as described in procedure Y10-189. |
| YSORT 3026.03 | The plant procedures group is not marking distributed procedures as controlled copy. |
| YSORT 3026.04 | The reading room in B2E should be treated as a document management center. |
| YSORT 3031.01 | DSO procedures required for D&A activities should be upgraded to the new verification and validation standards. |
| YSORT 3031.02 | The development and technical review stages of the procedure process need strengthening. |
| YSORT 3031.03 | The process for incorporating CSA requirements into procedures needs to be formalized. |
| YSORT 3045.01 | Procedures do not always include controls and limits significant to the nuclear criticality safety of the operation. |
| YSORT 3045.02 | No objectives or criteria exist for NCS D to provide technical guidance in the development of operating procedures. |

D. Safety Envelope (SE)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to verify that safety-significant systems and equipment were operational and in satisfactory condition, and that documents and control programs were technically correct and consistent with the safety requirements as defined in the OSRs and CSAs.

The review approach included document reviews, interviews, observation of evolutions and drills, and facility walkdowns. The results of the safety envelope review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The one applicable OSR and sample CSAs were reviewed for technical accuracy and consistency with the physical configuration. The status of safety-significant system components in information control programs, such as the Recall-A (calibration) program, was evaluated for accuracy, completeness, retrievability, and consistency. Safety-significant system instruments that monitor OSR requirements were checked for current calibration and documentation. Procedures that govern surveillance testing and preventive maintenance were evaluated for effectiveness. The concluding objective was to determine whether the safety-significant systems identified in the POA were operational, in compliance with the OSR, and ready for resumption.

This assessment sampled five CSAs for review and verification. All five were field verified for technical accuracy and consistency with the physical configuration. A review of the engineering analysis for the sample CSAs confirmed that the technical requirements had been satisfactorily included in the respective CSA documentation. However, some information contained within the CSAs for implementation was found to be vague, misleading, or cumbersome. For example, conditions were allowed that forced the operator to rely on the CSA document or memory to accomplish tasks (see RA-OP-1-2). In other cases, implementation instructions were vague and could be reasonably interpreted in several different ways (see RA-OP-1-3).

Regarding the adequacy and correctness of safety limits for operating systems, the OSR was found to be technically accurate and consistent with the safety systems and components in the field. This was verified through field walkdowns of the CAAS and fire protection systems in Building 9204-2E.

Surveillances, inspections, and calibrations were performed on the appropriate equipment and at the correct frequencies due to improved methods for tracking and controlling these activities. Procedures that govern the inspection and calibration activities were up to date, consistent with the OSR, and properly documented. Problems with surveillance procedures included missing OSR requirements in a CAAS surveillance procedure, zone maps in a CAAS surveillance procedure that did not reflect the physical configuration (see RA-SE-1-1), and operations and fire protection personnel deviating from the requirements in a quarterly fire protection surveillance procedure (see RA-SE-1-3).

Preventive maintenance has not been performed on the fire protection equipment because these procedures have not been issued for use. Current completion dates for the issuance of these preventive maintenance procedures will not be met (see RA-SE-2-1).

Safety-significant equipment was found to be properly labelled, inspected, and calibrated, although some improvement is needed in the control of files and reports used for tracking status.

After completion of the reviews associated with this functional area and an evaluation of the programs in place, it was judged that once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly is warranted.

The deficiencies identified in the safety envelope area are as follows:

RA-OP-1-2	Finding	Some CSAs are not always accurate when describing the existing field configuration. They also force the operator to rely heavily on memory. (Prestart)
RA-OP-1-3	Finding	Some QO CSAs contained vague, non-specific wording, which permitted operator latitude in interpreting requirements. (Prestart)
RA-SE-1-3	Finding	Operations and fire protection personnel deviated from the surveillance test procedure requirements. (Prestart)
RA-SE-2-1	Finding	Fire protection preventive maintenance has not been conducted because the procedures are still under development. (Poststart)
RA-SE-1-1	Observation	Zone maps used by surveillance teams are not always accurate or optimally established.

The following deficiency was identified by the RA team. However, a YSORT finding had been previously written, and the RA team did not write a duplicate finding:

YSORT 3021.02	The current system configuration drawings for the B2 and B2E Fire Protection Systems are inadequate for operations perspectives. Full system piping and instrument diagrams (P&ID) and electrical drawings for the fire protection system need to be developed and issued.
---------------	--

E. Training and Qualification (TQ)

The assessment in this area was performed against requirements established in Y/OA-6238, "Readiness Assessment Plan of Action (POA) for Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," and described in Y/OA-6245, "Implementation Plan for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant." The assessment was conducted to verify that training and qualification programs had been established, documented, and implemented, and there were adequate numbers of qualified/certified personnel to resume operations.

The review approach included document reviews, interviews, and observation of evolutions and drills, including classroom instruction. The results of the training review were documented daily on the Form 1s included in Appendix B. Specific deficiencies were documented on the Form 2s contained in Appendix C.

The assessment in the training and qualifications area assessed the training and qualification programs for D&A and QO and support functions identified in the POA. The review also addressed these programs to ensure that they were adequately established, documented, and implemented to cover the range of required duties. The assessment recognized the graded approach as described in the approved POA. Training, qualification, and level of knowledge were assessed by reviewing procedures, policies, and personnel training records; interviewing selected managers, supervisors, operators, and support personnel; administering a comprehensive written exam; and observing evolutions and drills.

The assessment in the level of knowledge area assessed the adequacy of the technical qualification of personnel responsible for facility operations; the level of knowledge of operations personnel based on reviews of examinations, exam results, selected interviews, and observation of work performance; and managerial qualifications of personnel responsible for facility operations.

The qualification standards for D&A and support organization positions defined the written, oral, and operational examinations required for qualification/certification for the applicable positions. Lesson plans were based on clearly defined enabling objectives. Written examinations and oral examination questions were based on the material presented in the lesson plans. As a general rule, examination questions were directly related to enabling objectives.

Training program plans, which describe the goals and objectives of the training and qualification programs, were in place but were still in draft form. On-the-job-training (OJT) and hands-on evaluation of skills were incorporated into approved training programs. Initial training programs were in place.

Training and qualification records were reviewed for selected D&A, QO, and support function operators, supervisors, and maintenance staff positions with a focus on the formality and completeness of training record management. It was determined that tabletop job task analyses (JTA) were used to establish training and qualification requirements. However, there were a number of training requirements that were omitted from the DSO qualification cards. Examples included operation of leak detectors and SAM-2 meters, preparation and application of adhesives, and packing of components for shipping (see RA-TQ-2-1). A review of personnel training records indicated that not all of the applicable QO personnel had the required evidence of qualification/certification in their training records (see RA-TQ-1-1). Additionally, many problems were found in the administration, grading, and recording of examinations that lead to certification in QO. In one example, the comprehensive examination for a metallurgist was not properly graded, resulting in a satisfactory grade for unsatisfactory performance (see RA-TQ-1-2 and RA-TQ-4-1). Satisfactory completion of a comprehensive examination is a prerequisite for certification. Corrective actions by the QO management were incomplete. While the metallurgist was removed from work activities, certification documents remained in place.

Procedures and training infrastructure were reviewed. The qualification/certification process is clearly defined and found to be adequate for D&A. A review of the QO qualification/certification process revealed that procedures that define proficiency requirements have not been established (see RA-TQ-1-3). Additionally, QO has not established and implemented a continuing training program (see RA-TQ-3-2). The Facilities Maintenance Organization (FMO) has not established controls that ensure only qualified personnel perform activities requiring qualification (see RA-TQ-2-2).

As part of the RA, a comprehensive written examination was given to selected D&A personnel. Specific areas of examination included technical competency, safety and health issues, and conduct of operations. As a general rule, level of knowledge was adequate in all areas. There was, however, some weakness in the area of conduct of operations. The interviews that were conducted indicated a good level of knowledge of the safety culture in D&A. However, QO demonstrated weaknesses in knowledge of compensatory measures and conduct of operations.

Training and qualification/certification is achieved through the use of the systematic approach to training. This is a five step process which includes the analysis, design, development, implementation, and evaluation phases of training. Analysis determines specific training requirements needed for qualification. Typically, these include requirements for fundamental and integrated system training. The training and qualification programs for D&A and QO consist almost entirely of health and safety compliance-based training and procedure-based training (see RA-TQ-2-3). Without fundamental and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and response to unexpected or abnormal situations.

Overall, D&A personnel demonstrate an adequate understanding and implementation of the qualification/certification process. D&A management is involved in the process and is knowledgeable of the applicable training requirements. After completion of the reviews associated with this functional area and an evaluation of the programs in place, it was judged that once pre-start findings associated with this area are resolved, resumption of operations associated with C5 disassembly is warranted.

A significant number of training and qualification issues were identified in QO during this RA. These issues individually do constitute a serious concern. However, the breadth and depth of these issues taken as a whole are indicative of an inadequate understanding within the organization of the qualification/certification process. As a result, considerable additional effort will be required to support resumption activities.

The following deficiencies were identified by the RA team:

- | | | |
|-----------|---------|---|
| RA-TQ-1-1 | Finding | Not all QO personnel requiring qualification/certification have evidence of qualification/certification in their personnel training records. (Prestart) |
| RA-TQ-1-2 | Finding | The comprehensive examination for a QO metallurgist was not properly graded and this resulted in a failing score. The metallurgist should be considered for decertification. (Prestart) |

RA-TQ-1-3	Finding	Procedures in QO were not established to define required activities and their frequency to maintain an active status as a certified fissile material handler. (Prestart)
RA-TQ-2-1	Finding	Assemblyperson dismantlement position qualification requirements did not include training identified by the operating organization as being required for qualification/certification. (Prestart)
RA-TQ-2-2	Finding	FMO has not sufficiently established controls that ensure only qualified/certified personnel perform activities requiring qualification/certification. (Prestart)
RA-TQ-2-3	Observation	The training programs for D&A and QO do not contain fundamental and systems training.
RA-TQ-3-1	Observation	Continuing training dates are not accurately and consistently identified.
RA-TQ-3-2	Finding	The QO has not established and implemented a continuing training program. (Poststart)
RA-TQ-4-1	Finding	Problems were found in the administration, grading, and recording of examinations that lead to qualification/certification in the QO. (Prestart)

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III. LESSONS LEARNED

- The RA team training process should include basic writing and format criteria to help reduce the number of non-content revisions. Some examples of problems team members experienced are as follows:
 - Writing conventions (e.g., use only past tense verbs, do not itemize conclusions) were a source of frequent changes.
 - The required formats for some forms/sections (such as closure criteria) were not always clear. This was not a major problem, since most format requirements were conveyed to the team using examples. However, many examples differed from the final ones chosen.
- Problems with training and facility access for RA team members can be significant and require early resolution. The following could alleviate some of the problems encountered:
 - Training necessary for unescorted facility access must be determined and scheduled as early as possible. The facility to be assessed must provide an accurate list of required training modules.
 - Most, if not all, training will need to be conducted outside of published training class schedules. Points of contact are different for each type of training (e.g., Radiological Worker II, Nuclear Criticality Safety, and General Employee Training). The RA team leader needs to designate one individual, located in the area where the assessment will take place, to schedule and coordinate training and facility access.
 - All RA team members should have LMES badges. One RA team member who did not have an LMES badge was not afforded unescorted access, even though he met all training requirements for the facility.
- The use of daily updates on status of CRAD requirements needs to be done through discussions with the team manager and the area leads to maintain the status log (CRAD TRACKER) in a meaningful manner. This causes the area leads to maintain control of all requirements, not just those the lead has assigned himself. The daily update of Form 1s and the CRAD TRACKER is useful to keep track of progress and refocus on the specific requirements of the CRADs.
- Many of the observations conducted are in support of operations and, as such, assignments of other team members to support observations and walk downs needs to be coordinated. At least the area leads should be involved to ensure that CRAD requirements necessary to support completion of functional area requirements can be considered and that necessary operations are scheduled to meet observations outlined in the CRADs.

- **CRADs that involve input from several members of the assessment team (e.g., safety culture for the D&A assessment) should be in all team members' work plans and updated daily (basically a daily debriefing).**
- **Where mockups are used to demonstrate capabilities, as many simulations and other artificialities as possible should be removed. For example, if actual work would be performed in a respirator area, the area with all attendant restrictions should be established and enforced. If a crane would be required to move actual parts due to their weight, the crane should be used to transport mockup parts, even though they are much lighter in weight than the actual parts.**

IV. ACRONYMS

CAAS	Criticality Accident Alarm System
CRAD	Criteria and Review Approach Document
CSA	Criticality Safety Approval
D&A	Disassembly/Assembly
DNFSB	Defense Nuclear Facility Safety Board
DOE	Department of Energy
DU	Depleted Uranium
DUO	Depleted Uranium Operations
ESAMS	Energy Systems Action Management System
EU	Enriched Uranium
FMO	Facilities Maintenance Organization
JTA	Job Task Analysis
LMES	Lockheed Martin Energy Systems, Inc.
MAA	Material Access Area
MJR	Maintenance Job Request
MSA	Management Self Assessment
NCSD	Nuclear Criticality Safety Department
OJT	On-The-Job Training
ORO	Oak Ridge Operations
ORR	Operational Readiness Review
OSR	Operational Safety Requirements
&ID	Piping and Instrument Diagram
POA	Plan of Action
QO	Quality Organization
RA	Readiness Assessment
RFA	Request for Approval
SE	Safety Envelope
YSORT	Y-12 Site Office Restart Team

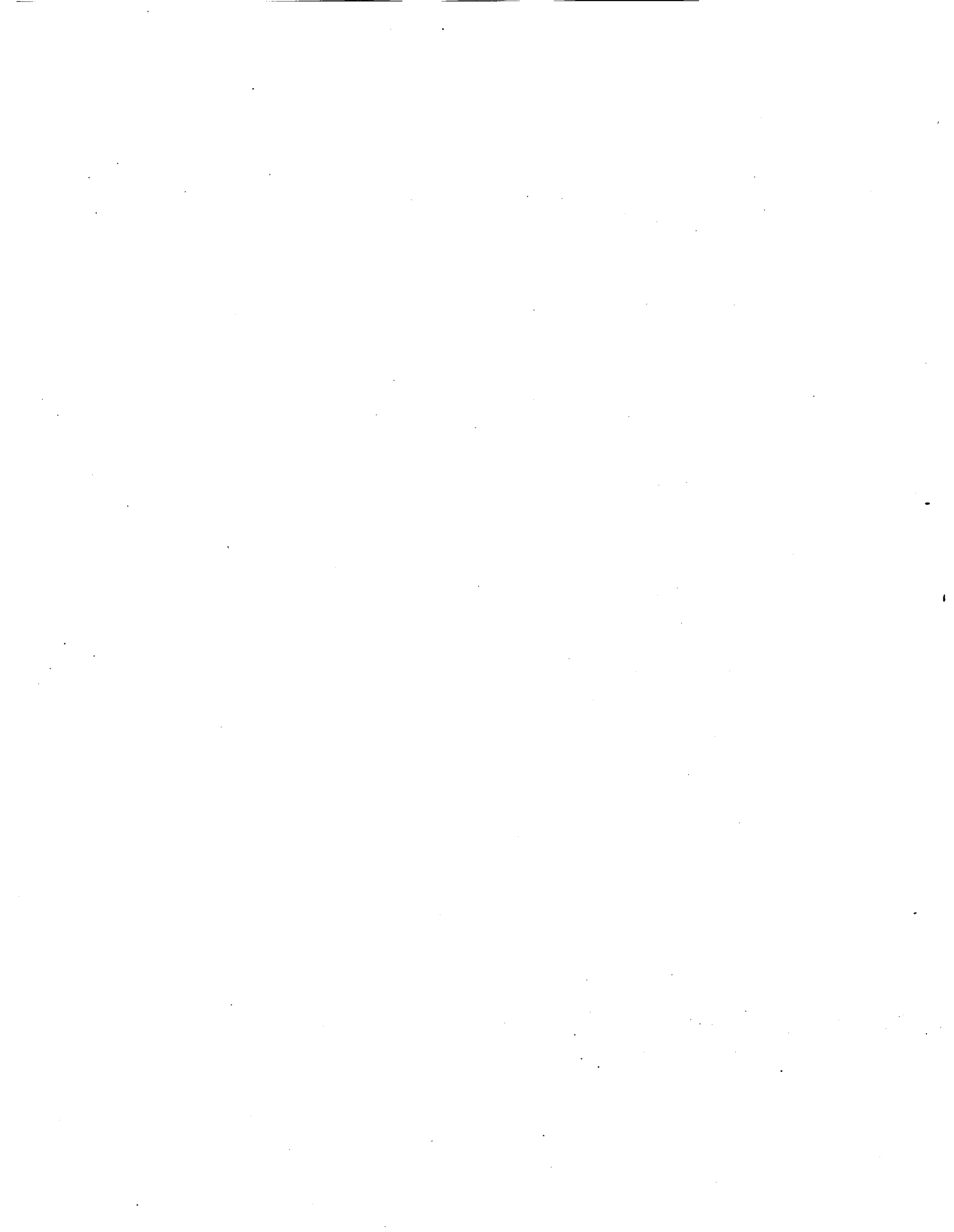
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APPENDIX A

Copy of Y/OA-6245

**Lockheed Martin Energy Systems, Inc.
Readiness Assessment Implementation Plan
for the
Resumption of
Disassembly/Assembly Activities
at the
Oak Ridge Y-12 Plant**

January 5, 1995



Y/OA-6245

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Readiness Assessment
Implementation Plan
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Y/OA-6245

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Readiness Assessment
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Oak Ridge Y-12 Plant**

APPROVED:

 1/5/96

J. P. Flynn, RA Team Manager

January 5, 1996

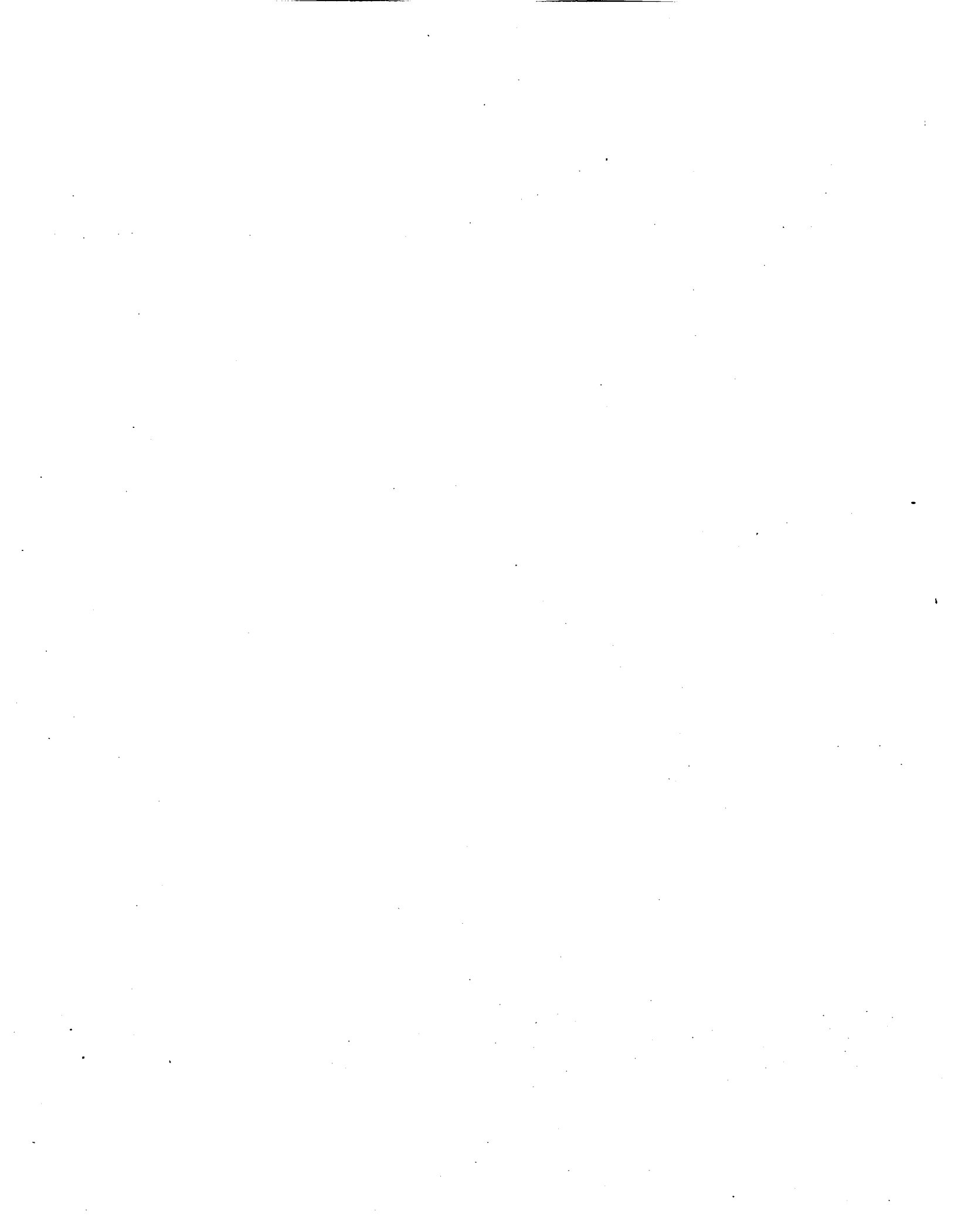


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I. INTRODUCTION

A. General

This implementation plan has been prepared to comply with the requirements of Department of Energy (DOE) Order 5480.31, "Startup and Restart of Nuclear Facilities," and DOE-STD-3006-93, "Planning and Conduct of Operational Readiness Review (ORR)." The scope of the Readiness Assessment (RA) is described in the Plan of Action (POA), Y/OA-6238, Revision 1, which was prepared by Y-12 line management and approved by the Department of Energy, Oak Ridge Operations Office, on June 16, 1995.

The Manager, Oak Ridge Operations Office, is the designated restart authority.

This implementation plan contains the overall assessment procedure, and its appendices include the Criteria and Review Approach Documents (CRAD), which defines the review objectives and criteria as well as the approach for assessing each objective. Results will be provided in a report that is discussed in section IX of this implementation plan.

Operations at the Y-12 Plant were suspended as a result of a review of Building 9204-2E containerized storage operations and applicable Criticality Safety Analyses (CSA) on September 22, 1994. The review found violations of administrative safety controls associated with material storage arrays. Operations personnel, upon discovery of the criticality safety violation, did not immediately administratively control the area; i.e., assure personnel were kept at a safe distance from the array. They also did not immediately notify the Nuclear Criticality Safety Department (NCSA) or the Plant Shift Superintendent. This was a violation of Energy Systems training and procedures. Following the event, all CSAs 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 CSA walkdowns, the occurrence report covering the initial infraction, the Type "C" Investigation, and the Defense Nuclear Facility Safety Board (DNFSB) Recommendation 9404 indicate the basic cause to be a lack of rigor in Conduct of Operations that permitted less than strict compliance with procedures. The issue was not one of operations being outside the safety envelope—the primary safety controls remained intact. Rather, the issue was the need to improve organizational performance and greater assurance in the safety management process of daily operations. Within the umbrella of conduct of operations, the principal failure was the result of personnel not following procedures with the rigor required. Contributing was the lack of training on CSAs in particular.

B. Y-12 Plant

The Y-12 Plant is one of two installations in Oak Ridge, Tennessee, managed by Lockheed Martin Energy Systems, Inc. (Energy Systems) for the DOE. Energy Systems also manages the Oak Ridge K-25 Site. For four decades the Oak Ridge Y-12 Plant has been the national center for the handling, processing, storage, and disassembly of all DOE-controlled enriched uranium (EU) materials and components as well as depleted uranium (DU) and other special materials components.

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

Resumption activities for the Y-12 Plant are divided into mission areas that are defined by programmatic mission descriptions and needs. This Implementation Plan (IP) addresses the scope of the resumption of disassembly/assembly activities, which is one of the mission areas for the Y-12 Plant.

C. Disassembly Activities

Disassembly activities in Building 9204-2E are presently limited to manual techniques and a single-lathe operation. These activities were in progress prior to the September 22, 1994, stand down. Disassembly begins with receipt of the unit from the storage area (storage activities were assessed for readiness as part of the *Martin Marietta Energy Systems, Inc., Readiness Assessment Plan of Action for the Receipt, Storage, and Shipment of Special Nuclear Materials at the Oak Ridge Y-12 Plant*, Documents Y/OA-6233 and Y/OA-6234). Upon receipt of the units on the second floor of Building 9204-2E, they are transferred by forklift truck to the "tear-down" area. The "tear-down" area is a portion of the Material Access Area (MAA) on the second floor. The unit is then removed from its container and placed on a disassembly work table using an overhead crane and program-specific lifting device. The disassembly work table is then positioned in a recirculating walk-in hood. Disassembly of the unit is then performed using manual hand tools (hammers, chisels, pry bars) and pneumatic devices (chipping hammers, chisels, wrenches). A small Hardinge lathe is used for disassembly activities outside the walk-in hood. As the parts are removed, they are identified, verified, weighted, and segregated for further disassembly operations or transferred out of the area. Segregated parts are then transferred to the materials management area for final disposition to recovery processing areas (recovery processing will not be included in the scope of the Implementation Plan).

D. Assembly Activities

Assembly activities in Building 9204-2E include all aspects of assembly processing, from component precleaning to packaging. All assembly processes were approved for operation prior to the September 22, 1994, stand down, although specific programmatic operations may not have been ongoing at that time.

Assembly processing begins with receipt of the components from the storage area. Upon receipt of the components, they are transferred to the "cleaning" area. Prior to beginning cleaning operations, all components are verified for certification and material identification. Cleaning operations are performed by hand-wiping components with solvent. Additional surface preparation may be completed by electropolishing components in a charged solution or power brushing with a stainless steel brush. Cleaned components are wrapped in Kraft paper for protection and placed back in their respective containers for movement to the second floor assembly area.

Examples of other pretreatment activities include containerizing and baking of components, adhesive coating, and electrical testing. After component cleaning or pretreatment, the components are moved to the assembly work station required for the next operation. These work stations and work areas include environmentally enhanced rooms; assembly stands; surface plates; electron-beam, laser, gas tungsten arc, gas metal arc, and spot welders; bond stands, vacuum furnaces, machining stations, lathes, and leak-test stations. The assembly process may require several assembly steps with repeated use of some of the work stations or work areas. Interfaces with Quality Organization personnel may also occur several times during the assembly process to facilitate verification of product acceptance criteria. These interfaces may be with radiography, dye penetrant ultrasonics, or dimensional inspection personnel as required by the specific process or program. Upon completion of assembly operations, the component is packaged in a container approved for off-site shipment.

E. Materials Testing Laboratory

Materials testing operations under this resumption plan are limited to Room 311 in Building 9204-2E. Materials testing begins with the receipt of small samples of metallographic or mechanical properties evaluation.

Upon receipt of metallography samples, they are mounted in epoxy molds and, after hardening, are ground and polished to a flat, smooth surface. Samples are then moved to photographic stations for microscopic evaluation and photographic documentation. Additional steps to etch or anodize the surface using nitric acid and ammonium hydroxide, respectively, may be required prior to photographing.

Upon receipt of mechanical properties test samples, they are tested on standard industrial-type mechanical test equipment, usually to failure, to produce the required mechanical properties data.

II. PURPOSE

This Readiness Assessment will determine if Y-12 is ready to resume the disassembly/assembly activities that were shut down as a result of events on September 22, 1994. The Readiness Assessment will be conducted in accordance with this implementation plan.

III. SCOPE

A. Breadth of the Readiness Assessment

1. Basis for RA Breadth

The approved POA addresses each of the 20 core requirements of DOE Order 5480.31. The 20 core requirements (CR) were further subdivided by the POA into 36 core objectives (CO) to aid applicability determination as described in DOE's June 2, 1994 change request, *Revision of DOE 5480.31*, proposed by the director of the Nuclear Operations and Analysis Division, EH-63. DOE OR concurrence in the use of the 36 core objectives was granted on November 10, 1994. In

November 1995, DOE STD-3006, Planning and Conduct of Operational Readiness Reviews (ORR), was revised to include the 36 COs.

a. Causal Factors of the Precipitating Event

The breadth of the RA is defined by a correlation between the COs and the causal factors and the issues associated with the September 22, 1994 incident. The causal factors were derived from Y/AD-622, "Type C Investigation of the Y-12 Plant Criticality Safety Approval Infractions Event at Building 9204-2E on September 22, 1994." The following were identified as causal factors:

- Management had not ensured that some Nuclear Criticality Safety (NCS) deficiencies and their root causes were always identified and corrected in a timely manner.
- Shortcomings existed in verbal and written communications regarding some CSAs.
- Inadequate attention to detail and rigor existed in some areas of the conduct of operations at Building 9204-2E in VTR-2 and VTR-3.
- Roles and responsibilities for some positions had not always been clearly understood and implemented.

b. Additional Core Issues

The following two additional issues have been included to address root causes of the precipitating event and further specifically address DNFSB recommendation 94-4:

- Personnel knowledge and experience (technical, procedural, and safety cultural) may not be sufficient to uniformly support continued safe operations per DNFSB recommendations 93-1, 93-6, and 94-4(3);
- A comprehensive review of the nuclear criticality safety program at the Y-12 Plant is necessary to assure effective performance.

c. Focus of Restart Preparations and Readiness Assessment

The focus of the restart preparations is on correcting the causal factors and additional core issues described above. These factors and issues are centered largely on the rigor and formality of the operations performed.

The focus of this assessment is on personnel and training since the causal factors and issues were primarily associated with conduct of operations errors. The COs are used to verify the readiness of personnel, training, systems, equipment, facilities, procedures, and administrative systems. The RA also includes those areas where deterioration of capability may have occurred during the period of shutdown, such as operator level of knowledge.

2. List of Core Objectives

The scope of the RA as defined in the approved POA includes the following Core Objectives. The POA includes additional discussion concerning the scope or focus intended for each CO. The individual CRADs have incorporated this additional specificity. Some core objectives of DOE Order 5480.31 are excluded from the Readiness Assessment scope. The discussion and justification for the exclusion decisions is in the DOE-approved POA.

- CO-4. There are adequate and correct safety limits for operating systems. (CR-1)
- CO-7. There are adequate and correct procedures for operating systems and utility systems. (CR-1)
- CO-10. A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, safety-related process systems, and safety-related utility systems. (CR-5)
- CO-11. Safety system and other instruments which monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)
- CO-12. All safety and safety-related utility systems are currently operational and in a satisfactory condition. (CR-5)
- CO-13. Training and Qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)
- CO-14. Technical qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)
- CO-16. Training has been performed to the latest revision of procedures. (CR-18)
- CO-17. Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)
- CO-18. There are sufficient numbers of qualified personnel to support safe operations. (CR-13)
- CO-19. The implementation status for DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12)

Chapter I. Operations Organization and Administration

Chapter II. Shift Routines and Operating Practices

Chapter V. Control of On-the-Job Training

- Chapter VI. Investigation of Abnormal Events
- Chapter VIII. Control of Equipment and System Status
- Chapter XIV. Required Reading
- Chapter XV. Timely Orders to Operators
- Chapter XVI. Operating Procedures
- Chapter XVII. Operator Aid Postings

- CO-20. Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)
- CO-22. A routine operations drill program, including program records, has been established and implemented. (CR-9)
- CO-23. Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)
- CO-24. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)
- CO-25. A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)
- CO-27. Nonconformances to applicable DOE Orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)
- CO-28. An adequate startup or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)
- CO-29. A program is established to promote a site-wide safety culture. (CR-14)

B. Basis for Readiness Assessment Depth

Depth refers to the level of analysis, documentation, or action by which a particular CO is assessed. Variations in the depth are obtained by the number of criteria that are used to assess a given CO or by the intensity of the review approaches. The review approaches include documentation checks, interviews, and walkdowns. Increased depth is attained by applying more of the review approaches for a given criteria or objective. The depth to which the different COs are assessed varies, depending on the particular facility characteristics (e.g., category 2 versus

category 3 facilities) and according to the degree to which the requirement contributed to the incident on September 22, 1994. The graded approach, as described in Appendix 1 of DOE-STD-3006-93, is used to assist the team members in determining the appropriate assessment depth.

IV. READINESS ASSESSMENT PREREQUISITES (PR)

Several PRs have been identified that must be complete before beginning the Energy Systems RA. These PRs consist of management plans and reviews necessary to ensure line management readiness to proceed and implementation of revised operational safety requirements (OSR) necessary for safe operations. Specifically, the PRs are as follows:

- PR-1. All procedures, CSAs, and OSRs identified as required for operation within the next 12 months has been reviewed, corrected, validated, and the most recent revisions are present in the workplace, as required. All identified procedures have been categorized and are adequately controlled. Procedures required for operations beyond the first 12 months are designated as Phase III and a schedule for their completion has been submitted to management. (COs-7, -4)
- PR-2. All applicable safety and safety related operational and utility systems have been identified. All required calibration, surveillance testing, and preventative maintenance actions are completed and up to date. All systems are operational based on system walkdown. (COs-10, -11, -12)
- PR-3. Operators, supervisors, and operational support personnel are identified, trained and qualified in accordance with the Y-12 Plant TIM milestones. Training and qualifications records reflect satisfactory completion of the requirements by a sufficient number of personnel to resume safe operations. (COs-13, -14, -18)
- PR-4. Identified operations and support personnel have completed required training on the latest version of each procedure identified as required for operations within the first 12 months of resumed operations. Personnel understand the procedure compliance policy and their responsibilities. A viable system for the control of the issuance and use of procedure revision by the field and by the training organization is in place. (CO-16)
- PR-5. Operation and operational support personnel levels of knowledge are validated and documented as satisfactory. The level of knowledge is validated through the following techniques: examinations, observation of procedure walkthroughs, and/or performance of operational drills or interviews, as appropriate. (COs-17, -22)
- PR-6. The status of the Conduct of Operations implementation program is in accordance with the submitted plant and facility-level Requests for Approval (RFAs). (CO-19)
- PR-7. The safety culture is established and verified to be adequate. Safety-related policy statements and program procedures are in place. Personnel have received an indoctrination on the programs and policies and exhibit awareness of requirements for safety operations. (COs-20, -29)

PR-8. A routine operations drill program is documented in guides developed for the program. The specified number of operating and support personnel required for the scenario must be present, trained, and qualified during drills and simulations. Operations and operational support personnel demonstrate a satisfactory level of proficiency in response to routine operations drill scenarios. The routine operations drill program records are current and reflect an adequate program status. (CO-22)

PR-9. Managerial qualification and awareness of functions, assignments, responsibilities, and reporting relationships are satisfactory. The managerial qualification requirements are defined in Energy Systems policy statements, position descriptions, and performance appraisal criteria. (COs-23, -24)

PR-10. Operations managers have reevaluated the results of internal and external assessments performed since October 1993 on their operations and facilities identified in this RA to determine if the corrective actions were appropriate. Operations managers have reviewed ESAMS status for their facilities. All CSA infractions are corrected. Any overdue items are approved to remain open. A record of the evaluation is completed and available. (CO-25)

Operations managers review all compensatory and corrective actions identified by the Y-12 Plant programmatic and facility programmatic and adherence-based compliance assessment of the 51 DOE orders of interest to the DNFSB. The actions described in the RFAs are adequately addressed for their facilities/activities. Corrective actions implemented prior to certification of readiness to proceed. (CO-27)

PR-11. All applicable systems and components within the scope of the RA necessary for the processes being restarted are identified. All required maintenance, preventative maintenance, calibrations, and surveillances are current. The start-up test program and system walkdowns verified readiness of the systems and components to support resumption of operations. (CO-28 and DOE Concern)

PR-12. Documentation of compensatory measures is complete and available. Compensatory measures implemented when CSAs are used as procedures are documented. Operations supervisors and personnel understand the compensatory measures and when they are required for operations. The conditions for the removal of compensatory measures are documented and understood by operations supervisory personnel. A program for the periodic management assessment of the continued need and adequacy of compensatory measures is in place and documentation of these assessments is complete and available. (DOE Concern)

PR-13. The use of mentors as compensatory measures for Conduct of Operations requirements is documented. Qualifications, experience, and responsibilities for mentors have been established, mentors have been selected, and mentors have been assigned to specific facilities. Performance objectives have been established which define the minimum performance of line personnel prior to mentor removal. (DOE Concern)

PR-14. A management self-assessment (MSA) is completed and verifies readiness to resume operations. The MSA verified the satisfactory status of the above prerequisite conditions,

including those for support programs. The MSA verified the completion of the resumption project plan. The MSA verified the satisfactory condition of the facility and support organizations against the RA Criteria and Review Approaches or the RA COs. The MSA verified completion of commitments in the approved restart plan, Y/AD 623, *Plan for Continuing and Resuming Operations*, which are applicable to the facilities and processes being restarted. (All COs, and DOE Concerns)

PR-15. Line management for all facilities and processes within the scope of this RA certifies in writing that readiness to resume operations has been achieved. [DOE Order 5480.31, section 9.b.(2)]

V. OVERALL APPROACH

The RA will provide Energy Systems senior management with independent, objective measurement of the readiness to resume disassembly/assembly activities at Y-12. It will also be an indicator that Y-12 has a management team with a satisfactory level of proficiency to resume these activities. The following paragraphs outline the sequence of the readiness assessment.

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

Upon completion of the Y-12 management self assessment (MSA), including resolution of all pre-start findings (with the exception of a manageable list of open pre-start findings that have a well defined schedule for closure) the Y-12 Restart Manager will issue a readiness to resume operations certification discussed in prerequisite PR-5. The Energy Systems RA will not begin until the Restart Manager has provided his certification of readiness, and direction has been received from the Vice President, Defense and Manufacturing to start the Readiness Assessment.

B. Readiness Assessment

The RA team members will review documentation and procedures; inspect equipment, systems and buildings; interview personnel; and observe simulated or actual operations as they are performed. The reviews conducted by each RA team member will be guided by a set of Criteria, Review, and Approach Documents (CRAD) included as Appendix 2. The review approaches include record reviews, interviews, and review of operational performance. The level of knowledge interviews will determine the awareness of fundamentals and the retention of material included in the training program. For a specific operation, the team members will review the records and procedures, observe the operation, witness the execution of the procedure and the generation of the records, and then follow up on pertinent issues with interviews. For example, if a mistake is noted during an evaluation, operators with similar qualifications may be questioned concerning their response to a similar situation.

The RA will place emphasis on reviewing samples of results or observing performance for adequacy. It will place less emphasis on systematic review of program structure and organization. However, if any portion of the review indicates a weak program, then further analysis of that program may be required. It must be noted that activities in disassembly/assembly are limited. Therefore, where "Shift Performance" is indicated in the CRADs, it will be monitored only if there are activities in process, or if activities can reasonably be simulated.

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

The Team Manager, in consultation with the applicable team member, has the responsibility for making the determination of whether a finding is pre-start or post-start. The criteria to be used in this determination are given in Appendix 3. The results of this determination are documented on a Deficiency Form (Form 2).

At the completion of the RA, a report will be prepared summarizing the review and commenting upon the readiness of Y-12 disassembly/assembly to restart. The Team Manager and team members will sign the final report and transmit it to senior Energy Systems managers. Dissenting opinions will also be forwarded as part of the final report.

Energy Systems and Y-12 management will be responsible for making corrective action plans in accordance with the requirements of Energy Systems procedure QA-16.1, "Corrective Action Program," and for closing all findings in accordance with QA-16.1. The Responsible Manager as defined in QA-16.1 will prepare evidence files for each finding submitted for closure. Assistance in the development of corrective action plans or interpretation of individual findings may be requested from the Team Manager or applicable team members.

The RA Team Manager must concur with the closure of all pre-start findings.

C. Assessment Results Briefings

The team will provide briefings on the conduct and results of the RA to Y-12 management and, upon request, to senior Energy Systems or DOE management for their information and to help them form their decision regarding start-up.

VI. RA TEAM PREPARATIONS

Prior to commencement of on-site RA activities, training and familiarization for RA team members will be conducted. It will consist of site and facility familiarization, necessary radiological and safety training for facility access, facility program status, and development of the RA Implementation Plan and associated CRADs. Each team member has assessment experience or appropriate training. No team member has any connection with disassembly/assembly activities that impact his independence to review assigned functional areas. By their selection, the Team Manager certifies that each team member is technically competent, has appropriate assessment experience, is independent, and will become familiar with the facility through the familiarization process described above. Summaries of experience are contained in Appendix 1.

VII. ENERGY SYSTEMS RA PROCESS

The Team Manager, assisted by team members, has developed the CRADs for this review. These CRADs provide defined bases for conducting the RA within the scope set forth by the core requirements and derived core objectives of DOE Order 5480.31. The Team Manager will review the efforts of the team members to ensure that all objectives are thoroughly assessed. The CRADs are based on the combined expertise of the team members, DOE Orders, and other requirements, the potential hazards of operations, and the findings of internal and external review groups.

VIII. ADMINISTRATION

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

Responsibility for the quality of the review process rests with the Team Manager and includes selection of all Energy Systems RA team members and daily on-site review of the findings of the team members.

IX. REPORTING AND RESOLUTIONS

A. Forms

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

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

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

to the discretion of the team member and Team Manager. Sample Forms 1 and 2 are located in Appendix 4.

B. Finding Classification

A single issue or a group of related issues that have been documented on Deficiency Forms may constitute a finding. The Team Manager, in consultation with the team member(s), has the responsibility for making the determination of whether a finding is pre-start or post-start. Appendix 3 provides the criteria to be used to aid in this determination. The results of this determination are documented on the Deficiency Form.

C. Lessons Learned

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

D. Final Report

The Team Manager will develop a report to document the results of the RA. The report will identify findings and observations found in the review and will identify findings as pre- or post-start.

Team members will be asked to sign the disassembly/assembly report, showing they concur with the disassembly/assembly RA final report in the areas of their expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The Energy Systems RA report will be transmitted by the Team Manager to the Energy Systems Vice President, Defense and Manufacturing.

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

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

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

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

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

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

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

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

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

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

X. SCHEDULE

The Y-12 disassembly/assembly Energy Systems RA is expected to commence approximately one week after line management certification of readiness and endorsement by the Vice President, Defense and Manufacturing. The Energy Systems RA will require about two weeks to complete. The Energy Systems RA team training and familiarization may occur prior to Energy Systems issuance of the line management certification of readiness.

APPENDICES

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



TEAM LIST

<u>NAME</u>	<u>AREA(s)</u>
Joe Flynn	Team Manager
*Ron Shaffer	Management
**Jay Hummer	Management
*Ollie Oliver	Operations/Procedures/Safety Envelope
Ed Lee	Operations/Procedures
Bruce Wilson	Operations/Procedures
*Norman Ford	Training/Qualification
Ron McConathy	Training/Qualification
George Zagursky	Safety Envelope

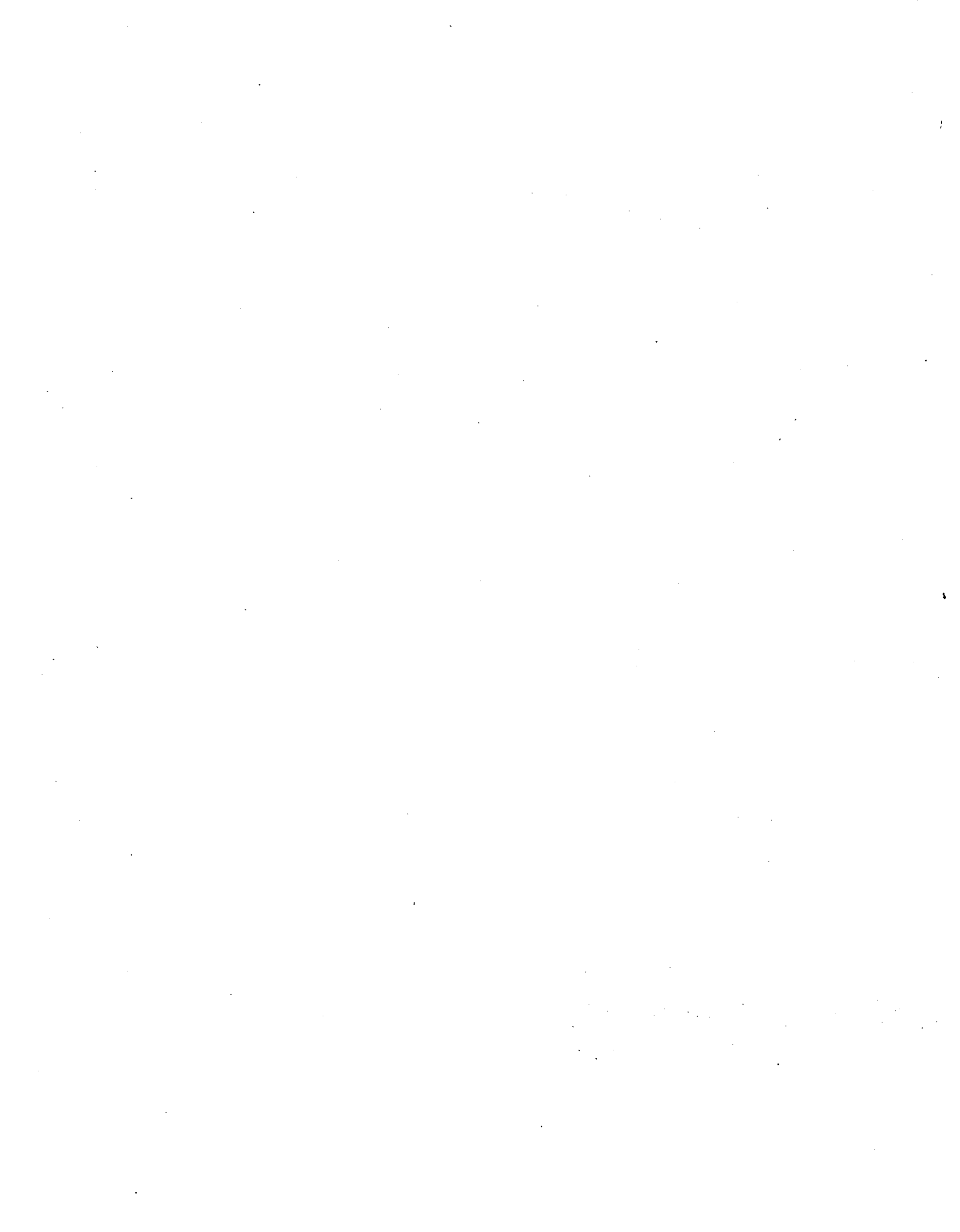
*Lead evaluator for assigned area(s)

**Corporate representative



APPENDIX 1

TEAM MEMBER SUMMARIES OF QUALIFICATION



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Joseph P. Flynn

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

READINESS ASSESSMENT TEAM MANAGER

SUMMARY OF TECHNICAL QUALIFICATIONS:

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

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- See INPO experience.
- Participated in 13 LMES Evaluations Group evaluations as a consultant to the team manager.
- Led LMES RA for Depleted Uranium Operations
- Completed Management Oversight and Risk Tree (MORT) training (1985)

SUMMARY OF FACILITY FAMILIARIZATION:

Participated in one LMES Evaluations Group evaluation of Y-12.

BASIS FOR ACCEPTABLE INDEPENDENCE:

The Manager, Evaluations Program reports to the Vice President, Compliance, Evaluations, and Policy.

TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Norman T. Ford

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 17, 18

SUMMARY OF TECHNICAL QUALIFICATIONS:

- Currently pursuing BS in Engineering at the University of Tennessee
- U.S. Navy Nuclear Power Program, served as Leading Petty Officer Engineering Laboratory Controls Division
 - Supervised repair, maintenance, testing, and quality control of reactor plant mechanical systems
 - Trained and supervised technicians in radiological controls and radiochemistry during New Construction and Start-up activities
- Seven years nuclear submarine experience
- U.S. Navy Quality Assurance Inspector/Controlled Material Petty Officer
 - Conducted detailed inspections of nuclear plant construction and maintenance
 - Developed maintenance and testing procedures
- Designed/Developed/Implemented/Evaluated/Administered various LMES leadership and health and safety training programs
- Certified Instructor HAZWOPER, Department of Labor

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Lead evaluator for Training/Qualification in the K-25 Deposit Removal Program ORR
- Lead evaluator for ORNL Facility Manager Technical Competency Evaluation, 1995
- Team member in the RA for RSS at Y-12
- Assisted in several LMES training assessments
- Completed DOE Performance Monitoring and LMES ORR courses


SUMMARY OF FACILITY FAMILIARIZATION:

Performed numerous support and assessment activities at Y-12

BASIS FOR ACCEPTABLE INDEPENDENCE:

Report to central training organization; no responsibilities for any Y-12 activity.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: John Jay Hummer

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MANAGEMENT (MG): Core Objectives 23, 24, 25, 27, 29

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Engineering, U.S. Naval Academy
- U.S. Navy Nuclear Power Program, including submarine command
- M.S. Systems Management, University of Southern California
- Commercial Nuclear Power Plant Management Consultant
- Director, Safety and Health, including nuclear safety, MMES and MMC
- Director, DOE Programs, including nuclear safety, LMC

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Member, Navy Nuclear Propulsion Examining Board
- Participant in commercial nuclear power plant inspections and investigations
- Participant or leader in several MMES ESH audits
- Participant or leader in several MMC and LMC ESH audits

SUMMARY OF FACILITY FAMILIARIZATION:

MMES-level responsibility for nuclear and other safety programs at the Y-12 Plant (1991-1994) with frequent site visits; leader of formal investigation of HF leak in EU operations, Spring 1992

BASIS FOR ACCEPTABLE INDEPENDENCE:

The MMES Director of Safety and Health reports to the Vice President, Compliance, Evaluation, and Policy.

Current position, since mid-1994, reports to an LMC VP.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: J. E. Lee

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Engineering, University of Tennessee at Chattanooga, Highest Honors Program
- M.S. Engineering, University of Alabama in Huntsville
- Registered Professional Engineer, State of Tennessee
- Commercial Nuclear Plant Experience
 - Design Engineer
 - Startup Engineer
 - Maintenance Engineer
 - Maintenance Manager
 - Senior Reactor Operator (SRO) trained
 - Training Manager
- Research Reactor Experience
 - Developed High Flux Isotope Reactor Conduct of Operations Program
 - SRO qualified at HFIR
 - Plant Manager at HFIR

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Developed and currently implement the HFIR self-assessment program
- Participated in HFIR restart review and approval process
- Served on activities oversight committee at Y-12 after September 1994 shut down
- Completed MMES observation training program

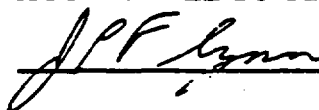
SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to High Flux Isotope Reactor at ORNL (HFIR) with no regular interface with the Y-12 site.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Ronald K. McConathy

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

TRAINING AND QUALIFICATION (TQ): Core Objectives 13, 14, 16, 17, 18

SUMMARY OF TECHNICAL QUALIFICATIONS:

- Oversight of ORNL 5480.20A TIM implementation for ORNL nuclear facilities, 1995
- ORNL Facility Management Program Manager, Office of Operational Readiness and Facility Safety, 1994-present
- Temporary assignment to the MMES Evaluations Group, July-October 1993
- Environment, Safety, and Health Group Manager, Environmental Sciences Division, 1989-1993
- Master of Science, University of Tennessee, 1976

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Completed the course in performance-based evaluation methodology in 1993.
- Participated in 1993 evaluations at Paducah and Portsmouth plants.

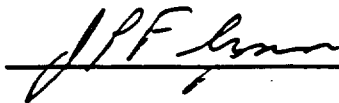
SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to ORNL with no regular interface with Y-12.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: H. A. Oliver III

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S., U.S. Naval Academy
- U.S. Navy Nuclear Power Program - 18 years including command of nuclear powered submarine and nuclear capable submarine tender
- Lockheed Martin Energy Systems (LMES) Evaluations Group - four years

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Certified as LMES Evaluations Program team manager and lead evaluator
- Served as team manager and as lead evaluator for operations and environment, safety, and health during evaluations of LMES facilities
- Served as team leader for management self-assessment of Y-12 Receipt, Shipment, and Storage
- Participated in management self-assessment of Y-12 Depleted Uranium Operations
- Operational Readiness Review training, November 1994

SUMMARY OF FACILITY FAMILIARIZATION:

Overview training by Y-12 management

BASIS FOR ACCEPTABLE INDEPENDENCE:

Normally assigned to LMES Evaluations Group reporting to the Manager, Evaluations Program. No direct responsibility for Y-12 Disassembly/Assembly activities.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Ronald D. Shaffer

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

MANAGEMENT (MG): Core Objectives 23, 24, 25, 27, 29

SUMMARY OF TECHNICAL QUALIFICATIONS:

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

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Participated in over 40 SSFIs and EDFIs in commercial nuclear facilities
- Lead over 100 integrated assessments at DOE and commercial nuclear facilities
- Member of the Management Subteam on two Tiger Teams
- Participated in 10 DOE Headquarters ORR for initial startup and restart of facilities
- Subteam Lead for Martin Marietta Corporate assessments in the areas of operations, engineering, and maintenance

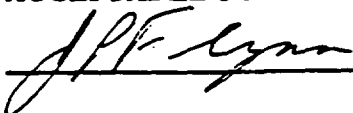
SUMMARY OF FACILITY FAMILIARIZATION:

Participated in two Martin Marietta Corporate assessments of Y-12.

BASIS FOR ACCEPTABLE INDEPENDENCE:

Have not personally performed any work for the Y-12 facility management responsible for disassembly and assembly activities.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: Bruce A. Wilson

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

OPERATIONS (OP): Core Objectives 7, 19, 20, 22, 28

SUMMARY OF TECHNICAL QUALIFICATIONS:

- B.S. Mechanical Engineering, Syracuse University
- M.S. Nuclear Engineering, University of Washington
- Licensed/Certified as Senior Reactor Operator on Two Air Force Test Reactors
- Certified Operator License Examiner, USNRC
- Certified Member, Incident Investigation Team (IIT), NRC

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

- Twenty-seven years experience in nuclear related areas
- Manager, NRC Resident Inspector Program
- Member of two NRC Augmented Inspection Teams (AITs)
- Team Leader, Symptom-Based Emergency Procedures
- Member of DOE/EH ORRs at Idaho, Pantex, Savannah River (F-Canyon & FB-Line), Princeton Tokomak, and TA-55 (Los Alamos)
- Management Assistance to K-25 Deposit Removal Project ORR

SUMMARY OF FACILITY FAMILIARIZATION:


- Project Manager for Subcontractor development of Training and Qualification Programs at Y-12, including EUO, DSO, and DUO.

BASIS FOR ACCEPTABLE INDEPENDENCE:

Parallax is subcontractor to LMES; has no direct line management involvement.

Y-12 Training and Qualification Programs are separate and distinct from Operations and Procedures.

ACCEPTABLE TO TEAM MANAGER



TEAM MEMBER QUALIFICATION SUMMARY

TEAM MEMBER NAME: George P. Zagursky

TECHNICAL AREA(S)/CORE REQUIREMENTS ASSIGNED:

SAFETY ENVELOPE (SE): Core Objectives 4, 10, 11, 12

SUMMARY OF TECHNICAL QUALIFICATIONS:

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

SUMMARY OF ASSESSMENT/ORR/INSPECTION QUALIFICATIONS:

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

SUMMARY OF FACILITY FAMILIARIZATION:

In the past, assisted Y-12 in developing their CM Program.

BASIS FOR ACCEPTABLE INDEPENDENCE:

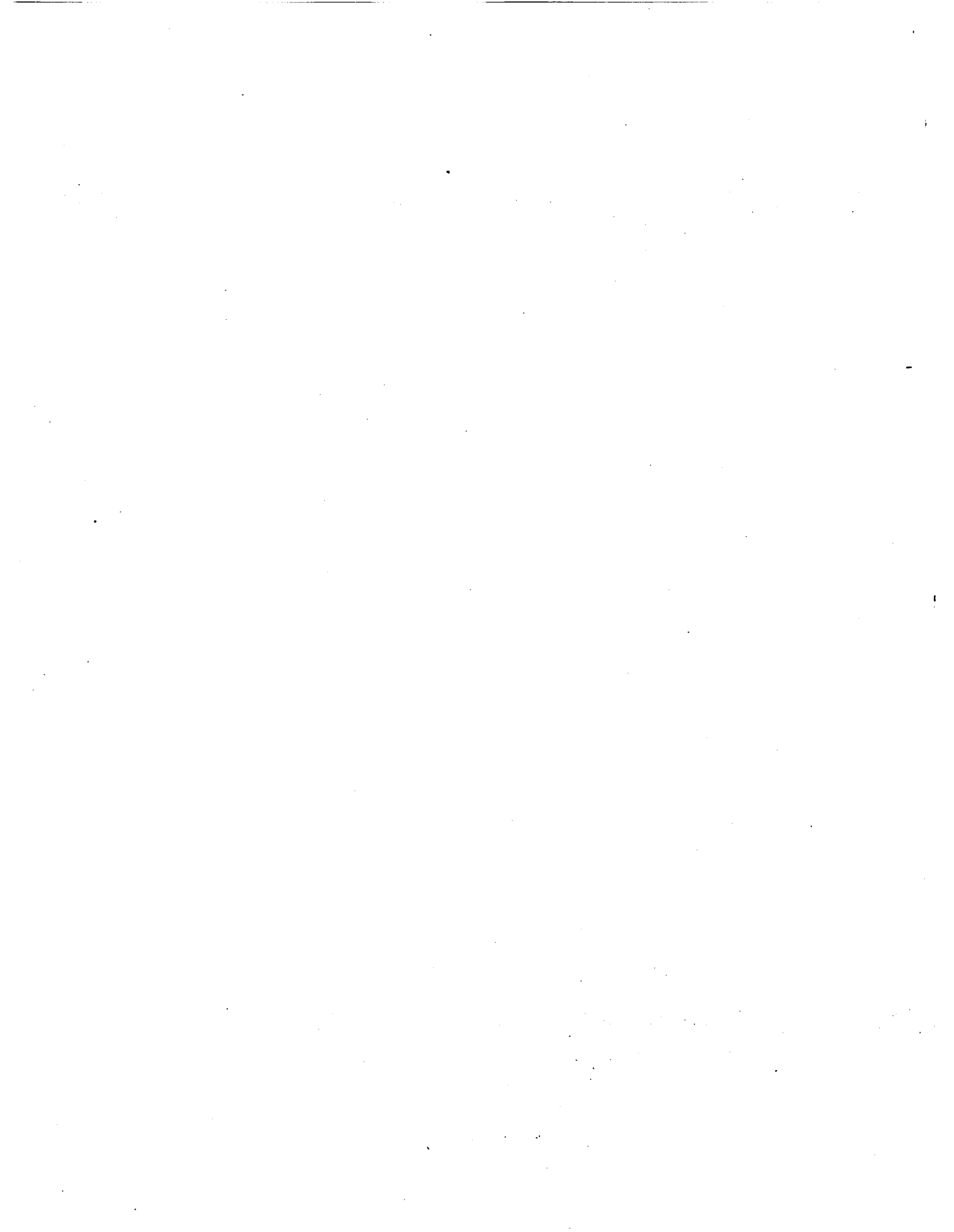
LMES subcontractor with no regular interface with Y-12.

ACCEPTABLE TO TEAM MANAGER



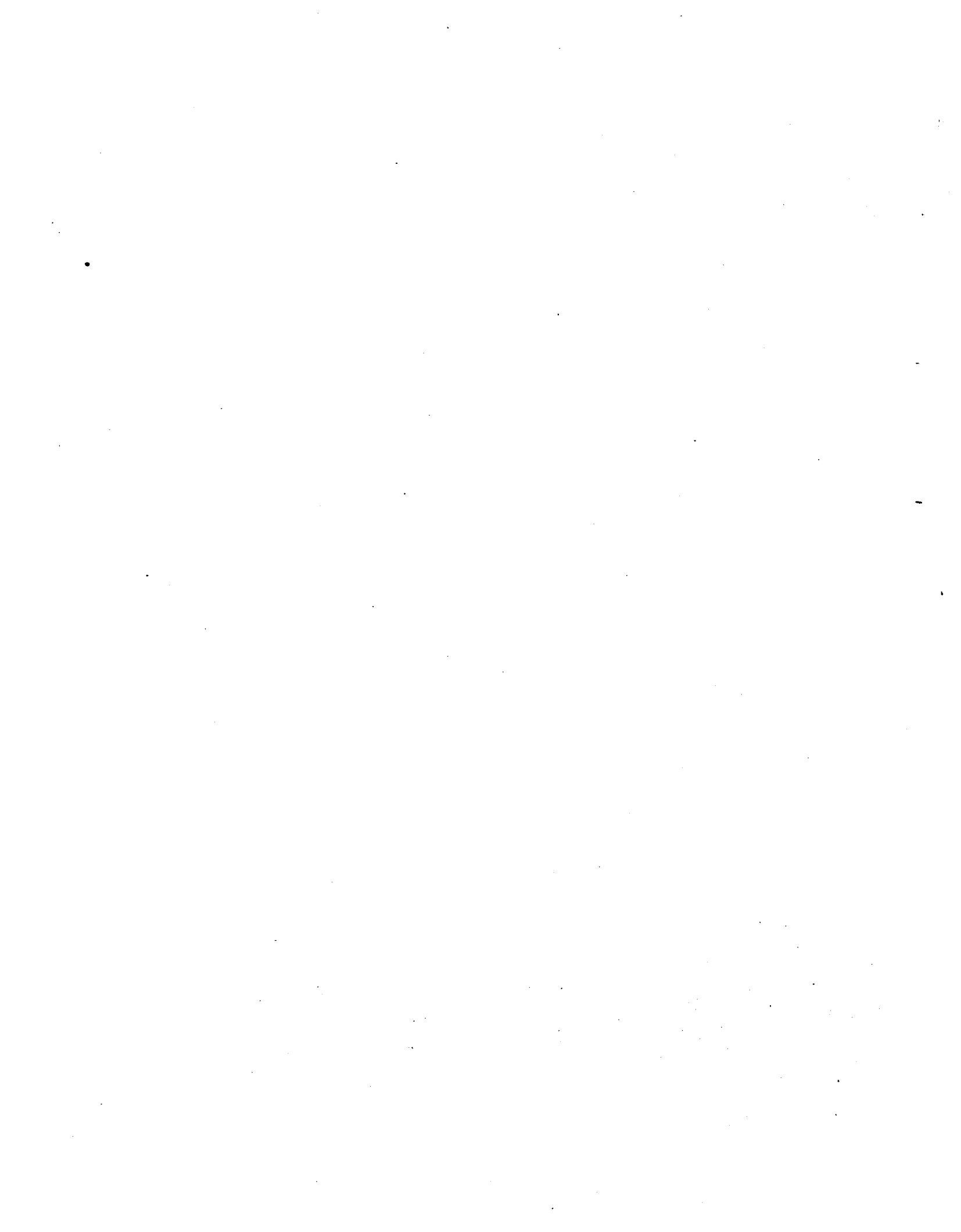
APPENDIX 2

CRITERIA AND REVIEW APPROACH DOCUMENTS (CRAD)



**Disassembly/Assembly Activities
Implementation Plan CRADs**

<u>Contents</u>	<u>Page</u>
MANAGEMENT (MG)	1
OPERATIONS (OP)	6
SAFETY ENVELOPE (SE)	11
TRAINING AND QUALIFICATION (TQ)	15



MANAGEMENT (MG)

Objective

MG-1 (CO-23) Managerial qualifications of contractor personnel, responsible for facility operations, are adequate. (CR-19)

Criteria

- 1. Managerial qualifications of Y-12 management, up to the Manager, Nuclear Operations, and the Manager, Quality Operations, meet the requirements specified in LMES policy statements, position descriptions, and performance appraisal criteria.**
- 2. Managers demonstrate an awareness and understanding of the requirements and the methods for managing identified deficiencies and issues identified by internal, DOE, and external organizations.**
- 3. Managerial personnel understand and effectively promote awareness of requirements for safe operation as defined in appropriate policies and procedures.**

Approach

Record Review:

- 1. Verify that LMES policy statements, position descriptions, and performance appraisal criteria define managerial qualifications.**
- 2. Verify that entry level requirements are established for each operations management position, including as a minimum education, experience, technical, and medical requirements.**
- 3. Determine that a record of verification of managers (above first line supervisors) meeting the specified requirements is maintained. (See Criteria #1).**

Interviews:

None

Shift Performance:

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

Objective

MG-2 (CO-24) Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsible for control of safety. (CR-11)

Criteria

1. Functions, assignments, responsibilities, and reporting relationships for operating management (up to the Manager, Nuclear Operations), and criticality safety organizations are adequately defined, understood, and implemented.
2. Functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures are defined, understood, and implemented.
3. The conditions under which mentors can be removed is documented.

Approach

Record Review:

1. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the operations supervisors and managers in Appendix VII of the Plan of Action.
2. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the criticality safety engineers, supervisors, and manager.
3. Verify that there is a list of mentors, if any, assigned as compensatory measures. Verify this list states which compensatory measure each mentor is responsible for.
4. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors used as compensatory measures.
5. Verify that there is documentation that mentors assigned to D&A meet specified qualification and experience requirements.
6. Verify that there is documentation of the conditions under which mentors can be removed.
7. Review the weekly reports of at least one mentor used as a compensatory measure; evaluate the adequacy of response to issues by line management.

Interviews:

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

Shift Performance:

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

2. Evaluate effectiveness of mentors used as compensatory measures.

Objective

MG-3 (CO-25) A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CR-6)

Criteria

1. Open findings and corrective actions are assessed to determine if their lack of closure may preclude safe operations.
2. Operations management has reevaluated internal and external assessments performed in D&A since October 1993 to determine if corrective actions were appropriate.
3. The DOE order self-assessment program is ongoing and viable.
4. The ESAMS database is used to track deficiencies and recommendations made by oversight groups, official review teams, and audit organizations, as well as the corrective actions status.

Approach

Record Review:

1. Review the operations reevaluation of internal and external assessments performed on D&A operations since October 1993.
2. Verify that 9204-2/2E operations and quality support know what open findings and corrective actions from oversight groups, audits, self-assessments, etc., are assigned to them.
3. Review the list of open findings and corrective actions to determine adequacy of status.
4. Select five findings or corrective actions closed since April 1995 and review the associated files for adequacy of evidence of closure.
5. Review the status of the self-assessment program to determine adequacy for supporting line management needs.
6. Select at least five deficiency reports made by oversight groups, official review teams, and audit organizations and verify they have been entered into ESAMS.

Interviews:

Interview the 9204-2/2E operations manager and quality support manager to assess their understanding of how issues are managed.

Shift Performance:

For the five findings or corrective actions closed (see Record Review item #4), walk down the specified actions to determine they remain in place and resolved the original deficiency.

Objective

MG-4 (CO-27) Nonconformances to applicable DOE orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

Criteria

1. Noncompliances with the 51 DOE orders of interest to the DNFSB have approved schedules for gaining compliance.
2. Actions described in the Requests for Approval (RFA) have been adequately addressed for the facility, including both site-level programmatic and facility-level programmatic and adherence-based assessments.
3. Operations managers have reviewed the compensatory and corrective actions taken to address the identified nonconformances and have verified that they remain in place.

Approach

Record Review:

1. Review a representative sample of the records of compliance reviews for the 51 DOE orders of interest to the DNFSB.
2. For those orders where noncompliances were identified, verify the existence of approved schedules for gaining compliance.
3. Review the records that document management review and verification that compensatory measures and corrective actions remain in place.

Interviews:

None

NOTE: Representatives of the Y-12 order compliance program were interviewed during the RSS MSA with acceptable results.

Shift Performance:

Select three RFAs and verify that actions described have been addressed.

Objective

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

Criteria

1. Personnel demonstrate an increased awareness and understanding of criticality safety.
2. All workers and supervisors attended the awareness sessions conducted following the September 22, 1994 event.
3. Personnel understand the safety messages communicated during the awareness sessions.

Approach

Record Review:

1. Review training records to verify worker and supervisor attendance at awareness sessions conducted following the September 22, 1994 event.
2. Review Occurrence Reporting System reports for OSR, criticality safety and radiological events; evaluate the effectiveness of corrective actions to prevent recurrence; and evaluate the timeliness of resolution.
3. Review the employee safety and health concerns program(s). Evaluate the appropriateness and timeliness of response to the employee.

NOTE: Review of records incident to operations (e.g., training and required reading) should also be used to verify the condition of the safety culture.

Interviews:

1. Select two employees (and their supervisors) who have submitted safety and health concerns since the September 22, 1994 incident. Determine the adequacy of response to the employee.
2. Interview two operators from each work group and three line managers, including front-line supervisors in each division to verify their understanding of the safety message communicated during the awareness sessions.
3. Interview manager of safety and health concern program to determine the status of the program.

NOTE: Interviews with operators and operations supervisors incident to level of knowledge and operations should also be used to verify the condition of the safety culture.

Shift Performance:

In conjunction with other functional area activities (e.g., operations drills), evaluate satisfactory establishment of a safety culture.

OPERATIONS (OP)

Objective

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

Criteria

- 1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.**
- 2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.**

Approach

Record Review:

- 1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.**
- 2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.**
- 3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.**
- 4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.**

Interviews:

None

Shift Performance:

- 1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.**
- 2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.**
- 3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.**

Objective

OP-2 (CO-19) The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12) The scope is limited to the assessment of the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

Criteria

1. Actions described in the Request for Approvals (RFA) have been adequately addressed for the facility/activity.
2. Compensatory measures identified in the RFAs shall be employed where full compliance with the conduct of operations requirements cannot be met prior to resumption.

Approach

Record Review:

1. Review the conduct of operations portions of the RFAs and any RFA status update information to verify that implementation status is in accordance with the RFAs.
2. Review the records and paperwork associated with each DOE Order 5480.19 chapter within the scope of the core objective to verify effective conduct of operations implementation.

Interviews:

Interview at least two operators in each work group and at least three line/shift managers, including front-line supervisors, in each division to assess their understanding of the conduct of operations principles, including any compensatory measures, in the performance of their duties.

Shift Performance:

1. Observe at least three simulations/evolutions and two drills to determine if the facility has effectively implemented conduct of operations requirements.
2. Observe at least three operators conducting their normal daily routines to verify they adequately demonstrate conduct of operations principles.

3. While observing simulations/evolutions, drills, and daily routines verify the compensatory measures identified in the RFAs are in place and effective.

Objective

OP-3 (CO-20) Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

Criteria

1. Personnel exhibit awareness of safety-related policies and procedures necessary for daily operations.
2. Personnel exhibit awareness of requirements for safe operation as reflected in CSAs, OSRs, and appropriate operating procedures.

Approach

Record Review:

None

NOTE: Worker training on safety, health, and environmental requirements is addressed by CO-13 and CO-16.

Interviews:

None

Shift Performance:

1. During evolutions observe that personnel comply with radiological controls and radiation work permits.
2. During evolutions observe that personnel exhibit compliance with CSAs used as procedures.
3. During evolutions observe that personnel exhibit compliance with Safety Work Permits, other related permits, and safety requirements in procedures.

Objective

OP-4 (CO-22) A routine operations drill program, including program records, has been established and implemented. (CR-9)

Criteria

1. A drill program for routine operations has been established to ensure operator readiness and knowledge of appropriate response to indications.
2. The routine drill programs at the facilities are based on a graded approach driven by the specific facility hazard categorization analysis.
3. Typical drills will have equipment failure, miscalibration, process upset, or unexpected conditions scenarios.

Approach

Record Review:

1. Review and assess the adequacy of drill procedures and drill guides for operations and quality activities in 9204-2/2E.
2. Review and assess the adequacy of program records.
3. Review facility drill programs to verify they are based on a graded approach driven by the specific facility hazard categorization analysis.
4. Review drill scenarios to verify they contain equipment failure, miscalibration, process upset, or unexpected condition scenarios.

Interviews:

Interview the managers of the drill programs for operations and quality to assess the adequacy of methods used to select drill scenarios, drill participants, and to determine the status of the program.

Shift Performance:

1. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to D&A operations.
2. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to quality operations in 9204-2/2E.

Objective

OP-5 (CO-28) An adequate start-up or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

Criteria

1. Appropriate restart programs have been developed to demonstrate that the identified processes are fully operable to perform their intended functions.
2. Verify the appropriate calibrations, preventive maintenance, and restart leak checks, etc., have been completed.
3. Restart program documents 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.

Approach

Record Review:

1. Equipment that has been in the stand-down mode is identified; equipment to be restarted is identified; and equipment to be taken out-of-service is identified.
2. For equipment to be restarted, verify that required calibrations, preventive maintenance, and restart leak checks have been completed.
3. For equipment that is to be restarted, verify that operations procedures have been reviewed and revised as necessary to make them useful.
4. Verify that training has been conducted to the intended use of the restarted equipment.
5. Verify restart programs documents the operability of the equipment that has been in the stand down mode.

Interviews:

None

Shift Performance:

1. Walk down the list of equipment that is not to be restarted and verify each piece is tagged out-of-service.
2. In conjunction with CO-7, observe dry runs of five procedures on equipment to be restarted to determine acceptable performance of equipment, procedures, and training.

SAFETY ENVELOPE (SE)

Objective

SE-1 (CO-4) There are adequate and correct safety limits for operating systems. (CR-1)

Criteria

- 1. The OSR for Building 9204-2/9204-2E is technically accurate and consistent with the physical facility configuration.**
- 2. Designated equipment and systems are present as described in the OSR.**
- 3. The OSR can be technically accomplished.**
- 4. Compliance with the OSR is verified.**

Approach

Record Review:

- 1. Review the Building 9204-2/9204-2E OSR for technical accuracy.**
- 2. Compare the Building 9204-2/9204-2E OSR against current facility drawings to verify consistency.**
- 3. Ensure surveillance requirements and LCO actions of the OSR are covered in approved procedures.**
- 4. Review surveillance records to verify surveillances are up to date and demonstrate the OSR requirements are being met.**

Interviews:

None

Shift Performance:

- 1. Walk down Building 9204-2/9204-2E and verify facility equipment and systems are present as described in the OSR.**
- 2. Observe at least three simulations/evolutions covered by the OSR to verify they can be technically accomplished and operators/managers are in compliance with the OSR.**

Objective

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

Criteria

The status of the safety systems and safety-related process system components in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs is satisfactory.

Approach

Record Review:

Review maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify safety systems and safety-related process system components have been inspected/calibrated and are within the required specification and periodicity.

Interviews:

None

Shift Performance:

- 1. Compare safety systems and safety-related process system components in the field against maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify records reflect installed components.**
- 2. Verify safety systems and safety-related process system component inspection/calibration sticker dates in the field match the dates in the inspection/calibration records.**

Objective

SE-3 (CO-11) Safety system and other instruments that monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)

Criteria

Calibration has been properly performed at the required frequency for all safety systems and safety-related process system components.

Approach

Record Review:

1. Verify all calibration/inspection requirements for safety system and safety-related process system components are incorporated into the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs.
2. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency.
3. Review records to verify standards used for calibration/inspections are acceptable.

Interviews:

None

Shift Performance:

1. Observe rounds in Building 9204-2/9204-2E to verify calibration/inspection status of safety systems and safety-related system components are being monitored.
2. Observe at least two calibration/inspections to verify they are being properly performed.

Objective

SE-4 (CO-12) All safety and safety-related utility systems are currently operational and in a satisfactory condition.

Criteria

1. Calibration has been performed at the required frequency for all safety systems. (See CO-11.)
2. Procedures are in place to provide surveillance of safety-related equipment.
3. Assess the status of the safety systems in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs. (See CO-10.)

Approach

Record Review:

1. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency. (See CO-11.)
2. Compare site/division surveillance procedures against the OSR surveillance requirements to verify they are compatible.

3. Review surveillance records to verify surveillances are current. (See CO-4.)

Interviews:

None

Shift Performance:

Walk down, to include actual or simulated operation, all safety and safety-related utility systems to verify they are currently operational and in a satisfactory condition.



Enclosure 1:

List of Deliverables.

Enclosure 2:

The Lockheed Martin Energy Services, Inc. (LMES) Readiness to Proceed Memorandum with endorsements.

Enclosure 3:

The Y-12 Site Office (YSO) self assessment for the resumption of Disassembly and Assembly (D&A) activities at the Oak Ridge Y-12 Plant.

Enclosure 4:

The Y-12 Site Office Restart Team (YSORT) assessment of the D&A activities at the Y-12 Plant.

Enclosure 5:

The LMES Readiness Assessment report for D&A.

Enclosure 6:

The Oak Ridge Operations Office (ORO) Readiness Assessment report for D&A.

Enclosure 7:

ORO Authorization to LMES to Resume Operations of the D&A Activities at the Y-12 Plant.

Enclosure 8:

YSORT Closure Validation Report for the Pre-Start Findings from the ORO Readiness Assessment for D&A.



Department of Energy

Washington, DC 20585

APR 04 1996

Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
Suite 700
625 Indiana Avenue, N.W.
Washington, D.C. 20004

Dear Mr. Chairman:

The completed items from Commitment N.4.2 called for in the Department's Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 94-4 associated with the Disassembly and Assembly mission area are enclosed. A list of the deliverables is provided as Enclosure 1 to this letter.

If you have any questions, please contact me or have your staff contact Phil Aiken of my staff at (301) 903-4513.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tom Seitz", is positioned above the typed name.

Thomas P. Seitz
Deputy Assistant Secretary for
Military Applications and
Stockpile Management
Defense Programs

8 Enclosures

cc w/enclosures:
M. Whitaker, S3.1



TRAINING AND QUALIFICATION (TQ)

Objective

TQ-1 (CO-13) Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

- 1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM):**
- 2. Compliance with the TIM schedule is current.**
- 3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.**

Approach

Records Review:

- 1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.**
- 2. Review training and qualification records to verify compliance with the TIM schedule.**
- 3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.**
- 4. Review records to determine the following:**
 - a. Content of training programs is determined by systematic analysis.**
 - b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.**
 - c. Division training staff qualification requirements have been met.**
 - d. Verification of qualification requirements leading to certification has been conducted.**
 - e. A graded approach is used to establish program content.**

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Objective

TQ-2 (CO-14) Technical qualifications of contractor personnel responsible for facility operations are adequate. (CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)
2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)
3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.
4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)
2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.
3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.
4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Objective

TQ-3 (CO-16) Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.
2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.
3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Objective

TQ-4 (CO-17) Level of knowledge of operations personnel is adequate based on reviews of examinations, exam results, selected interviews, and observation of work performance. (CR-3)

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

- 1. Review documentation to ensure examination requirements for qualification/certification have been met.**
- 2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.**
- 3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.**

Interviews:

- 1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.**
- 2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.**

Shift Performance:

- 1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.**
- 2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.**

Objective

TQ-5 (CO-18) There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

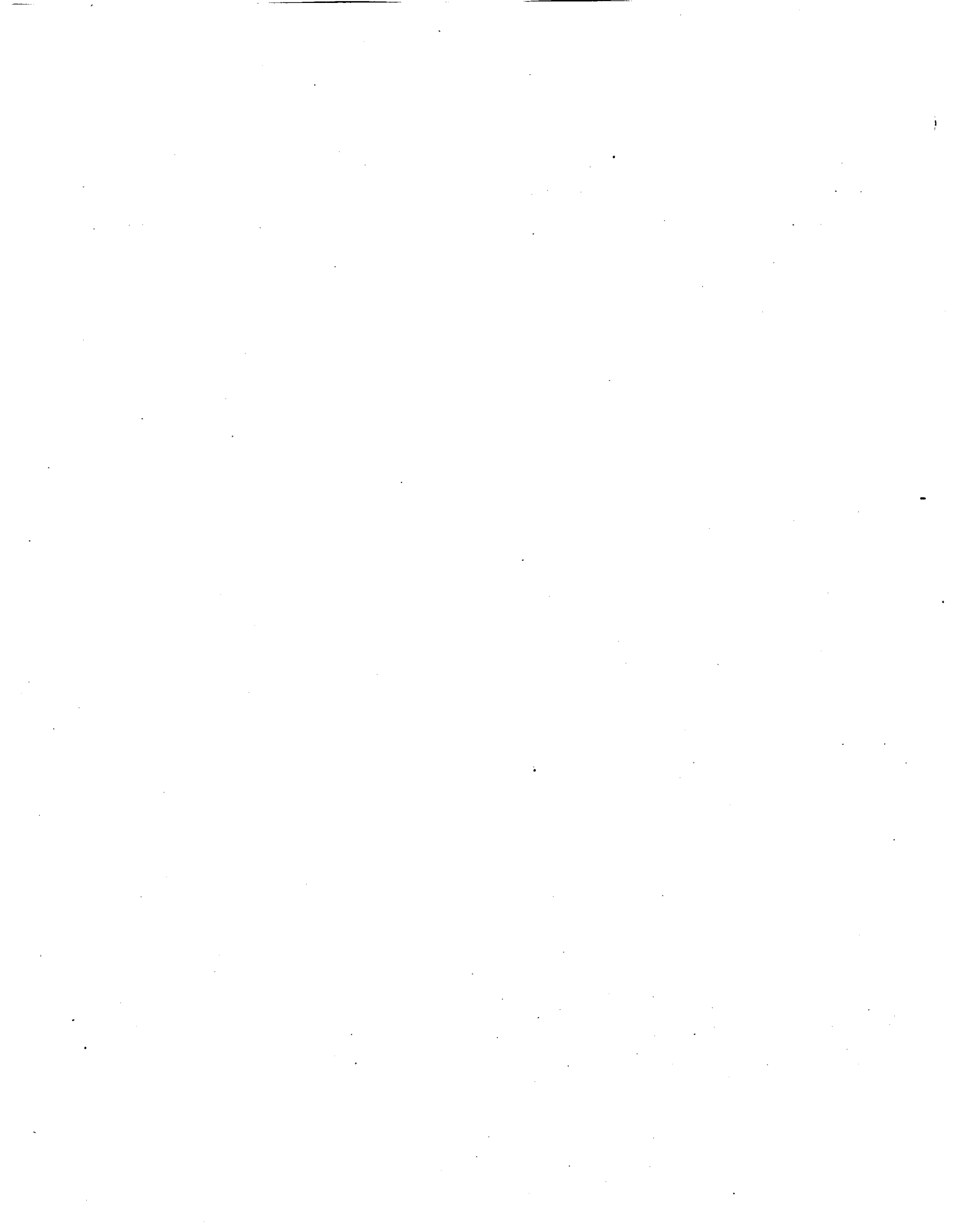
Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

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



APPENDIX 3
FINDING CLASSIFICATION CRITERIA



Appendix 3: Finding Classification Criteria

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

A. Initial Screening

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

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

B. Issue Impact

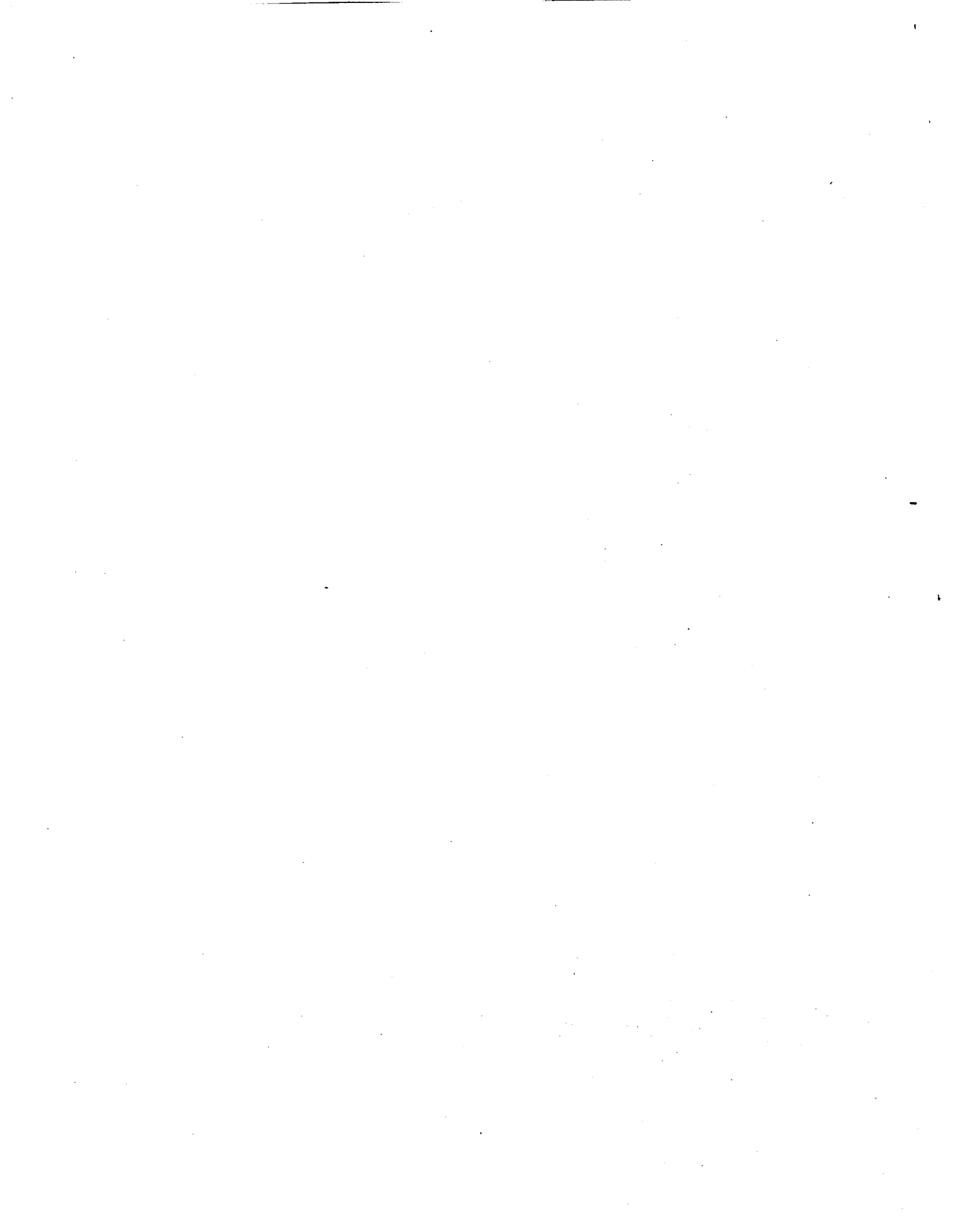
1. Does the loss of operability of the item prevent safe shutdown, or cause the loss of essential monitoring?
2. Does the loss of operability of the item require operator action in less than ten (10) minutes to prevent or mitigate the consequences of events described in the Safety Analysis?
3. Does the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

4. Does the loss of operability of the item result in a reduction of the margin of safety as described in the Safety Analysis?
5. Does the issue indicate a lack of control which can have a near term impact on the operability or functionality of safety related systems?
6. Does the issue involve a violation or potential violation of worker safety or environmental protection regulatory requirements which poses a significant danger to workers, the public, or of environmental insult or release?

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

APPENDIX 4

RA ASSESSMENT AND DEFICIENCY FORMS



RA ASSESSMENT FORM

Functional Area:	CRA Number/Title:	Date:
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Method of Appraisal (short narrative description):

Personnel contacted/position:

Records & other documents reviewed:

Evolutions/operations witnessed:

Discussion:

Conclusion:

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

RA DEFICIENCY FORM

Functional Area:	CRA Number/Title:	Date: ID #:
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Requirement:

Reference(s) (specific as to section):

Finding _____

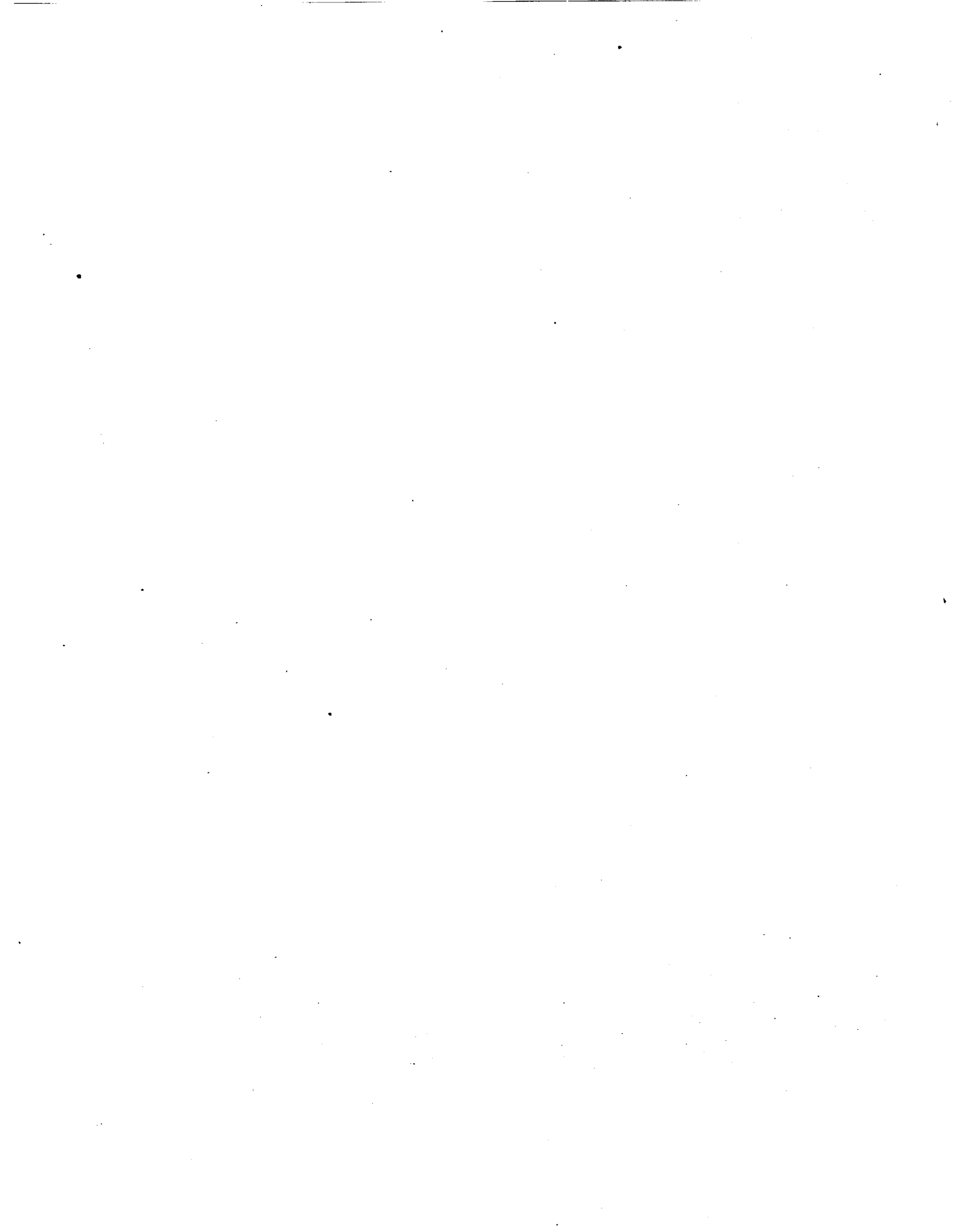
Observation: _____

Discussion:

Finding Designation: Pre-start _____ Post-Start _____	Inspector: _____
Group Leader: _____ Date: _____	Approved by: _____ RA Team Manager Date: _____

APPENDIX B

**Assessment Forms
(Form 1)**



FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Managerial qualifications of Y-12 management, up to the Manager, Nuclear Operations, and the Manager, Quality Operations, meet the requirements specified in LMES policy statements, position descriptions, and performance appraisal criteria.
2. Managers demonstrate an awareness and understanding of the requirements and the methods for managing identified deficiencies and issues identified by internal, DOE, and external organizations.
3. Managerial personnel understand and effectively promote awareness of requirements for safe operation as defined in appropriate policies and procedures.

Approach

Record Review:

1. Verify that LMES policy statements, position descriptions, and performance appraisal criteria define managerial qualifications.
2. Verify that entry level requirements are established for each operations management position, including as a minimum education, experience, technical, and medical requirements.
3. Determine that a record of verification of managers (above first line supervisors) meeting the specified requirements is maintained. (See Criteria #1.)

Interviews:

None

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996
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Shift Performance:

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

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. N. Shelton, DSO training manager
- E. A. Martin, nuclear operations trainer
- R. J. Buttram, Energy Systems human resources generalist
- D. D. Cottrell, Energy Systems compensation program manager

Records & other documents reviewed:

- Evidence Files C901, C903, and C903CS
- Performance appraisal instructions and forms
- Position description notebooks

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Evidence File Review

- a. The positions considered "responsible for facility operations" were the nuclear operations manager, the disassembly and storage organization manager, the assembly and disassembly operations manager, and the technical support manager. Based on the organization chart and actual direction of facility operations, the facility support manager, the shift manager and three subordinate supervisors, and the shift technical advisors should also have been considered "responsible for facility operations".

FIELD NOTES


RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-1 (CO-23)	Date: January 26, 1996
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- b. Letters of verification of manager's qualification did not include either the specific education and experience requirements or the title of the management position. Additionally, they made no reference to technical or medical requirements. They were dated, and were compared to approved position descriptions in effect on that date to establish the qualifications that were verified.
 - c. The Individual Development Plan Worksheet for P. R. Wasilko stated for "Educational Background" and "Work Experience" that "Resume is in C901 file". The resume was not in the C901 file. A "Summary of Professional Experience" for Mr. Wasilko was in the C903 file and included education and experience.
 - d. Position descriptions in the evidence file were incomplete and somewhat disorganized.
2. The performance appraisal instructions and forms did not define managerial qualification requirements. They did require evaluation of "competence: skills and knowledge to perform job." ES&H performance was evaluated in two categories of the appraisal.
3. Position descriptions defined managerial requirements, including education, experience, technical, and medical requirements. Position descriptions were approved for all positions in DSO, and for the manager, nuclear operations. No position descriptions were available for QO personnel.

Conclusion:

Documentation in official records demonstrates that appropriate qualification requirements to support resumption of safe operation are established for contractor personnel, and are met by incumbent managers. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by:  RA Team Manager
	Date: 2/7/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Functions, assignments, responsibilities, and reporting relationships for operating management (up to the Manager, Nuclear Operations), and criticality safety organizations are adequately defined, understood, and implemented.
2. Functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors assigned as compensatory measures are defined, understood, and implemented.
3. The conditions under which mentors can be removed is documented.

Approach

Record Review:

1. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the operations supervisors and managers in Appendix VI of the Plan of Action.
2. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities and reporting relationships of the criticality safety engineers, supervisors, and manager.
3. Verify that there is a list of mentors, if any, assigned as compensatory measures. Verify this list states which compensatory measure each mentor is responsible for.
4. Evaluate the adequacy of documentation that defines the functions, assignments, responsibilities, reporting relationships, specific qualifications, and experience of mentors used as compensatory measures.
5. Verify that there is documentation that mentors assigned to D&A meet specified qualification and experience requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996
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6. Verify that there is documentation of the conditions under which mentors can be removed.
7. Review the weekly reports of at least one mentor used as a compensatory measure; evaluate the adequacy of response to issues by line management.

Interviews:

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

Shift Performance:

1. While observing evolutions, verify that the specified functions, assignments, responsibilities, and reporting relationships are properly implemented.
2. Evaluate effectiveness of mentors used as compensatory measures.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. E. Hester, supervisor, quality material and equipment evaluations department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- W. F. Mohr, mentor
- T. J. Trapuzzano, mentor
- M. E. Wagoner, mentor
- D. M. Nabors, shift manager
- R. J. Shelton, DSO training manager
- J. E. Radle, D&A manager
- R. K. Roosa, manager, nuclear operations

Records & other documents reviewed:

- Evidence File C902
- Y70-150, "Nuclear Criticality Safety Program," Rev. Date 8/25/95
- Y70-160, "Criticality Safety Approval System," Rev. Date 8/23/95
- Y/AD-627, "Mentor Program Description for Y-12 Resumption," dated 3/27/95

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996
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- Y/AD-627, Rev. 1, Draft, "Mentor Program Description for Y-12 Resumption"
- Y-12 Quality Organization Mission and Roles memo from A. K. Zava, approved by T. R. Butz, dated May 2, 1995

Evolutions/operations witnessed:

- Radiography
- Criticality Accident Alarm System surveillance
- Quarterly surveillance test
- C-5 disassembly
- Facility walkdowns

Discussion:

1. Evidence File C902 was not complete. There was no evidence to show that the functions, assignments, responsibilities, reporting relationships, and qualification of the mentors assigned as compensatory measures were adequately defined, understood, and implemented. After discussion with the DSO resumption manager, it was determined that another evidence file (C1301) addressed mentor compensatory measures. File C1301 was reviewed, and it was determined that Y/AD-627, "Mentor Program Description for Y-12 Resumption," was under revision and could not be used to identify duties, responsibilities, authorities, and qualifications. The evidence file did, however, contain the procedures for which mentor coverage was required as compensatory measures as related to conduct of operations.
2. There was also no evidence to show that functions, assignments, responsibilities, and reporting relationships for operating management were adequately defined, understood, and implemented. Further discussion with the DSO resumption manager indicated that there may have been evidence of these requirements elsewhere. However, as of January 16, 1996, no other information was available. The evidence was limited to the operations management responsible for the D&A functions at Y-12. This included only four senior managers: operations, technical, DSO manager, and the manager, nuclear operations.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996
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During facility walk downs and observed evolutions, the reporting relationships within DSO and the Quality Organization (QO) appeared effective. Further, the quality supervisor, when he encountered procedural difficulties during radiography, ensured that the operations manager was aware.

The only area of concern is with the duties, responsibilities, and reporting relationships of the mentors.

3. The draft revision to Y/AD-627, "Mentor Program Description for Y-12 Resumption," was reviewed and questions were developed to be discussed with mentors assigned to D&A functions. This effort was centered around interfacing responsibilities with the operations organization. Interviews with the quality radiography supervisor and two radiographers indicated that some confusion existed with respect to the reason that mentors were required. The supervisor and technicians said they were aware of the capabilities of the mentors to stop work and/or make suggestions. However, they could not explain the Strategy III usage as compensatory measures. However, the supervisor did know which evolutions required a Strategy III mentor.
4. Job descriptions/qualifications for D&A operations personnel contained the responsibilities, authorities, qualifications, and training requirements for DSO staff from technician to the operations and technical managers. All of the descriptions were reviewed and approved by DSO management. The job descriptions for the DSO manager, and the manager, nuclear operations were maintained by the human resources organization for LMES.
5. The QO job descriptions are not formalized and organized in an easy to obtain manner. There was confusion over who was responsible for maintaining and updating the position duties, responsibilities, and authorities matrix for QO. This function resided with the training organization in DSO, which was responsible for meeting the requirements of the Training Implementation Matrix. However, the QO training organization did not have the responsibility. A review of the Quality Organization mission, roles, and organization structure was performed, and it was not specific to the managers and supervisors within the Quality Organization. This document was written on an organizational level and, therefore, did not address specific individuals by title or category.
6. The current and draft Mentor Program Description did not contain measurable or achievable goals to be obtained in order to remove mentors as compensatory measures. The current guidance revolved around satisfactory implementation of conduct of operations, without defining what that was.

FIELD NOTES


RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-2 (CO-24)	Date: January 26, 1996
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7. Communications between the Quality Organization and the Operations Organization were not effective. The following are examples of problems noted during the assessment period:
- a. The requirement to gain DOE-ORO concurrence for product procedure changes related to Special Package procedures was not communicated to the Quality Organization. This was discovered during the radiography evolution that was observed.
 - b. The listing of the D&A procedures that require strategy III mentors was developed. However, the Quality Organization was not on distribution, although some of their procedures were involved.
8. During the C5 disassembly observation, it was determined that the mentors assigned as compensatory measures were not respirator qualified. This lack of qualification precluded them from adequately performing their functions in the walk-in hood, because it was established as an airborne contamination area. This is documented in Form II, RA-MG-2-3.

Conclusion:

After correction of the prestart findings associated with this area, the functions, assignment, responsibilities, and reporting relationships will be adequate to support resumption of operations associated with C5 disassembly and the electron beam welders, with mentors in place.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by:  RA Team Manager
	Date: 2/7/96

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Open findings and corrective actions are assessed to determine if their lack of closure may preclude safe operations.
2. Operations management has reevaluated internal and external assessments performed in D&A since October 1993 to determine if corrective actions were appropriate.
3. The DOE order self-assessment program is ongoing and viable.
4. The ESAMS database is used to track deficiencies and recommendations made by oversight groups, official review teams, and audit organizations, as well as the corrective actions status.

Approach

Record Review:

1. Review the operations reevaluation of internal and external assessments performed on D&A operations since October 1993.
2. Verify that 9204-2/2E operations and quality support know what open findings and corrective actions from oversight groups, audits, self-assessments, etc., are assigned to them.
3. Review the list of open findings and corrective actions to determine adequacy of status.
4. Select five findings or corrective actions closed since April 1995 and review the associated files for adequacy of evidence of closure.
5. Review the status of the self-assessment program to determine adequacy for supporting line management needs.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996
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6. Select at least five deficiency reports made by oversight groups, official review teams, and audit organizations and verify they have been entered into ESAMS.

Interviews:

Interview the 9204-2/2E operations manager and quality support manager to assess their understanding of how issues are managed.

Shift Performance:

For the five findings or corrective actions closed (see Record Review item #4), walk down the specified actions to determine they remain in place and resolved the original deficiency.

Personnel contacted/position:

- L. E. Pender, resumption staff
- P. L. Johnson, D&A QO ESAMS staff
- W. L. Estep, quality assurance and issue management
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C1001, C1002, C1003, and C1004
- List of open findings and corrective actions
- ESAMS files of findings and corrective actions for D&A
- Operations reevaluation of assessments performed on D&A

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996
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Discussion:

1. Evidence File Review
 - a. A list of assessments for the last three years, and older if corrective actions remained open, was in C1001.
 - b. The operations reevaluation of the adequacy of corrective actions found many of the corrective actions inadequate or unsatisfactory, but the action plan for D&A resumption provided satisfactory corrective action for most of those that related to D&A.
2. The reevaluation of assessment findings and corrective actions used ESAMS as the starting point. It is possible that some assessment findings, and particularly some CSA infractions identified by D&A or other internal employees, did not get recorded in ESAMS, and thus were not being reevaluated as part of the resumption activity. A plan to go back to assessment organizations to ensure that all findings related to D&A are pursued and reevaluated was being developed. This issue had been previously identified by YSORT (YSORT 3004).
3. Initial review of ESAMS records showed five of seven items properly closed. The other two did not have all required documents to demonstrate closure. For one of the two items, the closure documents did not fully address the finding (10026018).
4. Interviews indicated that not all deficiencies and corrective actions were entered into ESAMS, and some were not tracked in a formal system. Issues identified during some management walkarounds were tracked informally.
5. DSO had developed an internal assessment program with monthly focus areas, check lists, and reports leading to tracking of deficiencies and corrective actions in ESAMS. The program is planned for implementation in January 1996.


FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-25)	Date: January 26, 1996
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Conclusion:

Some problems were noted with deficiencies being tracked outside of ESAMS and with ESAMS items being closed when the corrective action was not complete. Overall, activities in this area are sufficient to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-27 Nonconformances to applicable DOE orders have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (CR-7)

Criteria

1. Noncompliances with the 51 DOE orders of interest to the DNFSB have approved schedules for gaining compliance.
2. Actions described in the Requests for Approval (RFA) have been adequately addressed for the facility, including both site-level programmatic and facility-level programmatic and adherence-based assessments.
3. Operations managers have reviewed the compensatory and corrective actions taken to address the identified nonconformances and have verified that they remain in place.

Approach

Record Review:

1. Review a representative sample of the records of compliance reviews for the 51 DOE orders of interest to the DNFSB.
2. For those orders where noncompliances were identified, verify the existence of approved schedules for gaining compliance.
3. Review the records that document management review and verification that compensatory measures and corrective actions remain in place.

Interviews:

None

NOTE: Representatives of the Y-12 order compliance program were interviewed during the RSS MSA with acceptable results.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996
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Shift Performance:

Select three RFAs and verify that actions described have been addressed.

Personnel contacted/position:

- G. A. Atwood, compliance manager
- J. T. Fisher, DSO resumption manager
- W. F. Mohr, mentor
- M. E. Wagoner, mentor
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C1005 and C1006
- Request for Approvals (RFA)

CSA-2A	CSA-4	CSA-17	CSA-29A
CSA-30B	CSA-31A	CSA-32A	CSA-34B
CSA-37B	CSA-39B	CSA-40A	CSA-42B
CSA-45C	CSA-46A	CSA-47A	CSA-48A
CSA-50B	CSA-51	CSA-54A	CSA-60A
CSA-67B	CSA-68	CSA-71	CSA-80
CSA-82A	CSA-84	CSA-85B	CSA-87
CSA-88A	CSA-90	CSA-91	CSA-95
CSA-102A	CSA-103A	CSA-130A	CSA-131
CSA-132	CSA-135	CS-136	EX-5
EX-6	EX-7A	STCS-20	CSA-163
CSA-160			

- Quarterly Compensatory Measure Walkdown Reports dated 9/28/95, 10/11/95, and 1/9/96
- Compensatory Measure Assessment Program, dated 5/14/95
- 9204-2E Compensatory Measure Log Book

Evolutions/operations witnessed:

- Walked down compensatory measures for C-B2E-001, C-B2E-002, C-160, CSA-80B, CSA-137B

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996
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- Observed radiography of a mock-up assembly
- Observed criticality accident alarm system quarterly surveillance

Discussion:

1. The review of the RFAs associated with D&A activities was completed. From this review, a list of 10 RFAs was chosen to validate compensatory measures. Further, the reviewer developed a list of activities that were identified as being in place to ensure activities were conducted to meet the intent of the Order Requirements, e.g., pre-job briefings, increased supervisor reviews, and PDC training. These were not identified as compensatory measures in the RFAs.
2. The Y-12 compliance manager was contacted and requested to send the DOE-ORO approval documentation of 17 selected RFAs. The 17 selected RFAs were checked against ESAMS for schedule status. Some minor schedule deficiencies were identified. However, this was identified during the Management Self Assessment (MSA) (Observation MG-01). The only other deficiency identified revolved around which revision of the 17 selected RFAs was currently approved by DOE-ORO. Through conversations with the Y-12 compliance manager, it was determined that five of the sample RFAs were not approved by DOE-ORO. Further discussion and review of correspondence between the vice president of defense and manufacturing for LMES and the DOE-ORO office manager indicated that one of the five was identified as being required to support of resumption.
3. The compensatory measures log for D&A operations was reviewed, and two mentors and the shift manager were interviewed concerning the current status of required compensatory measures. Compensatory measures related to three RFAs were verified to be in place, and two compensatory measures related to other identified deficiencies had been audited on January 9, 1996, but were no longer required at the time of this review. Discussions related to periodic review of compensatory measures indicated that quarterly reviews were completed by the DSO mentors. These walkdowns were not accomplished with DSO management. However, the results were forwarded to DSO management for review and maintained in the 9204-2E clerk's office. The last three quarterly walkdowns were completed as required.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 26, 1996
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Conclusion:

The actions taken for nonconformances to applicable DOE orders are adequately identified and scheduled and, upon receiving formal approval by DOE-ORO for those applicable to D&A operations, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by: <u>J. P. Flynn</u> Date: 2/7/96 RA Team Manager
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-29 A program is established to promote a site-wide safety culture. (CR-14)

Criteria

1. Personnel demonstrate an increased awareness and understanding of criticality safety.
2. All workers and supervisors attended the awareness sessions conducted following the September 22, 1994 event.
3. Personnel understand the safety messages communicated during the awareness sessions.

Approach

Record Review:

1. Review training records to verify worker and supervisor attendance at awareness sessions conducted following the September 22, 1994 event.
2. Review Occurrence Reporting System reports for OSR, criticality safety and radiological events; evaluate the effectiveness of corrective actions to prevent recurrence; and evaluate the timeliness of resolution.
3. Review the employee safety and health concerns program(s). Evaluate the appropriateness and timeliness of response to the employee.

NOTE: Review of records incident to operations (e.g., training and required reading) should also be used to verify the condition of the safety culture.

Interviews:

1. Select two employees (and their supervisors) who have submitted safety and health concerns since the September 22, 1994 incident. Determine the adequacy of response to the employee.
2. Interview two operators from each work group and three line managers, including front-line supervisors in each division to verify their understanding of the safety message communicated during the awareness sessions.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996
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3. Interview manager of safety and health concern program to determine the status of the program.

NOTE: Interviews with operators and operations supervisors incident to level of knowledge and operations should also be used to verify the condition of the safety culture.

Shift Performance:

In conjunction with other functional area activities (e.g., operations drills), evaluate satisfactory establishment of a safety culture.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- R. E. Schabot, Jr., Y-12 occurrence reporting manager
- C. M. Jones, Y-12 occurrence reporting staff
- M. A. McKinney, Y-12 industrial safety manager and employee concerns program manager
- S. S. Wilson, Y-12 employee concerns program staff
- J. S. Neal, DSO shift technical advisor
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, shift manager
- M. N. Wilkerson, assemblyperson
- G. L. Gamble, assemblyperson
- D. F. Brummitt, welder
- S. M. Collier, assemblyperson
- G. W. Poole, assemblyperson
- B. L. Witt, QO alternate supervisor
- E. J. Walker, mechanical/physical properties technician
- K. F. Kesterson, supervisor materials testing lab
- M. K. Waters, radiographer
- R. W. Buchanan, inspector, dimensional inspection
- P. R. Wasilko, DSO manager
- J. E. Radle, D&A manager

Records & other documents reviewed:

- Evidence Files C701, C706, C707, and C1207
- Attendance records for sessions on awareness of safe operating requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996
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- Occurrence Reporting System records
- Employee Concerns Program records

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Reviews of evidence files identified as containing information on culture changes resulted in the following:
 - a. One file indicated that Tom Fisher had the completed checklists used to interview employees to determine changes in the safety culture. Mr. Fisher did not have the records but thought that R. T. Ford had them. The records were found and were satisfactory.
 - b. The survey of employees regarding the Post-CSA(9/22/94)-incident briefing indicated that the briefing was understood and that most individuals acknowledge the need for change to achieve acceptable safe operation. The specific changes were not described.
2. The records of attendance at sessions on awareness of safe operating requirements showed that all D&A employees had attended. Records also documented that the 27 Quality Organization (QO) personnel who support D&A attended the sessions on awareness of safe operating requirements conducted following the September 22, 1994, event.
3. The record of the assessment of the effectiveness of management in promoting awareness of safe operations requirements consisted of a statement that the lesson plan was examined and attendance verified. There was no comment about the adequacy of the lesson plan, and the attendance was recorded as "absentees as low as reasonably achievable". The lesson plan was in the file and consisted of a series of overhead slides that could form an appropriate promotion if well-presented.
4. Occurrence reporting records indicated that reportable occurrences were properly investigated, resolved, and reported, but final resolution was not timely. Of the four records of D&A occurrence reports sampled, all were open. Two had not been closed after periods well in excess of the 45-day due date (~five months) for resolution, with no 10-day update of delay justification and expected date for resolution.

FIELD NOTES

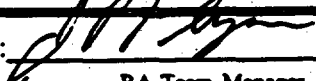
RA ASSESSMENT FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 26, 1996
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5. Employee concerns program records showed that employee concerns were formally resolved. The majority were resolved within the 30-day guideline, but several were not resolved after 90 days. Employees sampled were satisfied with the resolution of their concerns.
6. Interviews determined that D&A employees retained the basic safety message communicated during the awareness sessions following the September 22, 1994, event, and understood the changes that were being made to implement that message. Supervisors, assemblypersons, and technicians stated that communications had improved and procedures were better, if sometimes unnecessarily detailed. However, the general knowledge of the September 22, 1994, event was narrow and limited, and this limited the understanding of the need for change. Essentially all hourly workers and first-line supervisors recall only the improper response to the question about the position of containers and a low level criticality safety violation. Other process deficiencies that led to the situation were not recalled or linked to subsequent improvement activities.
7. Interviews with QO employees also determined that they retained the basic safety message communicated during the awareness sessions following the September 22, 1994, event, and understand the changes being made. Again, the general knowledge of the event was limited, leading to a sense that not much change was needed.
8. The general absence of safety, conduct of operations, and performance deficiencies during observations of drills and evolutions indicated that the principles of an appropriate safety culture were in place in DSO and QO.

Conclusion:

Knowledge and understanding of the elements of a proper safety culture demonstrated during interviews, and operations conducted with rigor, discipline, and appropriate supervisory involvement demonstrate that a program to promote an organization-wide safety culture is working in the D&A organization. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. J. Hummer R. D. Shaffer	Approved by:  Date: 2/7/96 RA Team Manager
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Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Criticality Safety Approvals (CSA) and operating procedures are technically accurate, consistent with each other, and incorporate appropriate safety limits.
2. A viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Approach

Record Review:

1. Review the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs.
2. Compare each operating procedure with its associated CSA to verify they are consistent with each other.
3. Compare each operating procedure with its applicable OSR to verify it incorporates appropriate safety limits.
4. Review site and/or divisional procedure(s) to verify a viable system exists for the control of the issuance and use of procedure revisions by the field and by the training organization.

Interviews:

None

Shift Performance:

1. Walk down each CSA to verify the conditions in the field match the conditions required in the CSA.

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2. Walk down the five latest procedure revisions through the approval, issuance, training, and use process to verify the procedure revisions system works correctly in a timely manner and is viable.
3. Observe at least three simulations/evolutions to verify personnel are using the latest procedures, and the procedures are adequate and correct.

Personnel contacted/position:

- J. T. Fisher, DSO resumption manager
- D. F. Turner, D&A procedure coordinator
- R. E. Hester, supervisor, quality material and equipment evaluations department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- M. L. Spears, DSO procedures coordinator
- J. S. Murrill, DSO procedures manager
- N. Zerby, Quality Organization procedures coordinator
- K. J. Carroll, NCSD department superintendent
- G. D. Ellis, NCSD resumption coordinator
- R. D. Robinson, NCSD group leader
- D. A. Tollefson, NCSD engineer

Records & other documents reviewed:

- Evidence Files C101, C101CS, C103, C104, C104Q, C105, C015A, C105CSD, C105CSDA, C105CSQ, C105DI, C105DS, C105CSME, C105ML, C105PT, C106, C106CS, C106DI, C106DS, C106ME, C107, C116, C117DI, C117DS, C117ME, C118DI, C118DS, C118ME, C119, C120DS, C120ME, CL101-1, CL101-2, CL101Q-1, CL105-1, CL113-1, Y10-135, CL203-1
- Y/OA-6247, "Disassembly/Assembly Procedures"
- Copies of controlled procedures in 9204-2E document management center
- Radiography procedure
- CSA B2E-04, B2E-12, DI-B2E-100, PT-RAD-200
- Y50-01-B2-011, "D-38 Electropolish Rinse and Disposal, 9204-2E"
- Documentation for revision of Y50-55-PT-374, "Operation of 9MeV Linac 9204-2E"

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- Procedure Y10-102, "Technical Procedure Process Control"
- Procedure Y10-189, "Document Control"
- Procedure Y10-103, "Writer's Guide"
- Procedure 60-WP-023, "Product Procedures"
- Procedure Y50-01-B2-028, "Uranium Assay Verification Using Canberra Instrumentation (U)"
- Procedure Y50-53-SO-031, "Surveillance of Criticality Accident Alarm System for Building 9204-2E"
- Y/TS-1314, "Operational Safety Requirements for Buildings 9204-2 and 9204-2E Material Access Area"
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- Procedure 70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low-Level Contaminated Combustible and Non Combustible Waste"
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"
- CSA B2E-104

Evolutions/operations witnessed:

- See OP-2 for evolutions

Discussion:

1. Evidence File Review

- a. Three product procedures and 16 technical procedures did not incorporate CSA limits and conditions.
- b. The list of procedures in Y/OA-6247 was compared to the list in evidence file C101, latest revision dated 12/1/95. The following discrepancies were noted:

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- f. Deficiencies were noted in evidence files CL101-1 and CL101-2. CL101-1 listed all D&A (except Quality) procedures and categorized them as technical or administrative. CL101-2 used Y10-135 (3/31/95) as a basis to evaluate technical procedures (not administrative) for USQD. Examples of noted deficiencies were as follows:
- (1) The "current" procedure listed in each of these two evidence files was different. Furthermore, differences existed between these two lists and those supplied the RA team as "current" (see paragraph 1.b for specifics).
 - (2) Procedure Y70-01-150, "General Nuclear Criticality Safety Requirements," was categorized as an administrative procedure in CL101-1. Therefore, changes to this procedure did not require a USQD per Y10-135.
 - (3) Procedure Y70-01-004, "Annual Surveillance of Fissile Material Activities," was changed from administrative to technical in CL101-1. However, this procedure did not appear on the other "current" procedure lists.
2. The controlled copies of procedures in the Building 9204-2E document management center were reviewed against the requirements of procedure Y10-189. The following discrepancies were identified for plant procedures:
- a. The spines of the books of plant procedures were red stamped "Controlled Copy," but most individual procedures were not stamped.
 - b. Several procedures were stamped "Controlled Copy," but unique document identification numbers were not assigned.
 - c. The "Controlled Copy" stamp was being applied to the books by the document management center coordinator, rather than the releasing organization.
3. Plan of Action prerequisite PR-1, required that all procedures identified as required for operation within the next 12 months be reviewed, corrected, validated, and the most recent revision located in the workplace. The procedure used for one evolution, Y70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low-Level Contaminated Combustible and Noncombustible Waste," revision date October 19, 1995, did not meet the prerequisite criteria. It was not contained on the list of procedures required for restart, dated January 19, 1996. Also, contrary to the requirements of Y10-102, Section F, it was not classified in terms of "use category."

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4. During the pre-job brief for the part marking evolution, the personnel involved became confused about the two product engineering transmittals (PET) to procedure 00-Y-169. PET revision 1, dated January 12, 1996, stated that the attached procedure was extensively revised. PET revision 2, dated January 16, 1996, contained the same sentence and an additional sentence that stated: "Revision 2 - changes effective date of document." D&A personnel were unsure if revision 2 also extensively revised the procedure. The supervisor delayed the evolution until he could confirm that it did not. This is an example of the problems caused by two procedure control systems, Y-10-102 for operating procedures and 60-WP-023 for product procedures.

On January 24, the DSO operations procedures coordinator (OPC) stated that revisions to the affected product procedures followed procedure Y10-102 requirements, but immediate intent and non-intent changes did not follow procedure 60-WP-023 requirements. Procedure 60-WP-023 required that all changes to the product procedures be coordinated with the design agency and transmitted by PETs, rather than pen-and-ink with revision bars. Procedure Y10-102 did not require this coordination.
5. The computer database for product procedures and VTX for operations procedures were accessed. The systems enabled operating personnel to verify they had the most current revisions, but the method was cumbersome and did not include plant-level or other division procedures. For example, there were a limited number of people who could access the classified database for product procedures to determine current revisions. The shift manager had to ensure availability of these people. Then the shift manager or supervisor had to access VTX to verify the current revision for any department or division operating procedures.

The method of verifying current revision of procedures by the Quality Organization was manual. They did not rely on a database system. In addition, the Quality Organization did not follow Y10-189 requirements for controlled procedure use (see paragraph 10). Although the Quality procedures observed in the field during this assessment were the current revision, there was great potential for personnel to use procedures that are not up to date.
6. Under the procedure control system for Building 9204-2E, working copies were supposed to be good for seven days. Five working copies of DSO procedures had been issued for 14 days and not returned or reverified.
7. During observation of electron beam welder operation, the following were noted:
 - a. The procedure modification log contained an entry that procedure modification request PMR-B2-96-002, dated January 16, 1996, had been entered. However, when the supervisor checked VTX to confirm the procedure was up to date, the effective date of the change was listed as January 17, 1996. The procedures coordinator determined that

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the modification request had been written on January 16, 1996, but submitted with an effective date of January 17, 1996. The supervisor directed that the modification log entry and all changes under PMR-B2-96-002 be changed and initialled in the working copy to reflect an effective date of January 17, 1996.

- b. PMR-B2-96-001, effective January 13, 1996, had been entered in the procedure in red ink. The changes were unreadable in the working copy used by the supervisor during electron beam welder operations.
8. Procedure Y50-53-SO-031 did not contain the requirements of OSR Y/TS-1314 applicable to CAAS surveillance testing. Although the OSR was referenced in the procedure, specific requirements and steps relating to Limiting Conditions of Operation (LCO) were not in the procedure. The specific OSR was 3.1.2, which included time limits for detector and alarm signal inoperability and the actions necessary to address a deficient condition.
 9. An immediate non-intent change was made to Y-50-55-PT-374 on January 18, 1996. On January 22, 1996, the PMR and change package were reviewed with the OPC. The requirements of Y10-102 were being complied with in the appropriate time frame.
 10. The document control process for procedures was also reviewed with the QO OPC. Several requirements of procedure Y10-189 were not being complied with, e.g., controlled copy stamp with unique identifier on each procedure, designated document management center, distribution lists, and status records.
 11. During the review of the engineering analysis for five CSAs to verify all technical requirements have been included in the CSAs, the following were noted:
 - a. The supporting CSA calculations existed for all five CSAs, were in a controlled file, and were adequately documented.
 - b. After discussions with knowledgeable engineers, it was determined that all engineering analysis technical requirements were satisfactorily included in the respective CSAs. However, the "old" format did not require a conclusion/summary section for the analysis. This made the comparison of the technical requirements with the corresponding CSAs difficult and time consuming without the presence of an experienced NCS engineer to explain the relationships. Although no firm date has been established, plans are currently underway to upgrade the CSA process. Included in the upgrade will be the addition of a conclusion/summary section in all "new" CSA analyses to capture and clarify the technical requirements resulting from the analyses.

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12. YSORT related findings included 3009.01, 3026.01, 3026.02, 3026.03, 3026.04, 3031.01, 3031.02, and 3031.03 and were not repeated as findings during this assessment. Findings written as part of this assessment involved deficiencies not enveloped by the YSORT findings (e.g., Quality Organization document control system), or where this team believed additional or more comprehensive corrective actions were required.

Conclusion:

Numerous problems exist in the control and revision of procedures, including incorporation of CSA limits and OSR requirements. The procedure system is fragmented and in a continual state of change. The governing procedure, Y10-102, had five change directives as of May 1995, was extensively revised in September 1995, and was undergoing a major revision during this assessment. The document control program, procedure Y10-189, generally provides adequate guidance for control of procedures. However, not all of the organizations supporting D&A resumption were complying with the requirements of this procedure. This assessment reviewed the procedure programs associated with the Disassembly and Storage and Quality Organizations and, to a lesser extent, Plant and Product Engineering. The problems identified in DSO were not programmatic, and once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted. The other organizations should consider more extensive corrective actions to achieve programmatic compliance and consistency with all affected site organizations.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: <u>J. P. Flynn</u> RA Team Manager Date: 2/7/96
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Functional Area: Operations (OP)	CRA Number/Title: OP-2 (CO-19)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-19 The implementation status of DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities," is adequate for operations. (CR-12) The scope is limited to the assessment of the following chapters of DOE Order 5480.19:

Chapter I.	Operations Organization and Administration
Chapter II.	Shift Routines and Operating Practices
Chapter V.	Control of On-the-Job Training
Chapter VI.	Investigation of Abnormal Events
Chapter VIII.	Control of Equipment and System Status
Chapter XIV.	Required Reading
Chapter XV.	Timely Orders to Operators
Chapter XVI.	Operating Procedures
Chapter XVII.	Operator Aid Postings

Criteria

1. Actions described in the Request for Approvals (RFA) have been adequately addressed for the facility/activity.
2. Compensatory measures identified in the RFAs shall be employed where full compliance with the conduct of operations requirements cannot be met prior to resumption.

Approach

Record Review:

1. Review the conduct of operations portions of the RFAs and any RFA status update information to verify that implementation status is in accordance with the RFAs.
2. Review the records and paperwork associated with each DOE Order 5480.19 chapter within the scope of the core objective to verify effective conduct of operations implementation.

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Interviews:

Interview at least two operators in each work group and at least three line/shift managers, including front-line supervisors, in each division to assess their understanding of the conduct of operations principles, including any compensatory measures, in the performance of their duties.

Shift Performance:

1. Observe at least three simulations/evolutions and two drills to determine if the facility has effectively implemented conduct of operations requirements.
2. Observe at least three operators conducting their normal daily routines to verify they adequately demonstrate conduct of operations principles.
3. While observing simulations/evolutions, drills, and daily routines verify the compensatory measures identified in the RFAs are in place and effective.

Personnel contacted/position:

- R. K. Roosa, manager, nuclear operations
- E. R. Williams, Jr., assemblyperson
- E. E. Howard, assemblyperson
- M. W. Woody, assemblyperson
- C. Tate, Jr., assemblyperson
- V. K. Chandler, material controller
- W. B. Stephens, material clerk
- R. J. Collins, Jr., nuclear materials management supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, shift manager
- J. E. Radle, D&A department manager
- P. R. Wasilko, DSO manager
- J. V. Ledbetter, disassembly supervisor
- R. L. Smith, special production supervisor
- G. L. Gamble, assemblyperson
- T. J. Trapuzzano, mentor
- C. C. Turpin, assemblyperson
- D. M. Reichert, radiological controls technician
- W. F. Mohr, mentor
- C. C. Blankenship, dimensional inspection supervisor
- R. S. Hood, dimensional inspection inspector

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- M. E. Wagoner, Quality Organization mentor
- C. M. Cook, process engineer
- D. F. Brummitt, welder
- D. F. Turner, procedures coordinator
- M. N. Wilkerson Jr., assemblyperson
- R. L. Smith, special production supervisor
- R. E. Hester, supervisor, quality material and equipment evaluation department
- M. K. Waters, radiographer
- B. G. Elkins, radiographer
- K. H. Reynolds, nuclear criticality safety representative

Records & other documents reviewed:

- Evidence Files C601, C601Q, C602, C602Q, C603, C603Q, C6019, and C1203
- Y-12 Nuclear Operations Conduct of Operations Manual
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"
- Procedure Y70-01-B2-010, "Handling Suspected or Known Enriched Uranium Low Level Contaminated Combustible and Noncombustible Waste"
- Procedure Y10-01-302, "Pre-Job Briefing"
- CSA B2E-12, "Container Loading Limits"
- CSA B2E-14, "Contaminated Combustibles and Noncombustibles"
- Procedure, Y50-55-DI-023, "Leitz/Zeiss/Mausser Coordinate Measuring Machines (CMMs)"
- Leitz/Zeiss/Mausser Coordinate Measuring Machines (CMM)
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- CSA B2E-6, "Second Floor Operations Work Stations"
- Procedure Y50-B2-025, "Walk-in Hood Startup/Shutdown"
- CSA B2E-6.1, "Walk-In Ventilation Hood"

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- Procedure Y50-01-B2-055, "Measurement Control of Scales"
- Procedure Y50-01-B2-028, "Uranium Assay Verification Using Canberra Instrumentation"
- CSA B2E-10, "Uranium Metal Standards"
- D&A Shift Managers' Log
- D&A Operator Aids
- D&A Required Reading
- D&S Standing Orders
- Dimensional Inspection Log Book
- Dimensional Inspection Standing Orders
- Procedure Y50-55-PT-374, "Operation of 9MEV Linac 9204-2E"
- Radiography procedure
- CSA PT-PL-100, "Fissile Material Loading Limits"
- CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
- Procedure Y70-153, "Mock Ups"
- Procedure Y50-01-B2-054, "Daily Administrative Checks"
- Procedure Y50-53-SO-031, "Surveillance of Criticality Accident Alarm System for Building 9204 2E"
- C5 disassembly procedure

Evolutions/operations witnessed:

- Part marking
- Contaminated combustible move

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- Functional test/daily calibration check of the Mauser Coordinate Measuring Machine
- Electron beam welder operation
- Walk-in hood, scales, and Canberra operations
- Shift manager morning walk-through
- Shift manager morning brief
- Special production crew brief
- Operations manager meeting with special production crew
- Radiography of a mock up unit (or assembly)
- Daily administrative checks
- Quarterly surveillance of Building 9204-2E Criticality Accident Alarm System (CAAS)
- C5 mockup disassembly

Discussion:

1. The manager, nuclear operations stated that the Conduct of Operations Manual was the way people were to do business at this facility. Workers at every level of the organization were to use the manual if they had an operational question. The Conduct of Operations Manual was written to apply to day shift operations with the statement that a second shift may be operated during periods of high demand. The Conduct of Operations Manual was present in the workplaces visited and organizational managers were cognizant of its contents.
2. An activity involving moving a bag of contaminated combustibles from one fissile storage array (inside a radiological high contamination area) to another fissile storage array (outside the area) was observed. The pre-job brief was conducted in accordance with procedure Y10-01-302. Requirements of CSAs and procedures were complied with. Radiological controls procedures were complied with, including dress out, monitoring, and survey. A question arose concerning the use category for procedure Y70-01-B2-010, which was not indicated on the procedure. The supervisor thought it was category III, but said he was not sure. The index of the procedure listed the category as "N/A." Procedure Y10-102, "Technical Procedure Process Control," required each procedure to be categorized as I, II, or III.

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3. During electron beam welder operation, the supervisor led a pre-job briefing, and directed the electron beam welder operation. The process engineer demonstrated excellent knowledge of electron beam welding. The welder was proficient in equipment operation.
4. During Canberra, walk-in hood, and scale activities, the following were noted:
 - a. There were no calibration stickers on the air flow meter or either of two manometers checked to determine whether proper air flow existed to permit hood operations. When asked, the process engineer, who had approved the walk-in hood ventilation velocity performance, stated that calibration of meters, gages, etc., was not required unless the instruments were used to take weapons data. This issue was raised previously by YSORT, and has not been resolved.
 - b. The operations listed above took place in a posted radiological high contamination area. Personnel involved complied with all requirements of applicable Radiation Work Permits (RWP).
 - c. The supervisor conducted the pre-job briefing, directed each of the three operations observed, and led a post-job critique. His involvement directly contributed to the timely and proper completion of the operations.
5. On one occasion, when the shift manager went to the fax machine to retrieve the PSS shift turnover, he found a fax stating that no shift turnover from the shift manager to the PSS had occurred the previous day. The turnover sheet was in the fax machine to be sent. However, for some reason, it was not. The shift manager did not verify transmittal of the turnover with the PSS, nor did the PSS contact the shift manager after hours when he did not receive the turnover.
6. Several required reading cover sheets indicated the reading had not been completed prior to the required completion date. Some were not explained, some were explained adequately, and some were annotated "not aware of."
7. All personnel had read the required reading explaining compensatory actions currently in place. Mentors were observed to be present for those evolutions that required their presence.
8. During turnover from operations manager to shift manager, the operations manager advised the shift manager of the status of the plant and work that had begun since the shift manager last held the watch. Upon completion of the turnover, the operations manager pulled a slip of paper from his pocket, which contained the names of the people performing the work, and handed it to the shift manager, rather than recording the information in the log.

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9. Radiography of a mockup assembly was observed:
 - a. Radiography of the mockup assembly was scheduled and started at 10:00 a.m. on January 18, 1996. During this evolution, the responsible supervisor from the quality materials and equipment evaluation department conducted a comprehensive pre-job briefing of all parties associated with the activity. All procedures and associated CSAs were validated as current and discussed in detail.
 - b. Upon commencement of the operation, the Category II procedures were adhered to, and the supervisor reminded all personnel of the safety aspects of the job as it was conducted. The required Strategy III mentor was present and certified in accordance with the Y-12 Mentor Program Description. However, the radiography supervisor said he was not aware of the certification letters and how to verify the mentors qualifications. The mentor did respond with a copy of the certification letter signed by the manager, nuclear operations. During the performance of the radiography, all required signs were verified correct.
 - c. The radiography procedure was followed, as written, to the point where a fault alarm on the Linac control panel was identified. This alarm was abnormal. However, the procedure did not include this alarm, and the activity was correctly stopped. The supervisor told everyone present that the procedure needed modification, and that maintenance would be required to fix the problem. Some confusion occurred when the Strategy III mentor was concerned that NCS D needed to be called to determine if a CSA violation or unsafe condition existed. The supervisor of radiography said the unit was "in process," therefore the requirements of PT-RAD-200 were not violated. The NCS D representative was summoned and verified that the unit and the X-ray room CSA were as required. The Linac maintenance was completed, and the appropriate procedure changes were made by the close of business. The radiography work was successfully completed for the following day.
10. Two supervisors were observed performing daily administrative checks in Building 9204-2E. One supervisor delayed completion of his checks because a fork lift was in use and the keys could not be removed, as required by his check sheet. He signed the check sheet before he had received the keys, but did not turn it in to his shift manager until he had received the keys and completed the check sheet.
11. Procedure Y50-55-DI-023, "Leitz/Zeiss/Maus er Coordinate Measuring Machines (CMMs)," did not include all actions necessary to perform dimensional inspection using the CMMs. When asked, the dimensional inspector stated that warm up of the CMM was performed by a computer program set up by programmers, and that warmup requirements were not in any procedure. Startup actions were also not in any procedure. For dimensional inspections, an operator

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instruction specific to each job was provided. Operator instruction F-0801 was reviewed. The three-page document contained procedural steps and drawings, but no review or approval signatures. When asked, the inspector said that improper performance of the operator instructions, or failure to properly perform CMM warmup and startup actions, could affect the accuracy of measurements. The inspector added that the sequence of actions sometimes became confusing.

12. A C5 mockup disassembly was observed. The evolution took place in a posted radiological high contamination area also posted as a respirator area. The following items were noted:
- a. Neither of two mentors were qualified to wear respirators. The operations manager stated that the mentors could not fulfill their responsibilities under mentor program Strategy III until they were respirator qualified.
 - b. As components were removed, part numbers were read initially by an assemblyperson wearing a respirator to another assemblyperson maintaining inventory records. The second assembly person had difficulty understanding the numbers as they were read. Later in the evolution, repeatbacks were initiated, which reduced the opportunity for errors in the inventory process.
 - c. The disassembly supervisor in charge held a thorough, to-the-point pre-brief during which all aspects of the evolution were covered. During disassembly operations, he accomplished the procedure with two assemblypersons and a radiological controls technician using a reader-worker format. The supervisor's direction throughout the evolution was paramount in the successful and timely completion of disassembly.
 - d. Some radiological controls deficiencies and problems occurred. These are discussed in OP-3 (CO-20).


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Conclusion:

With appropriate supervisory and mentor involvement, operations were conducted with rigor and discipline. This demonstrates that conduct of operations implementation is at a level sufficient to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by:  RA Team Manager Date: 2/7/96
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Method of Appraisal (short narrative description):

Objective

CO-20 Personnel exhibit an awareness of public and worker safety, health, and environmental protection requirements and, through their actions, demonstrate a high-priority commitment to comply with these requirements. (CR-14)

Criteria

1. Personnel exhibit awareness of safety-related policies and procedures necessary for daily operations.
2. Personnel exhibit awareness of requirements for safe operation as reflected in CSAs, OSRs, and appropriate operating procedures.

Approach

Record Review:

None

NOTE: Worker training on safety, health, and environmental requirements is addressed by CO-13 and CO-16.

Interviews:

None

Shift Performance:

1. During evolutions observe that personnel comply with radiological controls and radiation work permits.
2. During evolutions observe that personnel exhibit compliance with CSAs used as procedures.
3. During evolutions observe that personnel exhibit compliance with Safety Work Permits, other related permits, and safety requirements in procedures.

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Personnel contacted/position:

- See OP-2

Records & other documents reviewed:

None

Evolutions/operations witnessed:

- See OP-2 for evolutions

Discussion:

1. During movement of contaminated combustible waste and walk-in hood, scales, and Canberra operations, all involving work in a radiological high contamination area, workers, supervisors, and mentors complied with all requirements of Radiation Work Permits (RWP). They exhibited knowledge of, and compliance with, accepted radiological practices.
2. The following radiological controls problems occurred during performance of the CAAS quarterly surveillance:
 - a. Daily source checks were not recorded on two alpha and two beta-gamma friskers at the exit of the radiological contamination area on the first floor of Building 9204-2E.
 - b. Step-lid cans for used anti-contamination clothing were positioned inside the radiological contamination area. The last can to be used was for gloves, tape, and other miscellaneous waste. When exiting the contamination area, personnel could not remove their second surgeon's glove and deposit it in the can without either raising and holding the lid with an unprotected hand, or stepping back across the contamination area boundary to operate the foot mechanism.
3. During performance of the quarterly CAAS surveillance test, two individuals left an area being tested (where a bicron meter was being monitored to confirm that no actual criticality occurred) for a different area of the building. The shift manager stopped testing until he had confirmed the two individuals had reached a location where another bicron meter was being monitored.

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4. During C5 mockup disassembly activities, the following issues were noted:
 - a. A pallet and shipping container (clean) were transferred into the radiological high contamination area from the buffer zone. This was accomplished by use of an uncontaminated forklift. The forklift tines entered the high contamination area and set down the pallet. Upon backing out of the area, no survey of the forklift was conducted.
 - b. The pallet and mockup were moved to the area where disassembly was to occur by a forklift located in the radiological high contamination area. After the mockup was removed, its shipping container was placed in a storage array, and the pallet was placed near the transfer point to the buffer area. The pallet was placed on blotter paper.
 - c. Approximately two hours later, discussions concerning removal of the pallet from the controlled area were conducted between the two health physics (HP) technicians associated with the C5 mockup disassembly. They determined that the pallet should be removed, and slid it under the boundary chain into the clean area.
 - d. From the time the pallet was placed in the buffer area, until HP surveyed the pallet for release, numerous facility personnel walked on and moved the pallet.
 - e. The wooden pallet was surveyed by HP and released. Had the pallet been contaminated, it would have been difficult to determine which personnel came in contact with it. Further, at the time of the transfer across the boundary, no HP coverage was available on the buffer-zone side. The HP technician within the radiological area had to monitor out and then survey the pallet approximately 45 minutes later.
 - f. When the HP technician was questioned concerning the forklift that crossed the boundary, she stated that she thought a survey was going to be performed, but someone else must have decided against it.
5. No evolutions where CSAs were used as procedures were performed. Nineteen procedures remain under revision to incorporate CSA limits and conditions.
6. No evolutions were observed where Safety Work Permits (SWP) or other permits were required. No violations of safety requirements in procedures occurred.

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Conclusion:

Awareness of and compliance with safety, health, and environmental protection requirements (including radiological controls) are satisfactory to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by:  RA Team Manager Date: 2/26/96
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Functional Area: Operations (OP)	CRA Number/Title: OP-4 (CO-22)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-22 A routine operations drill program, including program records, has been established and implemented. (CR-9)

Criteria

1. A drill program for routine operations has been established to ensure operator readiness and knowledge of appropriate response to indications.
2. The routine drill programs at the facilities are based on a graded approach driven by the specific facility hazard categorization analysis.
3. Typical drills will have equipment failure, miscalibration, process upset, or unexpected conditions scenarios.

Approach

Record Review:

1. Review and assess the adequacy of drill procedures and drill guides for operations and quality activities in 9204-2/2E.
2. Review and assess the adequacy of program records.
3. Review facility drill programs to verify they are based on a graded approach driven by the specific facility hazard categorization analysis.
4. Review drill scenarios to verify they contain equipment failure, miscalibration, process upset, or unexpected condition scenarios.

Interviews:

Interview the managers of the drill programs for operations and quality to assess the adequacy of methods used to select drill scenarios, drill participants, and to determine the status of the program.

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Shift Performance:

1. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to D&A operations.
2. Observe and evaluate at least two operations drills, including pre-drill and post-drill activities, applicable to quality operations in 9204-2/2E.

Personnel contacted/position:

- M. A. Schlitz, organization drill coordinator
- W. T. Thomas, facility senior drill monitor
- E. E. Howard, drill monitor
- E. R. Williams, drill monitor
- J. W. White, drill monitor
- S. H. Jackson, drill monitor
- G. M. Nelson, fire patrol team member
- J. E. Newton, fire patrol team member

Records & other documents reviewed:

- Evidence files C801, C802, C803, and CL805-1
- Procedure Y10-01-210, "Conduct of Drills"
- Drill Guide 2-0003, "Vault Type Room Abnormal Condition Response"
- Procedure Y50-01-B2-045, "Fire System Inoperability - 9204-2 and 9204-2E Fire Patrols"
- Drill Guide 2-0004, "Fire System Inoperability - Setting Up Fire Patrol 9204-2 and 9204-2E"

Evolutions/operations witnessed:

- Verification of CSA in Vault Type Room
- Establishment of fire patrol

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Discussion:

1. Procedure Y10-01-210 stated in paragraph V.C.2 that drill guides shall reference job task analysis (JTA). None of the eight approved drills referenced JTA data. The existing drill guides were for relatively simple abnormal operations, e.g wrong signs, frisker alarm, etc., and did not consider JTA data.
2. There were eight approved drills. Six of the eight were revision A, the other two were revision 0. The operations drill coordinator (ODC) stated that revision A was the first revision. Training management system (TMS) records showed many examples where personnel completed drills before the effective date of the guide (Revision A). The explanation was that personnel performed to Revision 0.
3. The "List of Personnel Required to Complete a Drill" was contained in evidence file C803. The list was not complete, in that one DSO person (W. B. Stephens) was not on the list. Also, seven Quality Organization personnel were missing. There were no other organizations on the list. According to TMS printouts, all personnel on the list have completed at least one drill. However, the distribution of drills was very skewed. The table below shows the number of personnel completing each of the eight drills:

TMS Module	13704	13705	13706	13707	13708	13709	13710	13711
Drill Guide	<u>C-0001</u>	<u>C-0002</u>	<u>C-0003</u>	<u>C-0004</u>	<u>C-0005</u>	<u>C-0006</u>	<u>C-0007</u>	<u>C-0008</u>
#Completing	40	9	0	7	10	0	4	0

That no one completed 13706 (C-0003), until it was specifically requested by the RA team, was significant. This drill involves abnormal conditions in vault-type rooms (VTR), including CSA violations.

4. The RA team observed a drill conducted according to drill guide No. 2-0003, "Vault Type Room Storage Abnormal Conditions Response," on January 18, 1996. The observation included a pre-drill briefing and post-drill critique. Both were conducted by the facility senior drill monitor (FSDM) in accordance with procedure Y10-01-210. The drill was conducted according to the drill guide, and the participants correctly performed the expected actions. Some of the more significant observations raised by the drill observers and the RA team during the critique included the following:
 - a. More realism should be introduced into the drill, both with the drill props and the initiating event.

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- b. A facility PA announcement should be made that a drill is in progress and non-participating personnel should be restricted from the area.
 - c. Protocols for verbal communications (telephone and radio) should be developed to avoid compromising sensitive information.
 - d. Drill monitors should be given assignments early in the pre-brief to enable them to better prepare.
 - e. The number of active participants should be limited to the least number according to minimum staffing requirements.
5. The Management Self Assessment (MSA) concluded the criteria were not met for CO-22, "Operations Drill Program."

Procedure Y10-01-210 defined drills as "...evaluated response to simulated abnormal operational situations." However, a memo in evidence file C801, which justified a graded approach to the drill program, stated that drill guides for normal D&A activities would be developed. The restart Plan of Action (POA) required a routine operations drill program. Some people were interpreting this to mean a drill program for routine operations, as opposed to routinely scheduled drills on abnormal situations.

6. The pre-brief for a drill requiring establishment of fire patrols began, but was terminated when the shift manager noted that the OSR referenced in the procedure was revision 0, and revision 1 was the effective version.
7. Three days after being held in abeyance pending revision of procedure Y50-01-B2-045, a drill requiring establishment of fire patrols because of inoperability of Building 9204-2E fire cycle system #4 was conducted. Pre-briefing of drill monitors by the facility senior drill monitor (FSDM) with the organization drill coordinator in attendance, conduct of the drill, and critique were observed. Performance of the drill team in initiating, monitoring, and critiquing the drill was satisfactory. In particular, the team identified that the process of determining the fire patrol team leader and assigning team members, determining qualifications of team members, and assigning portions of areas when more than one team was necessary was cumbersome and in need of refinement to ensure that the one-hour requirement of the OSR was met when establishing patrols, particularly during off-hours. Problems noted during the drill by the observer included the following:
- a. The drill commenced with a call from the PSS to the operations manager notifying him that fire cycle system #4 was (simulated) inoperative. The initial response was to begin

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establishing fire patrols, including verifying their qualifications current and ensuring that the copy of the procedure being used to establish the patrols was the latest version. Nine minutes elapsed before the operations manager had an announcement made to stop welding, burning, or other work that promotes conditions favorable for a fire.

- b. Wording of the announcement to stop hot work was in accordance with posted generic drill announcements on the wall in the office area. These standard announcements were not approved or controlled as an operator aid.
- c. Two fire patrol team members entered a room posted as requiring safety glasses. They did not wear safety glasses.

Conclusion:

The drill program is in its initial stages and will improve with time and experience. Management attention is needed to effect the necessary improvements and to emphasize its importance to the worker. YSORT finding, DOE 3022.01, stated that the drill program has not been effectively implemented. The deficiencies noted during this assessment, and during the MSA and YSORT efforts, should be factored into program improvements. However, the program is adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by:  Date: 2/7/96 RA Team Manager
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RA ASSESSMENT FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-5 (CO-28)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-28 An adequate start-up or restart test program has been developed that includes adequate plans for graded operations testing to simultaneously confirm operability of equipment, the viability of procedures, and the training of operators. (CR-10)

Criteria

1. Appropriate restart programs have been developed to demonstrate that the identified processes are fully operable to perform their intended functions.
2. Verify the appropriate calibrations, preventive maintenance, and restart leak checks, etc., have been completed.
3. Restart program documents 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.

Approach

Record Review:

1. Equipment that has been in the stand-down mode is identified; equipment to be restarted is identified; and equipment to be taken out-of-service is identified.
2. For equipment to be restarted, verify that required calibrations, preventive maintenance, and restart leak checks have been completed.
3. For equipment that is to be restarted, verify that operations procedures have been reviewed and revised as necessary to make them useful.
4. Verify that training has been conducted to the intended use of the restarted equipment.
5. Verify restart programs documents the operability of the equipment that has been in the stand down mode.

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Interviews:

None

Shift Performance:

1. Walk down the list of equipment that is not to be restarted and verify each piece is tagged out-of-service.
2. In conjunction with CO-7, observe dry runs of five procedures on equipment to be restarted to determine acceptable performance of equipment, procedures, and training.

Personnel contacted/position:

- D. E. Hunnicutt, facility support manager
- J. S. Neal, shift technical advisor
- E. W. Wade, technical support, maintenance coordinator
- C. A. Begley, quality organization
- R. S. Hood, dimensional inspector
- G. S. Dailey, assistant maintenance coordinator

Records & other documents reviewed:

- Evidence files C1101 and C1102 series
- Procedure Y50-01-B2-025, "Walk-in Hood Startup/Shutdown"
- Procedure Y50-01-B2-043, "Electron Beam Welder Operation"
- C5 disassembly procedure
- Procedure 00-Y-169, "Electrochemical Etch Product Marking Procedure"

Evolutions/operations witnessed:

- Electron beam welder operation
- Handling contaminated combustible and noncombustible waste
- Radiography

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- Walk-in ventilation hood operation
- C5 mockup training unit disassembly
- Operation of Mauser
- Walk down of dimension inspection and ultrasonic areas in MAA
- Walk down of Building 9204-2E, second floor MAA

Discussion:

1. The following discrepancies were noted during a walk down of the dimensional inspection and ultrasonic areas in B2E:
 - a. The crane lift system had a deficient material condition (DMC) tag that referenced maintenance job request (MJR) YJ-699806, dated January 10, 1996. The maintenance coordinator said it was a configuration control problem in that the vacuum pumps were not capable of maintaining the vacuum required by the procedure. He said all crane vacuum lift systems were similarly affected.
 - b. Comparator DG-0594 had an up-to-date electrical inspection tag. Small comparator DI-B2E-SML-COMO had no similar electrical inspection sticker. The absence of the electrical inspection sticker could not be explained by Quality Organization personnel present.
 - c. The maintenance coordinator said they had recent problems with temperature and humidity control in the area. It was necessary to keep the door to the rest of the MAA open to maintain environmental conditions. He said there were several MJRs on the Kathabar system (HVAC), but it was not considered restart equipment because it served other areas in addition to the MAA.
 - d. In the ultrasonic area, several pieces of equipment had expired inspection stickers. This equipment was identified as D&A restart equipment in evidence file C1101PT. Examples of the equipment included tank-109 lab scanner and the ultrasonic equipment connected to gauge NDT0204 (cathode ray tube), pulser, receiver, and gate module).
 - e. In the ultrasonic area, numerous lifting fixtures were identified that were not on the restart equipment list, but did not have tags indicating they could not be used. Lifting fixtures included ET&I numbers 8760, 7941, 9206, 8510, 8093, 8512, 7666, and 7999. Also,

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there were numerous pieces of electronic equipment in the inspection lab that were not on the list and not tagged.

2. The following discrepancies were noted during a walkdown of the list of DSO equipment required for restart (from evidence file C1101DS) on January 22, 1996:

Backfill station B5-205	not on list/not tagged
Leak test station LT-280	not on list/not tagged
Fill station FS-227	not on list/not tagged
Welder-244	not on list/not tagged
West EB welder	not on list/not tagged

3. A memorandum, dated January 22, 1996, provided an update on the latest MJRs tied to D&A restart. It included 18 line items, including six on the Kathabar system. Other significant MJRs included replacement of a fan motor necessary to support the electropolisher, bad diaphragms on the environmental room, and repair of polycold tanks that are necessary to support leak test units.

Conclusion:

The operability of the equipment necessary to support D&A restart has not been adequately demonstrated. Corrective maintenance is required on numerous pieces of equipment and systems in order to prove operability. The Kathabar system is necessary to maintain strict temperature and humidity conditions in the MAA, yet is not included on the restart list and has numerous MJRs outstanding. In addition, all equipment not planned on being restarted has not been tagged out-of-service. These issues are addressed as prestart findings. Once prestart findings are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: J. E. Lee H. A. Oliver III B. A. Wilson	Approved by: <i>J.P. Flynn</i> RA Team Manager Date: 2/7/96
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RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-4)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-4 There are adequate and correct safety limits for operating systems. (CR-1)

Criteria

1. The OSR for Building 9204-2/9204-2E is technically accurate and consistent with the physical facility configuration.
2. Designated equipment and systems are present as described in the OSR.
3. The OSR can be technically accomplished.
4. Compliance with the OSR is verified.

Approach

Record Review:

1. Review the Building 9204-2/9204-2E OSR for technical accuracy.
2. Compare the Building 9204-2/9204-2E OSR against current facility drawings to verify consistency.
3. Ensure surveillance requirements and LCO actions of the OSR are covered in approved procedures.
4. Review surveillance records to verify surveillances are up to date and demonstrate the OSR requirements are being met.

Interviews:

None

Shift Performance:

1. Walk down Building 9204-2/9204-2E and verify facility equipment and systems are present as described in the OSR.

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2. Observe at least three simulations/evolutions covered by the OSR to verify they can be technically accomplished and operators/managers are in compliance with the OSR.

Personnel contacted/position:

- D. M. Nabors, shift manager
- G. W. Kerley, nuclear criticality safety coordinator for DSO
- G. L. Lovelace, DSO plan-of-action coordinator
- J. M. Stooksbury, DSO engineer
- G. L. Gamble, assemblyperson
- M. R. Seavers, shift technical advisor
- G. M. Nelson, administrative assistant to the operations manager
- B. C. Brown, head of fire protection engineering
- J. S. Neal, shift technical advisor
- L. J. Fenstermaker, fire captain

Records & other documents reviewed:

- Evidence files C108, C108A, C108TID, C108TIF, C108TIP, C108T2D, C108T2Q, C108T3D, C108T3DA, C108T3Q, C107T3QA, CL108A-1, C110, C114, C114A, CL110-1
- CSAs B2E-04 and B2E-12
- Drawings DSM920402A001, DSM920402A002, DSM920402A003, DSM920402A004, DSM920402A005, DSM920402A006, DSM92042EA001, DSM92042EA002, DSM92042EA003, DSM92042EA004, E2E92042EA094, E2E92042EA095, E2E9204A845, E2E9204A846, E2E92042EA099, E2E92042EA100, E2E92042EA101, M2E92042EA104
- Y50-43-SO-031
- Procedures ESPS-FO-003, ESPS-FO-004, ESPS-FO-005, ESPS-FO-006

Evolutions/operations witnessed:

- Verified implementation of two CSAs in the field
- Walked down the fire protection and CAAS systems in Building 9204-2/2E to verify consistency between the facility equipment and the current OSR and facility drawings.

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- Performed a simulated walkthrough of the appropriate LCO actions for a fire protection system activation or pipe rupture.
- Observed a modified (4 zones out of 33) quarterly surveillance test of the criticality accident alarm system (CAAS) for Building 9204-2E.
- Observed a modified (system #1 only) quarterly surveillance test of the firecycle sprinkler system in Building 9204-2E.

Discussion:

1. Evidence File Review

An evidence file review was performed to determine if the CAAS and fire protection procedure lists, training lesson plans, and other documentation were current and consistent with the approved OSR for 9204-2/2E (Y/TS-1314, Revision 1). Fourteen of the 16 evidence files were satisfactory.

Additional documentation was needed in C108TIF to confirm that the fire protection training lesson plans (dated 8/4/95) had been reviewed for consistency and accuracy with Revision 1 of the OSR (dated 9/18/95).

The OSR Surveillance Procedure Matrix and "Last/Next" Performance Date List (in C110) were not current. Several procedure changes and monthly/quarterly surveillances had occurred since these documents were last updated in August 1995.

A review of the C110 OSR Procedure Matrix (dated August 28, 1995) versus Revision 1 of the OSR (dated 9/18/95) had not been documented and included in the evidence file.

2. CSA Walkdown

Twenty-five arrays were walked down by RA team members. Container usage and labelling were found to be consistent with the requirements of CSA B2E-12. However, several discrepancies or inconsistencies were noted regarding the requirements documented in CSA B2E-04. They were as follows:

- a. At least six out of 25 locations identified in the CSA B2E-04 were misleading. Although consistent with the criteria established by engineering (e.g., upper left corner of the array grid depicted in drawing M2E92042EA014), significant differences between the actual and designated locations exist in some cases, which were considered inappropriate by operations personnel.

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- b. The intent of B2E-04 was to minimize operator error through the use of highly visible, local signs that clearly stated the limiting conditions for each array. Accordingly, the operators would have access to all the limits without having to refer to the CSA. However, many of the arrays described in the CSA indicated "none" regarding posted area signs. A footnote stated that "none" meant the requirements for CSA Sign #1 were automatically in effect. This practice placed the burden of remembering the CSA requirements on the operator and was inconsistent with the intent of the CSA. Local posting at all arrays would reduce the operator's reliance on the CSA or memory, which minimizes the chances of error. The use of "none" was standard practice in other CSAs involving arrays. When asked, several of the facility personnel in the area were unaware of the requirements for arrays without signs.

During a tour with an assemblyperson, the individual explained the requirements for bagging, storing, stacking, etc. in each array. Explanations were always consistent with the CSA.

One vault type room (VTR) had a sign that prohibited "assembly-type birdcages." When asked what these were, both the shift manager and the assemblyperson said they did not know. The shift manager later said they were a special kind of birdcage, but no birdcages were allowed in the VTR. The posted sign did not exclude all birdcages.

3. OSR/Surveillance Program

A review of the OSR (Y/TS-1314, Revision 1) verified accuracy and consistency between this document and equipment in Building 9204-2E.

A review of the surveillance program and records verified that the surveillances were current, consistent with the OSR, and properly documented. The method used for tracking surveillance was found to be satisfactory (e.g., no late or omitted surveillance). The historical surveillance records (since March 1995 when D&A assumed responsibility for their control) were found to be satisfactorily complete, accurate, and retrievable.

4. Drawings

Accurate CAAS electrical drawings did not currently exist, but efforts were underway by central engineering to "as-built" these drawings. The planned completion date was February 9, 1996. The mechanical drawings for each CAAS monitoring and alarm station were found to be acceptable during the walk downs.

Similarly, the electrical drawings for the fire protection system were being collected by central engineering for turnover to D&A. Plans for updating them were under development, but no date

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(other than a prestart agreement) had been established. The piping/mechanical drawings were being "as-built" with completion scheduled by March 1, 1996.

The CAAS and fire protection "as-built" drawing issue was previously identified in YSORT finding 3021, and resolution of this finding should satisfactorily address the issues.

5. CAAS Quarterly Surveillance Test

The "zone maps" used by the surveillance team to locate audible and visual alarms were not always accurate or optimally established. The following examples of zone map deficiencies were noted:

- a. Drawing number E2E92042EA100 showed only two audible alarms in Zone #8 to be verified during the test. While examining the two audible alarms in Zone #8 prior to activation, the surveillance team noticed an adjoining room with an additional audible alarm that appeared on drawing number E2E92042EA100 for Zone #11. Because of the current layout of the room, this alarm could not be readily accessed from Zone #11 by the responsible surveillance team during test of the CAAS. Removal of this alarm from Zone #11 and adding it to Zone #8 would be prudent.
- b. During a pre-test briefing by the zone leader, the Zone #21 surveillance team was verbally instructed to also check speaker #1, which is in the area but currently shown on drawing number E2E92042EA099 for Zone #16, i.e., this speaker did not appear on drawing number E2E92042EA101 for Zone #21. The rationale for this deviation was that most of the alarms in Zone #16 were inside the material access area with speaker #1 as a notable (outside) exception. Therefore, during a surveillance test, the Zone #16 surveillance team would have a difficult time accessing Speaker #1, but the Zone #21 team would not.
- c. Discussions with several surveillance team members and observers who participated in past tests indicated that other drawing deficiencies had been noted but not corrected. The general consensus was that the drawings were not properly "walked down" and should be reviewed (in the field) by engineering and facility personnel for logical zone layout and accuracy.

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6. Firecycle Sprinkler System Quarterly Surveillance Test

A "modified" quarterly firecycle surveillance test in Building 9204-2E was performed to demonstrate that this test could be satisfactorily accomplished consistent with the requirements in the OSR. The following were noted:

- a. Procedure ESPS-FO-006, "Monthly, Quarterly, and Annual Fire Protection Surveillance - Firecycle Sprinkler System in Building 9204-2E," was used to perform this test. A review of the procedure verified that the OSR requirements (such as a system pressure drop of less than or equal to 10 psi) were satisfactorily included in the procedure.
- b. Normally, two Building 9204-2E systems (i.e., system #1 and System #2) were tested together using this procedure. However, it was understood by both facility operations and fire protection personnel that a "modified" test would be performed (i.e., system #1 only) for demonstration purposes. The shift manager confirmed that he did not intend to use this test to satisfy the quarterly surveillance test requirement.
- c. The procedure did not allow for a single system test. Neither operations nor fire protection department personnel (at any level in the hierarchy) challenged the appropriateness of using this procedure for performing a single system test.
- d. Although not currently required by the procedure, but considered a good conduct of operations practice, a permanent member of the operations staff did not witness the test or visually confirm the system's return to safe service after the test was completed.
- e. Similar deficiencies exist in procedures ESPS-FO-003, ESPS-FO-004, and ESPS-FO-005.

7. CSA PT-RAD-200, dated August 16, 1995, for radiography in Rooms 125, 126, and 127 in 9204-2E, was walked down. During this walkdown, the following issues were identified:

- a. The CSA referred to four QE procedures and future new activities. The supervisor for the quality materials and equipment evaluations department was asked what "future new activities" meant. He said this was in the CSA in case something special would need to be radiographed in the future. Then the organization would be able to do it in accordance with this CSA.

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- b. In the requirements section of the CSA, the terminology "etc." was used to describe types of containers (section 2.b.) approved for floor storage. In the clarifications section, "etc." was used to describe the equipment used to transfer components into or out of the X-ray area. The radiography supervisor was confused about the meaning of the use of "etc." He said it probably referred to CSA PT-PLT-100, "Fissile Material Loading Limits." The CSA should be specific and not contain nebulous terminology.
 - c. The signs required by the CSA were correct and in appropriate locations.
8. CSA DI-B2E-100, "Fissile Work Stations and Fissile Storage Arrays," contained vague wording in two areas:
- a. Under proposed activity, "Various gages, micrometers, comparators, scales, etc., may be used at the fissile work stations during the dimensional inspection operations."
 - b. Under clarification, "Tools, gages, etc., may be left unattended on the fissile work stations."

Conclusions:

The CSAs are sometimes misleading when describing the existing field configuration(s) or allow conditions to exist that force the operator to rely on the CSA document or memory to accomplish the task in a safe manner. The two QO CSAs reviewed indicate a lack of significant improvement since the September 22, 1994, event. Although efforts are currently underway to update the CAAS and fire protection mechanical and electrical drawings, some completion dates have not been established as of the date of this assessment. Additionally, problems with some fire protection surveillance test procedures exist. Once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by:  RA Team Manager Date: 2/2/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

The status of the safety systems and safety-related process system components in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs is satisfactory.

Approach

Record Review:

Review maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify safety systems and safety-related process system components have been inspected/calibrated and are within the required specification and periodicity.

Interviews:

None

Shift Performance:

1. Compare safety systems and safety-related process system components in the field against maintenance Recall-A Program and ET&I and ICP inspection and calibration program records to verify records reflect installed components.
2. Verify safety systems and safety-related process system component inspection/calibration sticker dates in the field match the dates in the inspection/calibration records.

Personnel contacted/position:

- E. W. Wade, DSO maintenance coordinator
- J. S. Neal, shift technical advisor
- G. M. Nelson, administrative assistant to the shift manager
- D. M. Nabors, shift manager
- H. S. Hackler, fire chief

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996
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- L. J. Fenstermaker, fire captain
- L. E. Randolph, fire protection reports and data clerk
- C. R. Nichols, FMO supervisor
- R. A. Wilder, fire protection procedure analyst
- E. L. Hockett, fire protection operations manager

Records & other documents reviewed:

- Evidence files C201, C204, C206
- Y/TS-1314, "Operational Safety Requirements for Building 9204-2/2E Material Access Area," Revision 1
- Procedures ESPS-FO-013, ESPS-FO-014, ESPS-FO-015, ESPS-FO-016, ESPS-FO-018, ESPS-FO-019, ESPS-FO-020

Evolutions/operations witnessed:

- Walked down the fire protection and CAAS systems in Building 9204-2E to verify consistency between the process system components in the field and the appropriate calibration records.
- Verified the inspection/calibration sticker dates were accurate and consistent with the calibration records.

Discussion:

1. Each of the Building 9204-2E fire protection system LCO pressure gauges were properly labeled with calibration stickers. Additionally, all of the sticker dates were satisfactory and consistent with the calibration records. To assist in proper identification of safety related components, laminated labels were securely attached to each fire protection system component and provided useful information not normally found on labels, such as whether or not the component was "LCO" related.
2. Monthly, quarterly, and annual inspections of the Building 9204-2E fire protection system were current, satisfactorily tracked, and prominently displayed on a "white board" outside of the fire chief's office for easy use and reference.
3. Each of the Building 9204-2E CAAS system monitors were properly labeled with calibration stickers. Additionally, all of the sticker dates were satisfactory and consistent with the Recall-A calibration records.

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4. A review of the calibration program files/records for the CAAS system components showed that some of the files did not contain the latest change-out sheets, e.g., four of the eight monitor records sampled for Building 9204-2E were missing. Eventually, the missing records were found and returned to the files. The final review verified that these CAAS monitors were satisfactorily calibrated, within the required specifications and periodicity, and consistent with the Recall-A data.
5. The maintenance shift supervisor (MSS) tracked and distributed the PM/change-out status of the CAAS monitors on a separate (non-Recall-A) report. A comparison of the MSS status report, dated December 4, 1995, with a comparable Recall-A status report showed significant differences between the two. All eight sample monitor (M) numbers were different. A walk down confirmed the Recall-A program M-numbers were correct. Further investigation showed that although several monitors were changed out in November 1995, the December 12, 1995, report (33 days after the earliest change-out) did not reflect the new status. Further investigation determined that the January 15, 1996, MSS status report (which covered a time interval with no change-outs) was correct and consistent with the components in the field. It was concluded that the MSS tracking system was functional but may have problems with timely updating.
6. The Fire Protection Department has committed to the development of at least seven fire protection system preventive maintenance procedures by April 30, 1996. Presently, none of these procedures have been issued for use, nor has the associated preventive maintenance been performed on the associated systems. Most of the procedures are either still under development, with only a few that may be close to entering the review and approval cycle. During an interview, a senior procedure writer stated that the April 1996 date would not be met, and an extension would have to be requested. Because of limited resources and higher priorities, he could not speculate on a new date for completion at this time.

Conclusions:

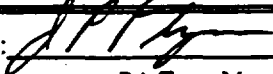
The master CAAS component calibration files/records are sometimes incomplete and unavailable for reference and audits. Additional controls are needed to ensure that these master calibration files/records are secured and periodically checked to ensure they are complete at all times. The various CAAS monitor PM/change-out status reports that are published for use do not always reflect the current status, nor are they always consistent with each other. Special attention is needed to ensure the status reports are updated within a reasonable time after change-out. Also,

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-2 (CO-10)	Date: January 26, 1996
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consolidation into one report that could be used by all groups should be considered to eliminate inconsistencies. Fire protection preventive maintenance procedures do not exist, preventive maintenance has not been performed on the related systems, and current commitment dates for completion will not be met. Overall, however, activities in this area are adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by:  Date: 2/2/96 RA Team Manager
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-3 (CO-11)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-11 Safety system and other instruments that monitor Technical Safety Requirements (OSRs at Y-12) are monitored for calibration. (CR-5)

Criteria

Calibration has been properly performed at the required frequency for all safety systems and safety-related process system components.

Approach

Record Review:

1. Verify all calibration/inspection requirements for safety system and safety-related process system components are incorporated into the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs.
2. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency.
3. Review records to verify standards used for calibration/inspections are acceptable.

Interviews:

None

Shift Performance:

1. Observe rounds in Building 9204-2/9204-2E to verify calibration/inspection status of safety systems and safety-related system components are being monitored.
2. Observe at least two calibration/inspections to verify they are being properly performed.

Personnel contacted/position:

- D. M. Nabors, shift manager
- H. S. Hackler, fire chief

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-3 (CO-11)	Date: January 26, 1996
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- L. J. Fenstermaker, fire captain
- L. E. Randolph, fire protection reports and data clerk

Records & other documents reviewed:

- Evidence file C202
- Y/TS-1314, "Operational Safety Requirements for Building 9204-2/2E Material Access Area," Revision 1

Evolutions/operations witnessed:

- Verified the calibration/inspection requirements for the fire protection and CAAS systems in Building 9204-2E were incorporated into the appropriate calibration records.
- Reviewed the inspection/calibration records to verify they had been performed at the required frequencies to acceptable standards.
- Observed rounds in Building 9204-2E to ensure the calibration/inspection status of the fire protection and CAAS system components were being monitored.

Discussion:

1. The shift manager performed a walk-through (administrative rounds) at the beginning of each shift to familiarize himself with the status of the systems and components prior to the plan-of-the-day meeting. In the observed walk-through, he checked the calibration stickers on the CAAS monitoring stations. Admittedly, this check was not made each day. However, prior to the commencement of special tests or the return of equipment to operation, operations personnel claim (and were observed by others) to check the calibration status of system components. Furthermore, this requirement to check the calibration status had been included in the appropriate procedures to ensure compliance with this requirement.
2. A review of the calibration records showed the Building 9204-2E fire protection system LCO pressure gauges were replaced with new, calibrated gauges in August 1995. The new gauges were in compliance with the Underwriter's Laboratory (UL) fire protection code requirements. The components were put on a five-year calibration cycle. The data sheets for these replacements would also be used for future calibrations and documented the following: the original (last) calibration date, the next calibration date, the as-found and as-left system pressures, and the OSR minimum system pressure limits for comparison with the as-found and as-left pressures. Values below the OSR minimum limits result in entering an LCO.

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-3 (CO-11)	Date: January 26, 1996
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3. Monthly, quarterly, and annual inspections of the Building 9204-2E fire protection system were current, satisfactorily tracked, and prominently displayed on a "white board" outside the fire chief's office for easy use and reference. This board clearly depicted these inspections as "LCO" related and satisfactorily reflected the OSR inspection requirements and intervals.
4. A review of the calibration program files/records for the CAAS system components showed that although some problems with the completeness of the files and the accuracy of the various tracking systems were found, ultimately the calibration records and required frequencies were satisfactory (see CO-10).

Conclusion:

Except for some problems with the master CAAS component calibration files/records (see C-10), the documents and activities reviewed during this assessment satisfactorily met the criteria for this objective. Therefore, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-4 (CO-12)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

1. Calibration has been performed at the required frequency for all safety systems. (See CO-11.)
2. Procedures are in place to provide surveillance of safety-related equipment.
3. Assess the status of the safety systems in the maintenance Recall-A Program and ET&I and ICP inspection and calibration programs. (See CO-10.)

Approach

Record Review:

1. Review calibration/inspection records to verify all calibrations/inspections have been performed at the required frequency. (See CO-11.)
2. Compare site/division surveillance procedures against the OSR surveillance requirements to verify they are compatible.
3. Review surveillance records to verify surveillances are current. (See CO-4.)

Interviews:

None

Shift Performance:

Walk down, to include actual or simulated operation, all safety and safety-related utility systems to verify they are currently operational and in a satisfactory condition.

Personnel contacted/position:

None

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-4 (CO-12)	Date: January 26, 1996
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Records & other documents reviewed:

- Evidence files C203 and C205
- Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9204-2/2E"

Evolutions/operations witnessed:

- Reviewed the inspection/calibration records for the fire protection and CAAS systems in Building 9204-2E to verify they had been performed at the required frequencies.
- Verified procedures were in place to provide surveillance of safety-significant equipment.
- Verified the surveillances for the fire protection and CAAS system components were current.
- Performed a walk-down to verify the safety systems were operational and in satisfactory condition.

Discussion:

1. The monthly, quarterly, and annual fire protection inspections of the Building 9204-2E were satisfactorily tracked and performed at the required frequencies. The calibration frequencies for the system components had been satisfactorily met since the program was implemented in August 1995.
2. A review of the calibration program files/records for the CAAS system components showed that although some problems with the completeness of the files and the accuracy of the various tracking systems were found, ultimately the calibration records and required frequencies were satisfactory (see C0-10).
3. A comparison of the surveillance procedures with the requirements in the OSR verified that the procedures were satisfactory with the exception of procedure Y50-53-SO-031. This procedure lacked some of the OSR requirements, such as allowed time intervals for LCO situations (see CO-7).
4. The processes used for tracking safety-significant system surveillance was found to be satisfactory, e.g., no late or omitted surveillance. The historical surveillance records (since March 1995 when D&A assumed responsibility for their control) were found to be complete, accurate, and retrievable.

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Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-4 (CO-12)	Date: January 26, 1996
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5. A walk down of the safety-significant systems in Building 9204-2E indicated that both safety-significant systems were in service and in satisfactory condition.

Conclusions:

Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9203-2E," does not contain all the OSR requirements. Notably missing were the allowed time intervals for the performance of the test (e.g., within one hour after one radiation detector station is declared inoperable and within 24 hours after entering an LCO). However, activities in this area are adequate to warrant resumption of operations associated with C5 disassembly and the electron beam welders.

Inspected by: H. A. Oliver III G. P. Zagursky	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-13 Training and qualification programs for operations personnel have been established, documented, and implemented that cover the range of duties required to be performed. (CR-2)

Criteria

1. Training and qualification requirements have been implemented according to the schedule outlined in the Y-12 Plant Training Implementation Matrix (TIM).
2. Compliance with the TIM schedule is current.
3. Training and qualification of personnel is at a level sufficient to support resumption, or appropriate compensatory measures are in place.

Approach

Records Review:

1. Review training and qualification program procedures to verify requirements have been implemented according to the schedule outlined in the TIM.
2. Review training and qualification records to verify compliance with the TIM schedule.
3. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption. If deficiencies exist, review records that show line managers have approved and put in place appropriate compensatory measures.
4. Review records to determine the following:
 - a. Content of training programs is determined by systematic analysis.
 - b. Qualification requirements (especially those leading to certification) and medical requirements are clearly specified.
 - c. Division training staff qualification requirements have been met.

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996
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- d. Verification of qualification requirements leading to certification has been conducted.
- e. A graded approach is used to establish program content.

Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption and they understand any compensatory measures in place.

Shift Performance:

Observe operators, support personnel, and line managers performing/simulating at least three operations to verify their level of training and qualification is sufficient to support resumption and they understand any compensatory measures in place.

Personnel contacted/position:

- R. J. Shelton, DSO training manager
- S. L. Chapman, QO training manager
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, QO, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, process engineer
- E. W. Wade, DSO maintenance coordinator
- M. D. Waldrop, DSO process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996
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Records & other documents reviewed:

- Evidence files C304DS, C304Q, and CL304-1
- Four Quality Organization (QO) personnel training records
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 5/13/94
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 1/25/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/15/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/22/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 11/8/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 5/17/94
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 1/25/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 8/22/95
- Procedure Y90-030, "Training Records," dated 6/21/94
- Procedure Y90-030, "Training Records," dated 1/25/95
- Procedure Y90-030, "Training Records," dated 8/22/95
- Procedure Y90-040, "Conduct of Training Analysis," dated 11/29/93
- Procedure Y90-040, "Conduct of Training Analysis," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 12/28/93
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 7/24/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 8/22/95
- Procedure Y90-080, "Conduct of Training Implementation," dated 6/21/94
- Procedure Y90-090, "Training Remediation," dated 8/22/95
- Procedure TQ-106, IAD "Control/Administration of Examinations" (12/95)
- Procedure TQ-108, "Training Records Management" (4/95)
- Procedure TQ-110, IAD "Exceptions, Extensions, and Alternative" (12/95)
- Procedure TQ-120, IAD "Selection/Qualification/Certification/Training Personnel" (12/95)

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996
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Discussion:

1. Evidence File Review

- a. The following are examples of problems identified in the evidence files reviewed:
 - (1) J. P. Davis, weld inspector, was not identified in the C304Q file, but he did function in support of D&A. This file did not contain evidence of qualification for all of the personnel supporting D&A activities. This file did not contain evidence of certification for those personnel in certified positions (evidence of certification is, however, kept in the personnel training files located in Building 9709).
 - (2) Evidence file C401DS listed 24 TMS module numbers that specific DSO personnel were required to complete. Two of the required modules (#14117, "Fire System Inoperabilities," and #13775, "Conduct of Drills Orientation") for a material controller did not appear on the associated qualification card in evidence file C304DS. One of the required modules (#13912, "Operation and Shield Survey") for a welder did not appear on the associated qualification card in evidence file C304DS. There were 14 qualification cards in C304DS.
 - (3) Evidence file CL304.1, internal review of disassembly and assembly training records, did not contain adequate evidence of a valid internal review of D&A training records. Compliance requirements for the review did not reflect the actual requirements for the records reviewed. Specific examples included the review of training records for D. S. Johnson and E. W. Westen. Both individuals were identified as metallurgists. However, the internal review determined that a comprehensive examination and operational evaluation was required for one and not the other.
- b. Two radiographers' training records contained a letter from B. L. Witt indicating that these personnel were no longer designated to be certified. The QO training manager said that both persons were designated to be certified. The training records contained evidence that one radiographer was qualified and one radiographer was certified.
- c. The comprehensive examination for a QO metallurgist was not properly graded. A recount of the items missed resulted in a failing score for that section of the examination. A remedial examination was not given for the failed section. Since satisfactory completion of a comprehensive examination is a prerequisite for certification, the metallurgist should be considered decertified. After a review of this issue, and a review

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Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 26, 1996
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of the comprehensive examination, the QO training manager indicated that the metallurgist would be decertified. However, over a week after discovery of the problem, the metallurgist had not actually been decertified.

- d. During the course of an interview with the QO training manager, he said that proficiency requirements for certification had not been identified for QO personnel, nor had any command media been developed to identify proficiency requirements.
2. In evidence file C301DS, an assembly operations assistant named on the D&A resumption list was not in evidence file C501DS on a list titled "List of DSO Operations Personnel Identified in C301DS as part of the D&A Resumption Effort."
3. In evidence file C501DS, a name on a list, titled "List of DSO Operations Personnel Identified in C301DS as part of the D&A Resumption Effort," was not present on the list of personnel for D&A resumption in C301DS.

Conclusion:

Problems were found in the training and qualifications programs in both D&A and QO. Training program plans that describe the goals and objectives of the training and qualification programs are in place, but are still in draft form. On-the-job-training (OJT) and hands-on evaluation of skills is incorporated into the training programs. Initial training programs are in place. The qualification/certification process is clearly defined and found to be adequate in D&A. The QO qualification/certification process does not have procedures that define proficiency requirements. Once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-14 Technical qualifications of contractor personnel responsible for facility operations are adequate.
(CR-19)

Criteria

1. Compliance with the TIM schedule is current. (See CO-13.)
2. Training and qualification of personnel is at a level sufficient to support resumption. (See CO-13.)
3. Personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operations.
4. Applicable non-reactor nuclear facility managers, supervisors, operators, technicians, maintenance support, and technical support personnel are evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

Approach

Record Review:

1. Review training and qualification program procedures to verify compliance with the TIM schedule. (See CO-13.)
2. Review records that demonstrate line management has established and approved the level of training and qualification of personnel sufficient to support resumption.
3. Review records that demonstrate line management has put in place controls to ensure personnel not meeting the current qualification requirements for a particular operation shall have a qualified individual with them while performing that particular operation.
4. Review records that demonstrate appropriate personnel have been evaluated for the minimum education and experience levels defined in Attachment IV-I of DOE Order 5480.20.

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996
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Interviews:

Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to verify their training and qualification are sufficient to support resumption. Also verify they know that if personnel do not meet the current qualification requirements for a particular operation, they shall have a qualified individual with them while performing that particular operation. (See CO-13.)

Shift Performance:

Observe operations, support personnel, and line managers performing operations to verify their training and qualification are at a level sufficient to support resumption. (See CO-13.)

Personnel contacted/position:

- D. L. Gordon, senior training specialist
- M. K. Snyder, senior training specialist
- R. S. Ackroyd, senior training specialist
- M. R. Rettig, senior training specialist
- R. J. Shelton, DSO training manager
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, DSO, technical support, process engineer
- E. W. Wade, maintenance coordinator
- M. D. Waldrop, process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

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Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996
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Records & other documents reviewed:

- Evidence Files C303DS and C303FM
- Table Top Analysis for D&A supervisor
- DSO Task to Train Matrix
- QO Table Top Analysis
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 5/13/94
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 1/25/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/15/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 8/22/95
- Procedure Y90-010, "Selection, Qualification, Certification, and Continuing Training," dated 11/8/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 5/17/94
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 1/25/95
- Procedure Y90-020, "Exceptions, Extensions, Alternatives, and Waivers," dated 8/22/95
- Procedure Y90-030, "Training Records," dated 6/21/94
- Procedure Y90-030, "Training Records," dated 1/25/95
- Procedure Y90-030, "Training Records," dated 8/22/95
- Procedure Y90-040, "Conduct of Training Analysis," dated 11/29/93
- Procedure Y90-040, "Conduct of Training Analysis," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 12/28/93
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 1/25/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 7/24/95
- Procedure Y90-070, "Development, Control, and Administration of Examinations," dated 8/22/95
- Procedure Y90-080, "Conduct of Training Implementation," dated 6/21/94
- Procedure Y90-090, "Training Remediation," dated 8/22/95
- Procedure TQ-106, IAD "Control/Administration of Examinations" (12/95)
- Procedure TQ-108, "Training Records Management" (4/95)
- Procedure TQ-110, IAD "Exceptions, Extensions, and Alternative" (12/95)
- Procedure TQ-120, IAD "Selection/Qualification/Certification/Training Personnel" (12/95)

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996
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Discussion:

1. Evidence files that were reviewed were found to be adequate.
2. The qualification requirements for the assemblyperson dismantlement position did not include training that was identified by the operating organization as being required for qualification/certification. Personnel were certified without having met all of their identified qualification requirements. Specific examples included training on operation of leak detectors and SAM-2 meters, preparation and application of adhesives, packing of components for shipping, operation of the CNC South Bend lathe, and preparation and utilization of vacuum cans.
3. With few exceptions, the training program for D&A and QO focused on procedure training and did not promote process understanding or integrated system knowledge. The training programs consisted almost entirely of health and safety compliance-based training and procedure-based training involving performance documentation checklists (PDC). Little attention had been given to fundamentals training and training that instructed operators on how and why systems, equipment, and processes function. Without fundamental training and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and any unexpected or abnormal situations.
4. D&A and QO personnel were interviewed. Areas of inquiry included knowledge of compensatory measures, controls for non-qualified staff, purpose and requirements for qualification/certification conduct of operations, and procedural requirements. The majority of those interviewed demonstrated knowledge deficiencies in the area of qualification/certification. Virtually all of those interviewed knew that if personnel did not meet qualification requirements, they must have a qualified individual with them.
5. Evidence packages were reviewed for evidence of education and experience of staff. The evidence files referenced training records. Training records contained questionnaires and letters that indicated the requirements were met.
6. Controls that ensured only qualified/certified personnel performed activities requiring qualification/certification had not been sufficiently established in the Facilities Management Organization (FMO). The lack of documentation of key training requirements (e.g. fire protection system) precluded implementation of an effective control system. In addition, qualification requirements based upon analysis had not been fully implemented in the FMO training program. Current qualification requirements were not updated with new analysis data.


FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 26, 1996
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Conclusion:

Problems were found with the training programs for D&A and QO. Neither organization's training program contain fundamental and system training. D&A personnel qualification requirements do not always include training identified by the operating organization as being required for qualification/certification. FMO has not sufficiently established controls that ensure only qualified/certified personnel perform activities requiring qualification/certification. However, once prestart findings associated with this area are resolved, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by:  Date: 2/2/96 RA Team Manager
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-16 Training has been performed to the latest revision of procedures. (CR-18)

Criteria

All applicable personnel have been trained to the latest revision of the procedure.

Approach

Record Review:

1. Verify line management has designated in writing personnel who are necessary to perform specified tasks.
2. Review personnel training and qualification records to verify the personnel who are designated to perform specific tasks have been trained to the latest revision of the procedures applicable to each task.
3. Verify that continuing training programs are established and implemented.

Interviews:

None

Shift Performance:

Observe at least three simulations/evolutions to verify that personnel conducting the simulations/evolutions are designated in writing to perform them and have been trained to the latest revision of the applicable procedure.

Personnel contacted/position:

- R. J. Shelton, DSO training manager
- D. Martin, training records staff
- S. Chapman, QO training manager
- K. C. Marks, instructor, DSO training department

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996
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Records & other documents reviewed:

- Evidence Files C302ME, C401DS, C402DS, C401ME, and C403

Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. Two D&A positions listed in evidence file C401DS were required to be trained on specific procedures and associated TMS modules. This required training was not identified on qualification cards for two workers in evidence file C304DS. Specifically, the material controller position required training for TMS modules 14117 and 13775 for procedure Y50-01-82-045, "Fire System Operability - 9704-2 and 9704-2E Fire Patrols," but these courses were not on the qualification card. The welder position required training for TMS module 13912 for procedure Y50-01-B2-043, "Electron Beam Welder Operation," but this course was not on the qualification card. There was no record in TMS that either individual had the required training.
2. No problems were noted in files C402DS or C403.
3. Evidence file C302ME listed "Specified Tasks vs. Applicable Procedures." Tasks related to engineering support listed procedure Y50-55-PT-415 (module 15463) as being required. A list of QA/QC personnel needed to perform D&A operations listed D. W. Koerner and D. A. Waldrop as engineering support. In C401ME, under engineering support, D. A. Waldrop was not listed as required to be trained in module 15463, and it was not indicated that he had completed the training. D. W. Koerner was required to take module 15463, and it showed it was completed. A form, dated November 9, 1995, listed D. W. Koerner as being trained in module 15463 on October 27, 1995, but D. A. Waldrop was not listed. Based on these records, Waldrop had not been trained in module 15463. In Waldrop's training file, his qualification card did not list module 15463, and there was no record of his taking module 15463. A member of the training records staff said the training record files did not indicate that either Waldrop or Koerner were qualified/certified for their positions.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996
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4. Continuing training dates were not accurately and consistently identified. The following are examples of inconsistencies for scheduling continuing training dates:
 - a. In evidence file C304DA, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 9044 (License - overhead crane/pendant) as 24 months. The group requirement/qualification status (GRQ) form for this individual gave a requalification date of November 20, 1998, or more than 24 months in the future.
 - b. In evidence file C304DS, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 13003 (annual security refresher) as annual. Module 13003 was also marked as a "fixed continuous task" for training. The GRQ form, dated January 11, 1996, for this individual did not list a requalification date for module 13003.
 - c. In evidence file C304DS, the qualification card for an assemblyperson - disassembly, listed the recertification interval for module 6501 (SNM Locking Systems) as "none." The group training history (GTH) form, dated January 11, 1996, showed the assemblyperson completed module 6501 on May 6, 1994, and had a requalification date of May 5, 1996. A material controller's GRQ form did not list a requalification date for module 6501, and his qualification card gave an annual recertification.
 - d. In evidence file C304DS, the qualification card for an assemblyperson - disassembly listed module 11867 (Emergency Preparedness Plan) without a requalification date. The GTH form, dated January 11, 1996, showed this individual completed module 11867 on November 10, 1995, and had a requalification date of November 9, 1996. The qualification card for an engineer gave module 11867 an annual recertification requirement, but the engineer's GRQ form did not list a requalification date.
 - e. In evidence file C304DS, the qualification cards for a disassembly supervisor and machine cleaner listed the requalification interval for module 11536 (Medical Exam - PSAP) as annual. The GRQ form for these individuals gave requalification dates of February 13, 1997, and March 11, 1997, for module 11536, or more than 12 months in the future.
5. In evidence file C304DS, the qualification card for a machine cleaner listed module #1943 (Haz. Comm. Trng. Level 1) as required. The GRQ form for this individual did not list module #1943.
6. The Quality Organization had not established and implemented a continuing training program.

FIELD NOTES


RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 26, 1996
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7. A D&A training class (Conduct of Operations, Chapter XVI, Procedure Use, module 14544) was observed. Four students were present and all passed the written examination. The instruction was well done. A student taking the examination pointed out that a multiple choice question on the test (#9, exam A) used two choices (B and C) that were equally correct, and "B" was the "correct" answer. The instructor did not count the question on that day's examination, and said he would correct or replace the test question.

Conclusion:

D&A has established an adequate continuing training program, but continuing training dates are not consistently and accurately identified. However, QO has not established and implemented a continuing training program. Resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

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

Criteria

Evaluate required facility-specific knowledge of operations personnel by observations of the performance of simulations, drills, and through oral interviews of the operating personnel.

Approach

Record Review:

1. Review documentation to ensure examination requirements for qualification/certification have been met.
2. Review records for objective evidence of the examination content, administration, grading, and success level of the candidate.
3. Review documentation to ensure examination content is based on requirement elements as appropriate to the position.

Interviews:

1. Interview at least two operators in each work group and three line managers, including front-line supervisors, in each division to determine if their level of knowledge is adequate.
2. Make a short comprehensive examination, which will be administered to a selected group of division personnel by management. Division manager will provide to the LMES RA team the completed examination. Use this information to determine the adequacy of facility-specific facility knowledge.

Shift Performance:

1. Observe at least three simulations/evolutions performed by operating personnel to verify facility-specific level of knowledge is adequate.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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2. Observe at least two drills performed by operating personnel to verify facility-specific level of knowledge is adequate.

Personnel contacted/position:

- C. L. Lane, trainer in technical support
- R. J. Shelton, DSO training manager
- D. J. Martin, training records
- R. W. Buchanan, dimensional inspector
- V. K. Chandler, material controller
- K. F. Kesterson, QO, materials testing lab supervisor
- E. E. Howard, assemblyperson
- C. C. Jones, material clerk
- J. V. Ledbetter, disassembly supervisor
- J. D. Moretz, disassembly supervisor
- D. M. Nabors, D&A shift manager
- J. E. Radle, D&A department manager
- B. A. Scott, machine cleaner
- R. L. Smith, machine cleaner
- W. T. Thomas, process engineer
- E. W. Wade, maintenance coordinator
- M. D. Waldrop, DSO process engineer
- E. J. Walker, mechanical/physical properties technician
- M. K. Waters, QO, physical testing radiographer
- B. L. Witt, QO, physical testing, alternate supervisor
- M. W. Woody, assemblyperson

Records & other documents reviewed:

- Evidence Files C301DS, C501DS, and C501Q
- Training Module 14135, "Comprehensive Tests for Supervision, Welder, and Assembly Person"
- Training Modules 14134, 09187, 06501, 15003, 7807, 14592, and 14675
- Training records files for 12 Quality Organization (QO), two NCSD, two PSS, six DSO, and three FMO personnel

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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Evolutions/operations witnessed:

- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. No problems were noted in file C501Q.
2. FMO training files for a supervisor, electrician, and pipefitter were reviewed, and none contained qualification/certification documentation.
3. Interviews were conducted with D&A and QO personnel. Areas of inquiry included knowledge of compensatory measures, controls for non-qualified staff, purpose and requirements for qualification/certification conduct of operations, and procedural requirements. Operators' knowledge of compensatory measures, particularly mentor duties and responsibilities, was weak but adequate. The majority of those interviewed demonstrated knowledge deficiencies in the area of qualification/certification. Overall level of knowledge was adequate.
5. An August 13, 1995, letter in training records for two radiographers stated that all QO personnel for QE1 restart should be certified, except for the two radiographers. The letter said the two radiographers should only be "Qualified," since they were not assigned jobs within 9204-2E. Both of their names were on the list of personnel for D&A restart. A review of the radiographer's training records showed one was "qualified" and one was "certified." Therefore, the "qualified" radiographer should have been "certified," but his training records did not support his being certified.
6. Training records for two plant shift superintendents did not contain any certification/qualification documentation forms. There was documentation for all required courses listed on their GRQ forms.
7. Training records for two NCS specialists contained qualification documentation. Both files contained a memo from training records to D. F. Keyes stating there were deficiencies, expirations, or missing training modules based on November 1995 GRQ forms. There was no evidence that the missing training had been taken. The training file of one NCS specialist did not have documents to prove all required training was completed.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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8. Training records for two QO engineers did not contain documents for certification/qualification. Both had a document stating they were a "Qualification Certification Official." The medical documentation in one was missing and present in the other. Evidence records in both training files were incomplete.
9. The following problems with examination administration and grading were noted in QO:
 - a. An inspector's examination for module 9934, taken October 8, 1992, was not scored or the questions marked right or wrong.
 - b. A supervisor, dimensional inspection, took a module 7958 examination. The instructor eliminated one of the 50 questions as being invalid. The supervisor missed the invalid question plus 10 other questions. The instructor scored the test based on 50 questions (40/50) and gave the individual 80 percent (a passing grade), instead of 39/49 (79.6 percent), which is potentially a failing grade.
 - c. An examination in an engineer's training report titled "PT-PLT-100 Fissile Material Loading Limits" was not scored or the questions marked right or wrong.
 - d. On one examination identical questions were used. One test given for remediation was identical to the failed examination.
 - e. One comprehensive examination had a question that was not scored as correct or incorrect. The trainee had marked two answers to the questions, one of which was incorrect.
 - f. A radiographer (certified position) comprehensive examination had four examinations (PT 303, PT 374, PT 402, and PT 409) stapled together and graded as one examination. The examination score on the top page was written as 4 of 23 missed, 83%, and "Passed." Examinations PT 402 (Y50-55-PT-402, "Operation of 300kV Norelco") and PT 409 (Y50-55-PT-409, "Operation of 100kV Norelco") each had three questions. The last question on each examination asked the worker to match a diagram of the device with proper labels (there were 13 matches in each question to be made). The last question on PT 402 was crossed out and marked "NA" and had a written note "Does not use machine." The last question on PT 409 had been answered, and the worker missed eight of 13 matches, but this page was crossed out, initialed, and marked "NA." The four examinations were graded, minus the 26 points of the two crossed out questions, e.g., there were a total of 49 points on the four examinations, but the score was based on 23 points.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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11. The following problems with examination administration and grading were noted in DSO:
- a. An assemblyperson's tests for modules 14316 and 14317 had no score written on the test paper. Another assemblyperson's tests for module 14114 had no score written on the test paper.
 - b. A welder missed three of 15 questions (87 percent) on a module 14125 examination, but the score written on the test was 80 percent. This welder was qualified, not certified, in TMS 5058.
 - c. An assemblyperson's comprehensive examination, dated November 16, 1995, was marked with eight questions missed, but nine wrong answers were counted, making the score 88 percent, instead of the marked 89.6 percent.
 - d. An assemblyperson's comprehensive examination for module 14135, dated November 17, 1995, was marked with six questions missed. A recount showed eight questions were missed, thus the marked score of 92 percent should have been 89 percent.
 - e. One of three training module tests reviewed needed editing for misspelled words and sentence comprehension.
12. A "Level of Knowledge Examination" consisting of 20 questions selected from existing DSO module examinations was given to D&A personnel by the DSO training department. The questions were selected from courses required for all D&A personnel, and they covered a range of topics, i.e., procedures, conduct of operations (almost half of the questions), radiation safety, nuclear criticality safety, and lockout/tagout. The test was given to 19 workers selected by the training department. The average of all examination scores was 82.6 percent, and scores ranged from 70 to 90 percent. Five people scored less than 80 percent.
- a. The following three questions were missed by over 50 percent of those taking the examination. (The correct answer is in BOLD.)
 3. What is the purpose for a Job-Specific Radiological Work Permit? *(53 percent missed)*
 - a) To control routine or repetitive minor work activities such as inspections or tours.
 - b) **To control non-routine operations or work in areas with changing radiological conditions.**
 - c) To control non-routine operations for up to one calendar year.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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- d) To control routine work activities for the duration of a particular job.
11. During maintenance activities or outages, status controls on equipment and systems that do not affect facility activities *(63 percent missed)*
- a) are always relaxed.
 - b) are ignored.
 - c) **may be relaxed.**
 - d) can never be relaxed.

15. What can be used to communicate short term information to operations personnel?
(58 percent missed)
- a) Standing orders
 - b) **Daily orders**
 - c) Both A and B
 - d) None of the above

Most people selected answer "d" for #3, answer "d" for #11, and answer "c" for #15.

- b. The following three questions were missed by 25 to 50 percent of those taking the examination. (The correct answer is in BOLD.)

7. Who validates and directs getting a Lockout/Tagout system isolated and prepared for others to work on? *(26 percent missed)*
- a) **Issuing authority**
 - b) Service supervisor
 - c) Affected operator
 - d) Service person

Answers "b", "c," and "d" were equally selected by those who missed Question #7.

12. Drills are used to *(32 percent missed)*
- a) ensure workers arrive to work on time.
 - b) **develop and maintain a high state of readiness and teamwork.**
 - c) evaluate responses to normal operational situations.
 - d) classify qualification requirements.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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All those who missed #12 gave answer "c".

18. Any explanatory notes or information entered on a procedure *(26 percent missed)*
- a) must be initialed and dated.
 - b) should be in a pencil to allow erasing.
 - c) will require replacing the procedure with a new copy.
 - d) can only be made by management.

Answers "c" and "d" were given by those who missed #18.

The examination results were grouped by job titles to determine if there were specific questions that were missed. The four supervisor/manager personnel who took the examination averaged 85 percent (range was 80 to 90 percent). Three of them missed questions #12 and #15 (see above).

Assemblypersons (six each) and an assembly operations assistant averaged 80.7 percent (range was 70 to 90 percent), and three scored below 80 percent. Three of these workers missed questions #3, #7, and #12 (see above).

Material clerks and controllers (five total) averaged 83 percent (range was 75 to 90 percent) and one scored below 80 percent. All five of these workers missed question #15 (see above). Four workers missed question #11 (see above). Three workers missed question #3 (see above).

Two process engineers and a machine cleaner also took the examination, but no trends were noticed. The engineers scored 85 and 90 percent, and the machine cleaner scored 75 percent.

- c. Two questions on the examination required a short essay answer (see below).

19. Two workers have been assigned to work in an area that requires a Radiological Work Permit (RWP) for entry. One worker tells the other that he/she has read and signed the RWP for both of them. Is this an acceptable practice? Yes or NO

WHY? Each person must sign to indicate they understand the conditions of the area and the requirements for entry.

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-4 (CO-17)	Date: January 26, 1996
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20. To report a release or a spill, what actions should you take? (22 percent missed)

Call 911 or 4-7172, or pull the Gamewell Alarm

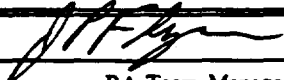
No one missed the "NO" answer to #19, but only 10 workers answered the "WHY?" essay in a way that indicated they understood the concept for the "NO" answer. Three workers' answers were similar to one that stated: "You are trained to sign your own name." Four answers showed an understanding between this poor response and the correct answer given above.

About six people interpreted question #20 to be how to control a spill, not how to "report" a spill. The "SWIM" concept of spill control was included in six answers. About 12 people gave a good response. Due to the confusion around the question's interpretation, no trends will be analyzed.

Four of the five most missed questions (72.5 percent of those taking the examination missed these four questions) were related to conduct of operations topics. Of all of the questions missed by those who took the examination, 69 percent were related to conduct of operations questions.

Conclusion:

Problems that related to administration, grading, and records of examinations that lead to qualification/certification were found in both D&A and QO. The problems in QO are far more significant than those in D&A. In one example, the comprehensive examination for a metallurgist was not properly graded, and the corrected grade was failing. Satisfactory completion of a comprehensive examination is a prerequisite for certification. The metallurgist was removed from work activities, but certification documents remained in place. Since QO support is not required, resumption of operations associated with C5 disassembly and the electron beam welders is warranted.

Inspected by: N. T. Ford R. K. McConathy	Approved by:  RA Team Manager Date: 2/7/96
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FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: January 26, 1996
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Method of Appraisal (short narrative description):

Objective

CO-18 There are sufficient numbers of qualified personnel to support safe operations.

Criteria

The numbers and qualifications of operating personnel necessary to perform the specified tasks defined in the operating procedures are adequate for normal and postulated emergency conditions.

Approach

Record Review:

Verify the numbers and qualifications of operating personnel required in the operating procedures are adequate for normal and postulated emergency conditions.

Interviews:

None

Shift Performance:

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

Personnel contacted/position:

- M. H. Hayes, FMO training manager

Records & other documents reviewed:

- Evidence files C301DI, C301PT, C302DI, and C302DS

FIELD NOTES

RA ASSESSMENT FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-5 (CO-18)	Date: January 26, 1996
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Evolutions/operations witnessed:


- See OP-2 for evolutions
- See OP-4 for drills

Discussion:

1. No problems were noted in any of the evidence files.
2. FMO personnel did not have evidence of required training to support D&A operations. The lack of documentation of key training requirements (e.g., fire protection system) precluded implementation of an effective control system. In addition, qualification requirements based on analysis had not been fully implemented in the FMO training program. Current qualification requirements were not updated with a new analysis date. An interview with the FMO training manager confirmed that FMO fire protection requirements were currently being identified and job identification was being done, but neither task was completed.

Conclusion:

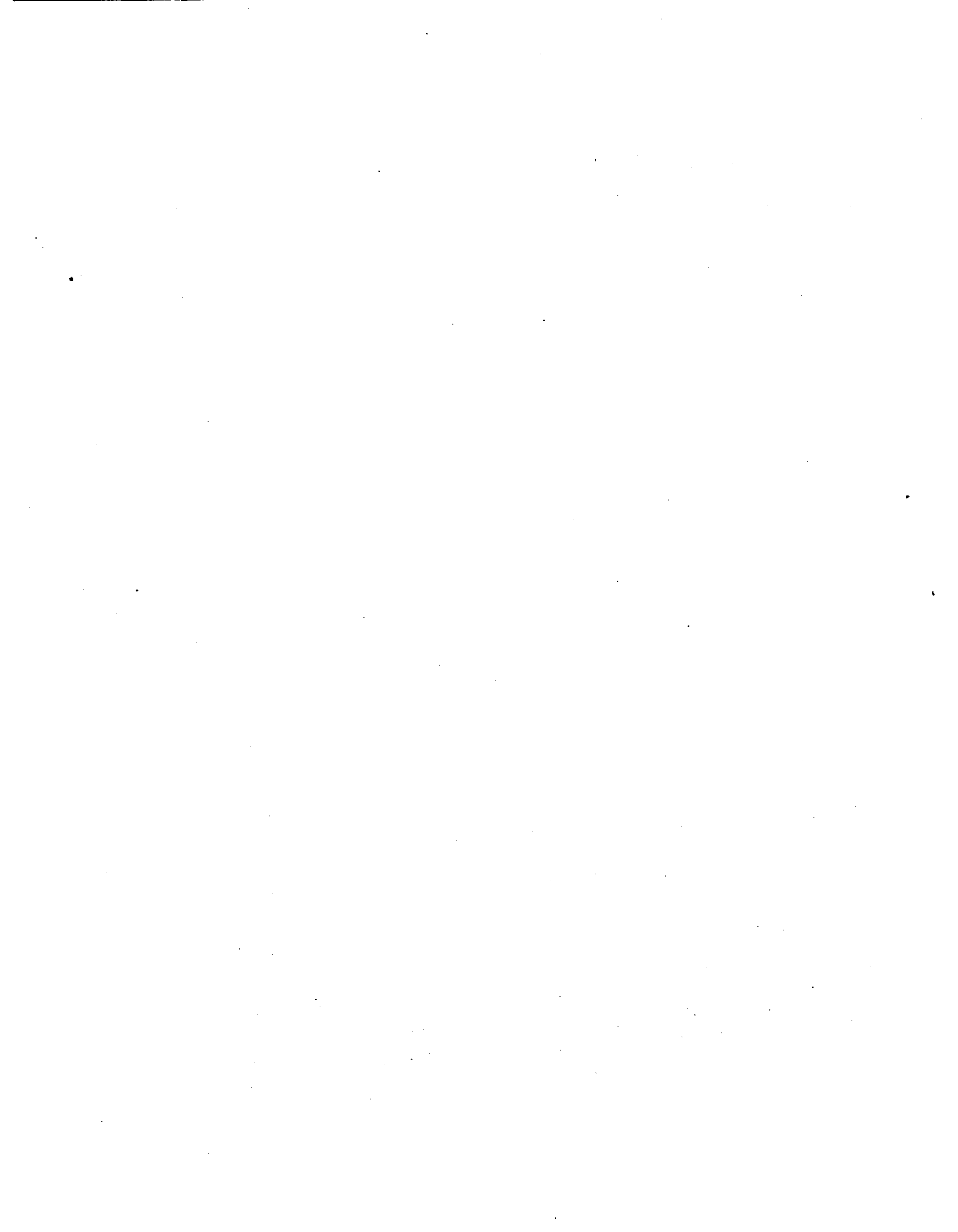
The numbers and qualifications of personnel to support resumption of operations associated with C5 disassembly and the electron beam welders will be adequate when all prestart findings for training and qualification are complete.

Inspected by: N. T. Ford R. K. McConathy	Approved by:  RA Team Manager Date: 2/7/96
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APPENDIX C

**Deficiency Forms
(Form 2)**



RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 19, 1996 ID #: RA-MG-5-2
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Requirement:

Timely resolution of reportable OSR, criticality safety, and radiological events.

Reference(s) (specific as to section):

DOE Order 5000.3B, Paragraph 8.b.(4) and 7.d.(2)

Finding _____

Observation: _____ **X** _____

Discussion:

Files for four disassembly and assembly occurrence reports submitted since January 1, 1995, were reviewed. The occurrences were for hoisting and rigging, criticality accident alarm, and fire protection system events. All remain open. Two occurred less than 45 days ago; the other two have been open over five months, which is well in excess of the 45 days specified in DOE Order 5000.3B, without a timely update to the 10-day report containing a detailed explanation of the delay and an estimated date for resolution. The issue of timely closure and updating of occurrence reports is the subject of Y-12 plant-wide action.

Finding Designation: Prestart _____ Post-Start _____	Inspector: <u><i>[Signature]</i></u>
Group Leader: <u><i>Ronald [Signature]</i></u>	Approved by: <u><i>[Signature]</i></u> RA Team Manager
Date: 1/24/96	Date: 1/24/96

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-5 (CO-29)	Date: January 20, 1996 ID #: RA-MG-5-1
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Requirement:

Personnel understand the safety messages communicated during the awareness sessions following the September 22, 1994, event.

Reference(s) (specific as to section):

Readiness assessment Plan of Action, Paragraph V.A.1, Causal Factors of the Precipitating Event, and Paragraph V.A.3, CO-29, last sentence

Finding _____

Observation: _____ X _____

Discussion:

During interviews, D&A and QO personnel indicated that they understand the basic safety message from the awareness sessions conducted after the September 22, 1994, event. However, the recall of some parts of the message and of the precipitating event is limited. For example, all remember a CSA violation (usually referred to as "minor") and the improper response to a criticality safety question, but none recalled the errors in the CSA revision and review process prior to the event. Most personnel indicated they thought that not much change was needed.

Finding Designation: Prestart _____ Post-Start _____	Inspector: <u>[Signature]</u>
Group Leader: <u>[Signature]</u> Date: <u>1/23/96</u>	Approved by: <u>[Signature]</u> RA Team Manager Date: <u>1/23/96</u>

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-4 (CO-27)	Date: January 18, 1996 ID #: RA-MG-4-1
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Requirement:

Noncompliances with the DOE Orders of interest to the DNFSB have approved schedules for gaining compliance.

Reference(s) (specific as to section):

Y/OA-6238, "Plan of Action for Disassembly/Assembly Activities," dated January 4, 1996, Section V.A.3 (CO-27)

Finding X

Observation: _____

Discussion:

The evidence files (C1005 and C1006) did not contain documentation that the RFAs associated with D&A activities had been formally approved by DOE. The D&A resumption manager said the criteria for meeting this core objective was that LMES management approved the RFAs. This does not constitute "formal" approval as required by CO-27. DOE has to concur with the RFA and indicate approval, or the RFA is not complete. Upon reviewing a sample of RFAs associated with D&A, the following were identified:

- RFA (CSA-47B) was not approved by DOE.
- RFA (CSA-131) was not approved by DOE.
- RFA (CSA-135) was not approved by DOE.
- RFA (CSA-160) was not approved by DOE.

Further review indicated that LMES management identified RFA, CSA-160, as being required prior to restart in a memorandum dated August 23, 1995, from the vice president, defense and manufacturing to the DOE-ORO, site manager. Concurrence was received from the DOE-ORO site manager on August 29, 1995.

Finding Designation: Prestart <u> X </u> Post-Start _____	Inspector: <u>Ronald D. Staff</u>
Group Leader: <u>Ronald D. Staff</u> Date: 1/19/96	Approved by: <u>JPT</u> RA Team Manager Date: 1/19/96

RA DEFICIENCY FORM

Functional Area: Management (MG)	CRA Number/Title: MG-3 (CO-)	Date: January 22, 1996 ID #: RA-MG-3-1
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Requirement:

Safety deficiencies are identified and corrected in a timely manner.

Reference(s) (specific as to section):

"Plan of Action for the Resumption of Disassembly/Assembly Activities at the Oak Ridge Y-12 Plant," Chapters V.A.1.a and V.A.3 (CO-27)

Finding _____

Observation: _____ X _____

Discussion:

The actions assigned and/or documentation in some ESAMS files does not support closure of the finding. Of seven files reviewed, two lacked adequate evidence to support closure.

In I0017881, the Request for Approval (RFA) form for implementation of DOE Order 5480.19 was not in the file. It was later determined that the RFA has not been approved by DOE.

In I0026018, the action was to provide additional training to support organizations. This does not completely address the finding that personnel need additional training on safe operation.

Finding Designation: Prestart _____ Post-Start _____	Inspector: <u><i>[Signature]</i></u>
Group Leader: <u><i>[Signature]</i></u>	Approved by: <u><i>[Signature]</i></u> RA Team Manager
Date: 1/23/96	Date: 1/24/96

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: OP-1 (CO-04)	Date: January 21, 1996 ID #: RA-OP-1-2
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Requirement:

CSAs are technically accurate.

Reference(s) (specific as to section):

CSA B2E-04
Drawing M2E92042EA014

Finding X

Observation: _____

Discussion:

The CSAs are not always accurate when describing the existing field configuration. They also allow conditions to exist that force the operator to rely on the CSA or memory to accomplish the task in a safe manner.

For example, several discrepancies or inconsistencies were noted regarding the requirements documented in B2E-04. They were as follows:

- a. At least six of 25 locations in the CSA were misleading. Although consistent with the criteria established by engineering (e.g., upper left corner of the array grid as depicted in drawing M2E92042EA014), significant differences between the actual and designated locations exist in some cases.

- b. The intent of CSA B2E-04 is to minimize operator error through the use of highly visible, local signs that clearly state the limiting conditions for each array. Accordingly, the operators have access to all the limits without having to refer to the CSA. However, many of the arrays described in the CSA indicated "none" regarding posted area signs. A foot note stated that "none" meant the requirements for CSA Sign #1 were automatically in effect. This practice places the burden of remembering the CSA requirements on the operator. The use of "none" is standard practice in the CSAs involving arrays. When asked, several of the facility personnel in the area said they were unsure of the requirements for arrays without signs.

Finding Designation: Prestart <u> X </u> Post-Start _____	Inspector: <u>George Zepandz</u>
Group Leader: <u>IM Denis</u> Date: <u>1/23/96</u>	Approved by: <u>[Signature]</u> RA Team Manager Date: <u>1/23/96</u>

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 22, 1996 ID #: RA-OP-1-3
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Requirement:

There are adequate and correct procedures for operating systems and utility systems.

Reference(s) (specific as to section):

CSA PT-RAD-200, "9204-2E Radiography, Handling, and Storage"
CSA DI-B2E-100, "Fissile Floor Arrays and Workstations"

Finding X

Observation: _____

Discussion:

Quality Organization (QO) Criticality Safety Approvals (CSA) contained vague, non-specific wording, which permitted operator latitude in interpreting requirements. The following are examples:

- a. In the requirements section of CSA PT-RAD-200, the terminology "etc." was used to describe types of containers (section 2.b.) approved for floor storage. In the clarifications section, "etc." was used to describe the equipment used to transfer components into or out of the X-ray area. The radiography supervisor was confused about the meaning of the use of "etc." He said it probably referred to CSA PT-PLT-100, "Fissile Material Loading Limits." The CSA should be specific and not contain nebulous terminology.

- b. CSA DI-B2E-100, "Fissile Work Stations and Fissile Storage Arrays," contained vague wording in two areas:
 - (1) Under proposed activity, "Various gages, micrometers, comparators, scales, etc., may be used at the fissile work stations during the dimensional inspection operations."

 - (2) Under clarification, "Tools, gages, etc., may be left unattended on the fissile work stations."

RA DEFICIENCY FORM

Functional Area: Operations (OP)	CRA Number/Title: OP-1 (CO-7)	Date: January 22, 1996 ID #: RA-OP-1-3
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- c. CSA PT-RAD-200 referred to four QE procedures and future new activities. The supervisor for the quality materials and equipment evaluations department was asked what "future new activities" meant. He said this was in the CSA in case something special would need to be radiographed in the future. Then the organization would be able to do it in accordance with this CSA.

Finding Designation: Prestart <u> X </u> Post-Start _____	Inspector: <u>Ronald D. Hoff</u>
Group Leader: <u>M. Quinn</u> Date: <u>1/23/96</u>	Approved by: <u>[Signature]</u> RA Team Manager Date: <u>1/23/96</u>

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-04)	Date: January 23, 1996 ID #: RA-SE-1-3
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- b. Operations and fire protection personnel did not take the appropriate actions when the surveillance test procedure requirements could not be met and verbatim compliance was not possible.

Finding Designation: Prestart <u>X</u> Post-Start _____	Inspector: <u>George Zingales</u>
Group Leader: <u>J. McQuinn</u>	Approved by: <u>J. P. Lynn</u> RA Team Manager
Date: <u>1/24/96</u>	Date: <u>1/24/96</u>

RA DEFICIENCY FORM

Functional Area: Safety Envelope (SE)	CRA Number/Title: SE-1 (CO-04)	Date: January 21, 1996 ID #: RA-SE-1-1
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Requirement:

Requirements of the OSR can be technically accomplished.

Reference(s) (specific as to section):

Procedure Y50-53-SO-031, "Surveillance of CAAS for Building 9204-2E"

Drawings E2E92042EA099, E2E92042EA100, E2E92042EA101

Finding _____

Observation: X

Discussion:

The "zone maps" used by the surveillance teams for the CAAS quarterly surveillance test to locate audible and visual alarms were not always accurate or optimally established. The following examples of zone map deficiencies were noted:

- a. Drawing number E2E92042EA100 shows only two audible alarms in Zone #8 to be verified during the test. While examining the two audible alarms in Zone #8 prior to activation, the surveillance team noticed an adjoining room with an additional audible alarm that appeared on drawing number E2E92042EA100 for Zone #11. Because of the current layout of the room, this alarm could not be readily accessed from Zone #11 by the responsible surveillance team during a test of the CAAS. Removal of this alarm from Zone #11 and adding it to Zone #8 would seem prudent.
- b. During a pre-test briefing by the zone leader, the Zone #21 surveillance team was instructed to also check speaker #1, which is in the area but shown on drawing number E2E92042EA099 for Zone #16, i.e., this speaker does not currently appear on drawing number E2E92042EA101 for Zone #21. The rationale for this deviation was that most of the alarms in Zone #16 are inside the material access area with speaker #1 as a notable (outside) exception. Therefore, during a surveillance test, the Zone #16 surveillance team would have a difficult time accessing Speaker #1, but the Zone #21 team would not.

Finding Designation: Prestart _____ Post-Start _____	Inspector: <u>Gregory Spaulding</u>
Group Leader: <u>J. M. Quinn</u>	Approved by: <u>J. P. Flynn</u> RA Team Manager
Date: <u>1/22/96</u>	Date: <u>1/22/96</u>

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-1 (CO-13)	Date: January 17, 1996 ID #: RA-TQ-1-2
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Requirement:

Comprehensive written and oral examinations and operational evaluations shall be prepared and administered to demonstrate that certified operator and certified supervisor candidates possess the required knowledge and skills. Certification may be granted only after all qualification requirements (including written and oral examination and operational evaluations) and other specified requirements...

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.8
 DOE Order 5480.20A, Chapter I.6.b

Finding X

Observation: _____

Discussion:

The comprehensive examination for a metallurgist was not properly graded. A recount of the items missed resulted in a failing score for that section of the examination. A remedial examination was not given for the failed section. Since satisfactory completion of a comprehensive examination is a prerequisite for certification, the metallurgist should now be considered decertified.

Finding Designation: Prestart <u> X </u> Post-Start _____	Inspector: <u> M. W. V. </u>
Group Leader: <u> M. W. V. </u> Date: <u> 1/20/96 </u>	Approved by: <u> [Signature] </u> RA Team Manager Date: <u> 1/21/96 </u>

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-2 (CO-14)	Date: January 22, 1996 ID #: RA-TQ-2-3
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Requirement:

N/A

Reference(s) (specific as to section):

N/A

Finding _____

Observation: _____ **X** _____

Discussion:

The training programs for DSO and QO do not contain fundamental and system training. The training programs consist almost entirely of health and safety compliance-based training and procedure-based training involving performance documentation check lists. Little attention has been given to fundamentals training and training that instructs operators on how and why systems, equipment, and processes function. Without fundamental training and integrated system training, the trainees may not be fully knowledgeable of procedural requirements, purpose, and response to unexpected or abnormal situation.

Finding Designation: Prestart _____ Post-Start _____	Inspector: <u> 7-2621 </u>
Group Leader: <u> 7-2621 </u> Date: <u>1/23/96</u>	Approved by: <u> [Signature] </u> RA Team Manager Date: <u>1/23/96</u>

RA DEFICIENCY FORM

Functional Area: Training (TQ)	CRA Number/Title: TQ-3 (CO-16)	Date: January 22, 1996 ID #: RA-TQ-3-2
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Requirement:

Continuing training programs shall be established to maintain and enhance the knowledge and skills of operating organization personnel who perform functions associated with engineered safety features as identified in the Facility Safety Analysis Report.

Reference(s) (specific as to section):

DOE Order 5480.20A, Chapter I.7.d

Finding _____ X _____

Observation: _____

Discussion:

The Quality Organization has not established and implemented a continuing training program.

Finding Designation: Prestart _____ Post-Start <u> X </u> _____	Inspector: <u> J-R-V </u>
Group Leader: <u> J-R-V </u> Date: <u> 1/24/96 </u>	Approved by: <u> [Signature] </u> RA Team Manager Date: <u> 1/24/96 </u>



APPENDIX D

Readiness to Proceed Memo

Internal Correspondence

MARTIN MARIETTA ENERGY SYSTEMS, INC.

Date: January 12, 1996

To: J. P. Flynn

cc: J. T. Fisher, F. P. Gustavson, M. K. Morrow, P. R. Wasilko

From: R. K. Roosa, 9113, MS-8208 (4-3793) - RC *PK*

Subject: **Readiness to Proceed - Lockheed Martin
Energy Systems, Inc., Readiness Assessment**

The Disassembly and Storage Management Self Assessment (MSA) was completed on December 8, 1995. The results are documented in *Management Self Assessment Report for the Resumption of Disassembly and Assembly Activities at the Oak Ridge Y-12 Plant, Y/OA-6248*. In summary, a total of 32 findings were received; 27 were screened as pre-restart and 5 were screened as post-restart. Of the 27 pre-restart findings, 26 are closed. The remaining finding deals with incorporating limits and conditions from Criticality Safety Approvals into procedures. The limits and conditions have been incorporated into the procedures that will be used for the Readiness Assessment. This will be completed for the remaining procedures by March 1, 1996.

During the MSA, execution of procedures in a step-by-step manner was noted as a significant weakness. Since the completion of the MSA, the procedures have been revised and additional dry runs conducted under the scrutiny of MSA team members. A continual maturation in executing these procedures has been noted.

Based on the closure status of the MSA finding and improvements made in procedure execution, I feel that we are ready to proceed with the Lockheed Martin Energy Systems, Inc., readiness on January 15, 1996.

If you have further questions, please contact P. R. Wasilko at 4-0499.

RKR:gfp

Concur:



F. P. Gustavson
Vice President
Defense and Manufacturing

1/13/96

Date