

Enclosure 11

Letter, Felton to Jackson

Dated: July 27, 1998

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DATE: February 9, 1998

REPLY TO
ATTN OF: DP-45:J. Kersh:3-2321

SUBJECT: DEPARTMENT OF ENERGY OPERATIONAL READINESS REVIEW OF THE
ENRICHED URANIUM OPERATIONS, PHASE A, AT THE OAK RIDGE Y-12 PLANT

TO: James C. Hall, Manager, Oak Ridge Operations Office

Thru: Robert W. Poe, Assistant Manager for Environment, safety, and Quality

Attached is the final Implementation Plan, which will be used to conduct the Department of Energy (DOE) Operational Readiness Review of the Enriched Uranium Operations, Phase A, in accordance with the Plan-of-Action. It was developed using the requirements and guidance contained in DOE Order 425.1 and its associated Standard, DOE-STD-3006-95. This plan has been coordinated with internal and external oversight organizations, and final copies have been provided to them.

The team is both prepared and fully qualified for the assessment. We are ready to begin at your direction. Currently, we are planning to begin on March 23, 1998, and should be finished within a period of two weeks.

If you have any questions, please call me at (301) 903-8026.

Jeffrey Roberson
Team Leader
EUO ORR

Attachment

cc w/ attachment:
Mark Sundie, YSO
P. Aiken, DP-24
Wayne Andrews, DNFSB
Don Owen, DNFSB
L. A. Felton, LMES
Team Members
R. Lagdon, EH-22

Y-12 SITE
Audit Response Center

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cc w/o Attachment
Bob Spence, YSO
Dale Jackson, YSO
Joe King, DP-45

**DEPARTMENT OF ENERGY
IMPLEMENTATION PLAN FOR OPERATIONAL READINESS REVIEW OF
RESUMPTION OF ENRICHED URANIUM OPERATIONS, PHASE A,
AT THE OAK RIDGE Y-12 PLANT**



February 1998

**U.S. Department of Energy
Washington, D.C. 20585**

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IMPLEMENTATION PLAN FOR OPERATIONAL READINESS REVIEW FOR THE RESUMPTION OF ENRICHED URANIUM OPERATIONS, PHASE A

The Plan-of-Action (POA) for conduct of this Operational Readiness Review (ORR) was approved by the Manager, Oak Ridge Operations Office (ORO), James C. Hall, on 8/27/97. This Implementation Plan (IP) defines the conduct of the DOE ORR.

1.0 INTRODUCTION

The Department of Energy (DOE)-Oak Ridge Operations (ORO) has directed that an ORR be conducted in accordance with DOE O 425.1, *Startup and Restart of Nuclear Facilities*, prior to authorization to resume Phase A Enriched Uranium Operations (EUO) at the Oak Ridge Y-12 Plant. This IP defines the parameters and activities of that ORR, the purpose of which is to evaluate the adequacy of the readiness of Phase A EUO processes to safely restart.

The facilities involved in this restart process enriched uranium from dismantled nuclear weapons into a form suitable for long term storage; produce or recover enriched uranium from research reactor fuel; recover enriched uranium from salvage materials to support accountability; and provide purified metal to non-weapons customers.

The EUO restart is being conducted in two phases. The first, Phase A, is the subject of this ORR and involves restarting operations for the accountability and casting functions of Building 9212, and the machining, rolling, and forming functions of Building 9215. The designation as a restart is the result of a contractor directed stand-down that has lasted more than one year. DOE Order 425.1 requires the successful completion of contractor and DOE ORRs and resolution of identified issues prior to restart of an existing nonreactor nuclear facility shut-down of more than one year.

Phase A has been subdivided into two phases, A1 and A2. Phase A1 will cover the metal working (casting, machining, rolling, and forming) operations and some supporting accountability processes. Phase A2 will cover the remaining Phase A accountability processes. The specific processes and systems included in each phase are identified in Table 1 of the LMES Plan-of-Action (Rev. 3, dtd 16 Jan, 1998). Programmatic aspects of both phases will be covered during Phase A1 to the maximum extent possible. Final decisions regarding the scope of the A2 programmatic reviews is deferred to the conclusion of Phase A1.

The DOE will conduct this ORR in conformance with the ORR POA and as described in this IP. The Manager, ORO, has selected an ORR Team Leader who in turn selected the Senior Safety Advisor and approved Technical Experts for the ORR. This group forms the team membership who develop the scope, schedule, and Criteria Review and Approach Document (CRAD).

The Oak Ridge site is a government-owned contractor-operated (GOGO) site Southwest of Knoxville, Tennessee. Lockheed-Martin Energy Systems (LMES) is contracted to manage and operate the site.

1.1 Background

In September of 1994, personnel in the container storage operations were observed violating criticality safety controls associated with material storage arrays at Y-12. The array was not immediately placed under required control and neither the Nuclear Criticality Safety Department nor the Plant Shift Superintendent were notified as required by plant training and procedures. After an investigation, Y-12 management imposed a general stand-down on most activities, including those in EUO. The stand-down was intended to provide time for improvements in organizational performance and management of safety in daily operations.

1.2 Facilities under Review

The facilities being restarted in Phase A are the operations areas in Building 9212 and 9215, of the EUO Organization at the DOE Y-12 Plant. This ORR is for a Process Based Restart, focusing on those operations identified as "Phase A" in the DOE POA. Building systems important to the maintenance of the safety envelope and which support these Phase A operations are also subject to review. Process changes and facility modifications were made during the stand-down to upgrade performance or bring individual processes into compliance with requirements as specified in the safety basis documentation. Both Buildings 9212 and 9215 have been classified as Hazard Category 2.

Building 9212

Casting Operations Area. The enriched uranium casting operation uses vacuum-induction casting furnaces, metal shearing and breaking, light machining, and casting by-product handling.

Accountability Operations Area. The enriched uranium accountability operations are performed by bulk reduction, dissolution, and evaporation. Enriched uranium is placed in cans and safe bottle arrays for in-process storage. The dissolution process is supported by the chemical makeup, organic treatment, and nitric acid and aluminum nitrate cycle operations located in another building. Uranium oxides are produced from an uranyl nitrate solution using dissolution, precipitation, furnaces, and particles-sizing processes conducted within the Building. Shipping and receiving are also conducted at this building.

Ancillary operations (such as exhaust fans) are located in adjacent buildings, in C-Wing, or on the Building 9212 roof. Radiography and density inspections are performed in Building 9981.

Building 9215

Machining Operations. The enriched uranium machining operations are conducted in M-wing of the building. They are performed on numerically-controlled/manually-operated lathes, mills, borers, and grinders. Significant support equipment for these operations includes chuck vacuums and machining coolant systems. The enriched uranium chips produced by machining operations are transported to Building 9212 for further processing or storage. The uranium chip processing includes cleaning, drying, and briquetting prior to recasting.

Rolling and Forming Operations. Enriched uranium rolling and forming are performed in the "O" wing of 9215. Equipment and operations necessary to produce a wrought part include the following: molten salt baths, a rolling mill, water rinse systems, mechanical leveling and shearing, heat treatment ovens, hydro form, and several material conveyance devices. Dimensional inspections are performed in an adjacent building.

2.0 PURPOSE

The purpose of this IP is to provide both the CRAD, and the guidelines for conduct of the ORR for resumption of Phase A enriched uranium processing in Buildings 9212 and 9215. The ORR will verify that the facility is ready to resume conduct of the specified operations and operate safely. Activities and systems associated with other operations conducted within Building 9212 and 9215 that do not impact or that are not required for the safe execution of enriched uranium operations, will not be assessed during this review. This IP was prepared using the guidance contained in DOE O 425.1 and the ORR Technical Standard, DOE-STD-3006-95.

3.0 SCOPE

An ORR is a disciplined, systematic, documented, performance-based examination and verification of line management's ability to achieve, prove, and document readiness of the facility or process to conduct work safely. The DOE ORR will be conducted using a performance-based review approach, yet it is not intended to duplicate or be redundant with the LMES ORR.

The DOE ORR will focus on an assessment of the scope, adequacy, and accuracy of the LMES ORR process to verify readiness of hardware, personnel, and management programs for operations. The LMES ORR will provide the primary basis for acceptance of readiness. The DOE ORR will assess the scope of the contractor ORR and include actual verification of a sampling of contractor ORR results. The DOE ORR will assess the effectiveness of the contractor's preparations through actual demonstrations of normal operations, abnormal events, emergency drills, etc. The DOE ORR will also assess the readiness of responsible DOE line organizations to safely manage operations and the effectiveness of coordination among organizations.

The current EUO Organization was established in August 1997. It is the landlord for Buildings 9212 and 9215 and is the responsible organization for overall facility safety. Two tenants, the Product Certification Organization and the Analytical Services Organization, operate processes that will be started during Phase A. Responsibilities and interfaces between EUO and the two tenants are defined in plant procedures and landlord/tenant agreements. The definition and functionality of these responsibilities and interfaces will be reviewed as part of the ORR. The tenants' processes (including procedures, training, and qualification) will also be under the purview of this ORR as well.

Other Y-12 organizations will be included in the scope of this ORR only as their services actively support processes and activities associated with restart.

The breadth of the ORR as defined in the POA is reflected in this IP for Resumption of EUO Operations at Y-12 and will include the core requirements specified in DOE O 425.1.

The depth of the ORR is defined in the CRAD which is found in Appendix 2. The CRAD serves as the principal means by which the ORR team will verify the readiness of systems, processes, personnel, and management programs to restart safely.

The depth of the Phase A2 ORR will include, as a minimum, observation of processes and safety basis implementation associated with the EUO chemical recovery and accountability Phase A processes not evaluated in Phase A1. Appropriate drills will be included in the Phase A2 review. Records, applicable to Phase A2 only, will also be reviewed. Operators of Phase A2 processes not interviewed in Phase A1 will be interviewed. The breadth and depth of other interviews, programmatic discussions, and record reviews during Phase A2 will be determined subsequent to the Phase A1 ORR and will be based, in part, on the Phase A1 results in these areas.

4.0 ORR PREREQUISITES

Prerequisite conditions have been identified by LMES and DOE in their respective POAs that must be satisfied prior to the ORR. These prerequisites include processes, personnel, and management programs that must be in-place. This IP includes no additional prerequisites.

5.0 OVERALL APPROACH

Overall, the ORR will provide DOE senior management with independent, objective evidence of the readiness to restart Phase A enriched uranium operations. It will also confirm that DOE has formed an overall management team that is adequate to assure the safety, health and environmental compliance of operations.

5.1 Contractor Readiness-to-Proceed Memorandum

Upon completion of the contractor ORR, 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 Contractor will issue a Readiness-to-Proceed memorandum. The DOE ORR will not begin until the Contractor has issued this memorandum and the Y-12 and ORO have endorsed the memo, signifying agreement with the contractor's assessment of readiness. The Y-12 and ORO endorsement of this memo will also specify the readiness of Y-12 and ORO personnel and oversight programs to support restart of Phase A EUO operations.

5.2 Operational Readiness Review Team

Prior to commencement of onsite ORR activities, training of team members will be conducted and will consist of site and facility familiarization, necessary radiological and safety training for facility access, facility program status, and familiarization with the ORR IP and associated CRADs. Each team member has assessment experience or appropriate training. No team member has any connection with Phase A EUO operations that impacts their independence to review assigned functional areas. By their selection the Team Leader certifies that each Team Member is technically competent, has assessment experience, is independent and, through the familiarization process described above, is familiar with the facility. These qualifications will be formally documented. Team biographies are contained in Appendix 1.

Briefings on the conduct and results of the ORR will be provided to the Manager, ORO for information and to help form a basis for a decision regarding restart. The Manager, ORO may grant permission to commence operations based on the recommendation of the ORR team and resolution of all pre-start findings. Briefings will also be presented to key senior managers, and others as requested or deemed necessary.

5.3 Conduct of the ORR

As a preliminary step, prior to the Approval Authority's approval to commence the DOE ORR, the team will review the scope of the LMES ORR to determine its adequacy and completeness. This review of their scope assisted in the development of the ORR's CRAD. The ORR team has developed the CRAD for this readiness review. The CRAD provides the defined bases for conducting the ORR within the context of the scope set forth by the Core Requirements of DOE O 425.1. The breadth of the ORR is defined in the DOE POA which amplifies the core requirements through the use of core objectives, and provides the geographic scope of the facilities supporting the processes to be restarted which are subject to this review. It is through the criteria specified in the CRAD that each of the applicable Core Requirements of DOE O 425.1 will be evaluated. Each CRAD identifies, by number, the Core Requirements that it will address.

The CRAD for the enriched uranium ORR was developed using the guidance provided in Appendix 4 of DOE-STD-3006-95. The criteria are based on the combined expertise of the Team Members, DOE orders, and other requirements, the potential hazards of EUO operations, and the input of internal and external review groups.

A graded approach, as described in Appendix 1 of DOE-STD-3006-95, was used to select the elements for this DOE ORR. Factors such as relative importance to safety, magnitude of hazards involved, complexity of the activity or operation, magnitude of risk, confidence in site-wide programs, frequency and depth of internal and external reviews of programmatic areas were considered during the development of the CRAD. Each ORR Team Member developed CRADs for their areas of review responsibility.

The ORR will be conducted using a performance-based review approach. A performance-based review is a systematic approach of evaluation based on the level of adequacy and effectiveness at which requirements have been established and implemented for the level of knowledge and skills required for competent job performance. Three basic methods of appraisal will be used during the field verification: interviews, document reviews, and observations. Identification of the method of appraisal for each focus area was included in the CRAD. Consistent with the DOE POA, the DOE ORR will start with an assessment of the adequacy and accuracy of the LMES ORR. The

DOE ORR will look closely at the effectiveness of the contractor's preparations through actual demonstrations of normal operations, abnormal events, and emergency drills as well as verification of DOE line management's readiness.

A Senior Advisor is assigned to this ORR to: (1) assist the Team's leadership in the exercise of their responsibilities; (2) provide guidance to the Team Members; (3) identify the issues to be addressed during the ORR; (4) approve the CRAD; and (5) assist the Team leader in writing the Final ORR Report.

The Team will meet daily during the onsite review. These meetings permit the Team Members to discuss significant observations of problems identified during the day and allow the Team Leader to identify any trends or areas where more detailed information may be required. It also highlights potential schedule difficulties or possible information gaps so they can be flagged in time to take corrective action.

Quality assurance of the review process will be the responsibility of the Team Leader and the Senior Safety Advisor and includes Team Leader approval of all DOE ORR Team Members, and daily onsite review of the findings of the Team Members. Coordination with the Office of Environment, Safety, and Health (EH) will be conducted via staff interaction in accordance with the requirements of DOE O 425.1.

6.0 ORR DOCUMENTATION PROCESS

During the onsite review, documentation of strengths or weaknesses and the assembly of objective evidence of operational readiness will be the responsibility of the Team Members. Each Team Member's assessment from his review will be submitted to the Team Leader and Senior Safety Advisor via Assessment Forms (Form 1) and Deficiency Forms (Form 2), where applicable. Their recommendation from their functional area regarding the readiness to restart enriched uranium operations will be included.

6.1 Forms

Form 1, the Assessment Form, will be used to document the methods and actions taken by a Team Member in their criteria evaluation process. Each Form 1 is designed to cover a specific objective and lists the means the Team Member used to measure the site's performance relative to the objective provided in the CRAD. Each Form 1 will be complete enough for an outside agency reviewing the form to follow the inspection logic and means used to verify the site's performance with respect to the objective and validate the ORR's completeness and adequacy. Any deviation from the described CRAD will be explained. The conclusion will specify whether the particular objective was met.

Form 2, the Deficiency Form, will be used to document the issues identified during the review and evaluation process. A Form 2 will be generated for each issue related to a particular objective which is not met.

6.2 Finding Classification

A single issue or a group of related issues which have been documented on Forms 2 may constitute a finding. The Team Leader and Senior Safety Advisor, in consultation with the applicable Team Member, have 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. Each final Form 2 will document this determination.

6.3 Lessons Learned

The Team Leader will report any problems or successes specific to the conduct of this ORR and document them as Lessons Learned to aid future ORRs and will incorporate them into the final report. These will include Lessons Learned with respect to the ORR process itself, technical issues relating to the safe operation of DOE facilities, and interface with the EH organization in the ORR process.

6.4 Final Report

The Team Leader will develop a report to document the results of the ORR and to provide justification for the Team's recommendations. The report will identify any deficiencies found in the review and will characterize the time frame for their resolution.

Team Members will be asked to concur in the DOE ORR report in the area of the scope. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The DOE ORR report will be transmitted by the Team Leader to the Manager, Oak Ridge Operations Office.

The final report will adhere to the following format:

TITLE PAGE - The title page is the report cover and will state the subject and date(s) of the ORR.

SIGNATURE PAGE - This page will be used by the Team Leader to promulgate the final version of the report.

TABLE OF CONTENTS - The table of contents should 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 findings, and the readiness determination with appropriate recommendation. Additionally, there shall be a statement as to whether any identified non-conformances or schedules for gaining compliance with applicable DOE orders, directives, SENs, and Standards/Requirements Identification Documents have been justified in writing, have been formally approved, and in the opinion of the ORR Team maintain adequate protection of the public health and safety, worker safety, or the environment.

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

ORR EVALUATION - For each functional area, the report will discuss the objectives, the pre-start and post start findings, and provide conclusions as to readiness to commence operations. Justifications for each finding are provided. Details are contained in Volume II of the report.

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

APPENDIX - Team Compositions and Qualification Summaries.

VOLUME II - ORR Assessment and Deficiency Forms (Forms 1 and 2).

VOLUME III - IP and CRAD.

Dissenting opinions, included in the appendices, give the individual Team Members an opportunity to voice concerns that they feel were not adequately addressed in this report.

7.0 Schedule

The ORR will commence when directed by Manager, ORO. The onsite portion of the review will take approximately 10 days for Phase A1 and up to ten days for Phase A2. The draft DOE ORR reports will be completed onsite. It is anticipated that the report for Phase A2 will be promulgated as a supplement to the Phase A1 report. Team Members will be afforded the opportunity to review the final report prior to its issuance. The final report should be ready for issuance within one (1) week after the end of the onsite review.

APPENDICES

Appendix 1: Team Assignments and Qualification Summaries

Appendix 2: Criteria and Review Approach Documents (CRAD)

Appendix 3: Finding Classification Criteria

Appendix 4: ORR Assessment and Deficiency Forms

APPENDIX 1

TEAM ASSIGNMENTS AND QUALIFICATION SUMMARIES

TEAM ASSIGNMENTS

<u>CRAD/Team Assignment</u>	<u>Team Member</u>	<u>Organization</u>
Team Leader	Jeffry Roberson	DOE-DP
Senior Safety Advisor	Ted Lewin	Sonalysts
Administrative Asst.	Jo Kersh Donna Clevinger-Egan	DOE-DP PAI
Enriched Uranium SME	Jon Nielsen	LANL
Configuration Mgmt. (CM)/ Engineering Support (ES)	Dawn Kristensen	DOE-AL
Criticality Safety (CS)	Douglas Outlaw	SAIC
DOE-OR (DOE)	Ken Ferlic	DOE-DP
Fire Protection (FP)	James Bisker	DOE-EH
Industrial Safety (IS)	Geoffrey Gorsuch	DOE-OH
Management (MG)	Xavier Ascanio	DOE-DP
Maintenance (MT)	Ken Kellar	DOE-DP
Operations (OP)/Procedures (PR)/ Emergency Preparedness (EP)	Bill Webb Doug Dearolph	XL Associates DOE-SR
Quality Assurance (QA)	Paul Chimah	DOE-DP
Radiation Protection (RP)	Doug Minnema	DOE-DP
Safety Envelope (SE)	Dave Odland Jim Winter	Sonalysts DOE-DP
Training (TR)	David Roth	DOE-DP
Waste Management (WM)	Ray Cooperstein	DOE-DP

Team Biographies

Jeffrey Roberson is a Nuclear Engineer with DOE DP. He holds a B.S. in Nuclear Engineering from the Georgia Institute of Technology. He has 15 years experience in the nuclear field. He spent the first years of his career at the E.I. Hatch Nuclear Generating Facility of the Georgia Power Co., in Baxley, GA in the reactor controls division during a refueling outage and subsequent startup. He then served in the Navy's Nuclear Power Program as a division officer aboard a nuclear submarine completing overhaul, startup testing, and sea trials. He was certified as a Chief Nuclear Engineer by the Naval Reactors Branch of the DOE. As a result of his Navy and civilian experience, he has a significant background in many areas of nuclear operations, maintenance, health physics. He spent one year as a program manager for a major acquisition program for the Department of the Navy. Mr. Roberson joined the Defense Programs Office of Inspections as a Team Leader for the 1992 DP TSA at the Lawrence Livermore National Laboratory and Functional Area Leader on several other TSAs. Mr. Roberson served on the ORR of Pantex Zone 4 and the Replacement Tritium Facility at the SR in the Conduct of Operations area. He was the Assistant Team Leader for the RFFO Building 707 ORR and participated in Building 371 ORR, and reviewed the maintenance area for the F-Canyon ORR. Mr. Roberson led the Operations group for the ORRs of the FB-Line, the In-Tank Processing Facility, and the Defense Waste Processing Facility. He was the Team Leader for the RA of Receipt, Storage, and Shipment Operations at the Y-12 Site in Oak Ridge, and was the Senior Advisor for the RA of Disassembly/Assembly Operations also at the Y-12 Site and the ORR for the startup of vitrification operations at the West Valley Demonstration Project. He was a primary author of the DOE order and standard on ORRs and RAs. He completed the DOE response to the successfully closed DNFSB Recommendation 92-6 regarding the startup and restart of DOE Nuclear Facilities.

Xavier Ascanio has more than 17 years of experience relating to management of nuclear facilities and operations. His education includes a BS degree in electrical engineering from Northeastern University (1980), the equivalent of an MS degree in Nuclear Engineering from the U.S. Navy Nuclear Propulsion Program, and an MS degree in Technology Management from the University of Maryland (1990). Following completion of his undergraduate degree, Mr. Ascanio was commissioned as an officer in the U.S. Navy, completed Nuclear Propulsion Training, and was assigned as a Division Officer on the USS Florida (SSBN 728). Mr. Ascanio served on the USS Florida during new construction, initial criticality, sea trials, shakedown operations, and the transition to normal operations. While attached to USS Florida, Mr. Ascanio served as Division Officer responsible for management of the ship's Interior Communications, Reactor Controls, and Auxiliary Divisions. His collateral duties during this time included Engineering Department Training Officer and Ship's Quality Assurance Officer. In February of 1985 Mr. Ascanio separated from U.S. Navy active duty to pursue a career as a civilian. During This time, Mr. Ascanio worked briefly as a consultant advising the Naval Sea Systems Command on matters relating to design, construction, maintenance, testing and operation of nuclear submarines. Subsequently, he spent three years with the Strategic Systems Program Office where he was the Head of the Electrical Design Unit of the Ship Installation and Control Branch. In 1988 Mr.

Ascanio joined the U.S. Department of Energy Defense Programs. Mr. Ascanio has served in a number of leadership positions relating to operation of nuclear facilities including Savannah River Restart Office, Rocky Flats Program Office, and currently serves as Defense Program Coordinator for the DOE Core Technical Group.

James Bisker is a Fire Protection Engineering with DOE EH. He holds a B.S. in Fire Protection Engineering from the University of Maryland, and is a Registered Professional Engineer in the Commonwealth of Virginia. He has over 16 years experience in Fire Protection Engineering, six of which has been concerned with performing fire protection program oversight activities for the Department of Energy. Prior to working for the DOE, he served as the fire protection department head for a Washington, D.C. based A/E firm and was responsible for a diverse group of fire protection designs among various occupancies. He also has experience as an engineering designer and consultant with two private fire protection engineering organizations. He currently represents the DOE on the National Fire Protection Association Standard No. 72, The National Fire Alarm Code.

Paul Chimah has a degree in Mechanical Engineering. Before joining DP-45 he served as a Senior Engineer responsible for analyzing and reviewing Savannah River Restart activities for Quality Assurance including Environment Impact Statement (EIS) and Safety Evaluation Report for the Restart of K-Reactor at Savannah River. He has 15 years experience in design and construction of nuclear power plants as a Senior Engineer with Burns and Roe, Inc. During this period he worked at sites as a consultant at Toledo Edison's Davis Besse Nuclear Station, Illinois Power Company's Clinton Power Station and Washington Public Power Supply System's at WNP-2. Mr. Chimah developed DP policy for implementation for DOE Order 5700.6C and specific guidance on the implementation of DOE Rule 10 CFR Part 830.120, Quality Assurance Requirements. Mr. Chimah conducted several quality assurance audit/appraisal at K-Reactor facility with SRSPD Safety Oversight Division. He recently conducted the Nuclear Explosive Safety (NES) Appraisal at Pantex Plant along with DOE Albuquerque Operation Office.

Donna Clevenger-Egan is a Senior Quality Assurance Analyst with PAI Corporation, serving the DOE-ORO Office of Environment, Safety, and Quality (ES&Q). She holds an A.A. in Office Administration. Ms. Clevenger-Egan has supported the DOE-ORO reservation as a contractor for 19 years, including eight years of technical and staff support to QA related missions, and over seven years of management experience. During her time with PAI, she has supported several ES&Q missions including development of the Functions, Responsibilities, and Authorities Manual in response to the DNFSB Recommendation 95-2, active member of the ORO Occurrence Reporting and Processing System (ORPS) and the Integrated Safety Management System Task Teams. As review team coordinator, she has participated in several ES&Q related reviews including the Y-12 Readiness Assessments for Receipt, Storage, and Shipment Readiness Assessment and Disassembly and Assembly Operations, K-25 Deposit Removal Operational Readiness Review, K-25 Site Type A Accident Investigation, ES&Q Pilot Assessment of the Oak Ridge National Laboratory (ORNL), ORNL GAAT Readiness Assessment, and the ORNL TWRF Readiness Review. Her most recent review experience was Team Member for the DOE-

ORO Observation and Verification of the BNFL Readiness Assessment Activities at the East Tennessee Technology Park. She completed the Operational Readiness Review training in December 1994.

Raymond Cooperstein is a Physical Scientist with DOE DP. He holds a B.S., M.S. and PhD in Chemistry from the College of the City of New York, Syracuse University and Pennsylvania State University, respectively. He has 50 years of experience in the nuclear field with contractors such as General Electric Company in Cincinnati, Ohio and at the Hanford Site where he was involved with applied materials research and development in the nuclear fuel cycle, the Lawrence Livermore Laboratory in Livermore, California where he was involved in high-temperature materials research and development efforts in the Pluto and Plowshare Programs. His works have resulted in the submission of over 25 invention disclosures and the granting of 12 patents. Dr. Cooperstein joined the Nuclear Regulatory Commission in 1975 as a Chemical Engineer in the Nuclear Materials Safety and Safeguards Division where he was involved in the licensing of non-reactor nuclear facilities in the commercial sector. He has been with DOE since 1980 and has served in both the Office of Environment, Safety and Health as a Nuclear Safety Engineer and the Office of Defense Programs as a Physical Scientist for the past decade where he has been involved with projects involving nuclear materials production, waste management, standards development, and National Environmental Protection Act (NEPA) documentation development.

Doug Dearolph holds a B.S. degree in Mathematics from the University of South Carolina and an M.B.A from Georgia State University. He has 20 years of experience related to the nuclear industry. The first 11 years were spent in the Naval Nuclear Propulsion program. He served both as division officer and department head on nuclear submarines. He was certified as a nuclear engineer officer by the Naval Reactors division of DOE. The remaining 9 years have been at the Savannah River Site (SRS); 3 years with the Westinghouse Savannah River Company and 6 years with the Department of Energy. Mr. Dearolph has held various positions at SRS including certification as Reactor Supervisor and Shift Manager at K Production Reactor, qualification as a DOE Facility Representative for K-Reactor and as Technical Support engineer for the Savannah River Special Project Office. As both a DOE and WSRC employee, he has participated in team inspections and had direct responsibility in several different areas of nuclear plant operations. These areas included: technical specifications, safety evaluations, configuration management, safety analysis, project management and systems engineering, design engineering, conduct of operations and conduct of maintenance. Mr. Dearolph was involved in the K-Reactor Restart Program from development of the improvement programs through implementation and the successful completion of the Power Ascension Test Program. Mr. Dearolph's team participations include: DOE-SR Validation for the restart of both F-Canyon Phase I and FB-Line Operational Readiness Reviews, Integrated Safety Management Systems Phase I Review at the Savannah River Site and Phase II Review at the FB-Line facility. He served as the DOE-SR restart manager for the restart of F-Canyon Phase II processes. Mr. Dearolph is currently assigned as the DOE Senior Facility Representative with principal responsibilities which include the direction of oversight for the operation and surveillance of the nuclear chemical facilities located within F-area of the Nuclear Materials Stabilization Division.

Kenneth P. Ferlic is currently the Senior Technical Advisor in the Office of the Associate Deputy Assistant Secretary for Technical and Environmental Support. He is a physicist with an MS in nuclear/radiation physics, and 24.5 years of experience in the nuclear sciences and engineering. He is currently certified by the American Board of Health Physics, and was a Nuclear Regulatory Commission license examiner for Westinghouse pressurized water reactors, research reactors, and fuel handlers. His technical background included both line management and staff work in the functional areas of: radiation effects, health physics, medical physics, training, human development, reactor and nuclear engineering, operations, emergency preparedness and response, management, nuclear research, and weapons effects as applied to: Naval reactors, radiation experimentation facilities, nuclear weapons, and production facilities. Mr. Ferlic has worked for the U.S. Navy, U.S. Navy Medical Service Corps, Defense Nuclear Agency, Nuclear Regulatory Commission, and the Department of Energy. As a Department of Energy employee, Mr. Ferlic has served as: the Office of Environmental Health and Safety (EH), Program Manager for Radiological Protection and Emergency Preparedness and the Acting Director of the EH Site Resident Programs: Director, Technical Training Programs for the Office of Training, Recruitment and Staff Developments, and the Deputy Director and subsequent Acting Director for the Defense Programs Office of Research Development and Testing Facilities. He has participated in numerous independent assessments, team assessments and appraisals including Operation Readiness Reviews, and has lead four DOE functional technical safety appraisals. Particular to the Oak Ridge Operations Office, he lead the 1989 Program Appraisal of Radiological Protection at the Martin Marietta Energy Systems at the Oak Ridge complex and participated on the 1993 review of the Oak Ridge Operations Office Management of Reactor Operations.

Geoffrey Gorsuch is an industrial hygienist with the DOE Ohio Field Office. He has a B.A. in Zoology from Miami University (Ohio), and has done graduate work at the University of Cincinnati Institute of Environmental Health. He has 17 years experience in industrial hygiene. He first worked as an industrial hygienist doing field surveys for the National Institute for Occupational Safety and Health (NIOSH), and later a NIOSH contractor. He next worked as a compliance officer for the U.S. Occupational Safety and Health Administration (OSHA). He has worked for the Naval Sea Systems Command as the industrial hygienist for new, problem, or prototype activities at Norfolk Naval Shipyard. Later, he worked in shipboard industrial hygiene and environmental protection program management at the U.S. Naval Military Sealift Command Headquarters. He has also been the Occupational Health Director at the Naval medical clinic, Quantico, where he was responsible for providing industrial hygiene and occupational medicine services to the Marine Corps base. Since coming to DOE in 1995, he has been responsible for the implementation of/support to, its industrial hygiene/occupational medicine programs at the five Ohio Field Office sites.

Ken Kellar is employed by the Department of Energy as a Nuclear Engineer. He holds a B.S. in Engineering Physics. He spent the first seven years of his career as an officer in the Naval Nuclear Propulsion Program. His Navy experience involved nuclear plant operations culminating in qualification as Chief Engineer. During later duty he was an instructor of reactor operations

and supporting theory. Mr. Kellar came to DOE in 1992. His duties primarily consist of performance of assessment activities and implementation of technical training and qualification programs. Examples of assessment activities include: Technical Safety Appraisals at Nevada Test Site and Kansas City Plant, Los Alamos Omega West Reactor Type B investigation, Lawrence Livermore National Laboratory calibration program review, complex-wide training and qualification surveys in support of Defense Nuclear Facilities Safety Board Recommendation 93-3, Operational Readiness Reviews/Assessments (ORRs/RAs) at: Rocky Flats Building 440 and 707, Pantex Zone 4 Stage Right, Savannah River Site Defense Waste Processing Facility and Consolidated Incinerator Facility, Y-12 Weapon Disassembly/Assembly Activities, West Valley Demonstration Project Vitrification Facility and Idaho National Engineering Laboratory New Waste Calcining Facility. Mr. Kellar has served as technical expert in the areas for training and qualification, safety envelope, quality assurance, procedures, operations, and management. He also served as Senior Advisor to the Team Leader for the Rocky Flats Building 440 ORR.

Jo Kersh is a Program Assistant in the Office of the Associate DAS for Technical and Environmental Support (DP-45). She has ten years of government service, including nine years with the Department of Energy (DOE). Ms. Kersh assists in the planning and scheduling of Operational Readiness Reviews (ORRs), Readiness Assessment (RAs), and Integrated Safety Management System Verifications (ISMSVs) encompassing comprehensive, functional, managerial, and programmatic verification of DP nuclear facility safety. She coordinates logistics, travel, and other arrangements for ORRs, RAs, and ISMSVs of DOE programs which deal with DP's (and other programs as requested) nuclear projects, operations, and facilities. She assists in selected aspects of ORRs, RAs, and ISMSVs by reviewing and analyzing limited areas of an administrative nature where well-established policies and procedures are in place; and contributes factual information for incorporation into reports. She coordinates and oversees the processes involved in report preparation. She assures documents receive appropriate classification designation and handling.

Ms. Kersh has provided administrative coordination and technical support for the Technical Safety Assessment at Kansas City Plant, Kansas City, Missouri and ORRs at Building 371 at Rocky Flats Site; Replacement Tritium Facility, F-Canyon Phase I and Phase II, FB-Line, In-Tank Precipitation, Defense Waste Processing Facility, Consolidated Incinerator Facility, and H-Canyon at the Savannah River Site, Aiken, South Carolina, and Combined Device Assembly Facility, at Nevada Test Site, Mercury, Nevada. She coordinated the RA for Receipt, Storage, and Shipment at the Y-12 Site, Oak Ridge Operations Office (OROO), and assisted with the administrative support for the RA for Disassembly and Assembly at the Y-12 Site, OROO, Oak Ridge, Tennessee. Ms. Kersh was the administrative support for Environment, Safety and Health on the Highly Enriched Uranium Vulnerability Assessment at the Pantex Site, Amarillo, Texas. Ms. Kersh has also provided the administrative coordination for the ISMSV Phase I at Savannah River Site, and Phase II at FB-Line Savannah River Site; and Phase I and II ISMSV at Rocky Flats Site.

Dawn Kristensen is a licensed Professional Engineer with the Albuquerque Operations Office (AL), DOE. She holds a B.S. in civil engineering with an emphasis on structural design and a minor in computer science from New Mexico State University. She also holds a M.S. in civil engineering with a focus on environmental engineering from the University of New Mexico. Ms. Kristensen has been with the Federal Government for 14 years. She started her career at the U.S. Corps of Engineers in the Albuquerque District Office where she worked in the fields of structural design, facility site development, geotechnical analysis, and project management. Ms. Kristensen joined the DOE in 1990 and has worked in the Facilities Management, Operations Management, and Performance Assessment Divisions. From 1990 to 1994 she served as the Manager for the Facility Configuration Management Program at AL. During this time she worked with Los Alamos National Laboratory, Sandia National Laboratory, Pantex Plant, Kansas City Plant, Grand Junction Project Office, Waste Isolation Pilot Project, and the Inhalation Toxicology Research Institute in the development of their configuration management programs. She authored Albuquerque Operations Office Supplemental Directive, "Startup and Restart of AL Facilities, Activities, and Operations," in 1994. Ms. Kristensen has reviewed the area of configuration management in ORRs for the Explosive Component Test Facility, Mound Plant; Isotopic Fuel Impact Test Facility PF-4/TA-55 at Los Alamos National Laboratory; and the W79 Preparedness for Disposal, Pantex Plant. For the ORR for the Stage Right Operation, Pantex Plant she reviewed the area of configuration management and was responsible for reviewing the adequacy of the closure package for all pre-start findings. Ms. Kristensen served as team leader for the ORR of the AT-400A pit repackaging process at the Pantex Plant (1997). She acted as the co-team leader for the on-site assessment at Los Alamos National Laboratory for the Pilot Oversight Program for Line Environmental, Safety and Health Management (1995), and as the co-team leader for a Technical Assistance Review at the Kansas City Plant (1996).

Theodore Lewin has over 36 years of operational and technical management experience in the U.S. Navy. That experience included extensive involvement in performance based training and operations, training, material, and management assessment. He is currently employed as a Vice President, Nuclear Operations, Sonalysts, Inc. Mr. Lewin, a nuclear trained submarine officer, retired from the Navy as a Rear Admiral. During his naval service, he served on four nuclear powered fleet ballistic missile submarines as an Engineering Department division officer, as engineer officer of a new construction submarine with responsibilities for conducting the reactor plant test program and training the crew for certification in reactor plant operations, and as Executive Officer and Commanding Officer. Additionally, he served as an instructor, operator and training officer at a naval reactor plant prototype, on the staff at Naval Reactors, DOE, with responsibilities for managing the training and staffing for all of the Navy's enlisted reactor plant operators, and as the Commanding Officer of a Naval Nuclear Power Training Unit (NPTU) at which nearly half of all new Navy nuclear reactor plant operators received their initial operational training. In the NPTU assignment, he was responsible for monitoring and assessing the effectiveness of the training, the operation of four reactor plants, and the execution of the contractor's responsibilities. Other tours included responsibilities for managing and monitoring all aspects for performance in two different nuclear submarine squadrons while assigned as Deputy Commander for Readiness and Training in one squadron, and as Squadron Commander in the

other. In addition to several other senior management assignments as Navy Flag Officer, he led a team of about 100 technical experts in assessing the material condition and quality of all Navy ships, including assessment of the acceptability of new ships prior to their delivery from the shipbuilder to the Navy. In his association with Sonalysts, Inc., Mr. Lewin has participated at the senior management level in evaluating the state of training at five DOE sites in support of the Ad Hoc committee's efforts in developing the implementation plan for Defense Nuclear Facilities Safety Board (DNFSB) Recommendations 92-7 and 93-3 concerning training. He has provided independent oversight to the DOE staff conducting a review of and evaluating the effectiveness of DOE directives concerning the assembly, disassembly, and testing of nuclear explosives when compared to high level nuclear industry standards and other DOE standards used for reactor and non-reactor nuclear facilities. He is currently providing management assistance to some DOE staff organizations. He participated in the F-Canyon 2nd Plutonium Cycle ORR in the areas of management and the DOE Area Office and in the FB-Line, ITP, DWPF, and F-Canyon ORRs.

Doug Minnema is a Certified Health Physicist and a nuclear engineer with the Office of Technical and Environmental Support in the Office of Defense Programs, DOE. Mr. Minnema holds a B.S.E. and M.S.E. in Nuclear Engineering, and a M.S. in Radiological Health, all from the University of Michigan, and is currently pursuing a Ph.D. in Nuclear Engineering from the University of New Mexico. He worked at Sandia National Laboratories (SNL) for over 16 years with his time divided roughly equally between health physics and research reactor operations. Mr. Minnema has been a certified health physicist at the SPR and ACRR reactor facilities and the SNL Hot Cell Facility, a certified reactor operator of the SPR II, SPR III, and Critical Assembly reactors, and has performed accident analyses and criticality safety evaluations in support of SNL nuclear material operations and experiments. For almost three years he was assigned to DOE/DP Headquarters assisting the program offices with radiological operations issues, primarily the implementation of the Occupational Radiation Protection Rule, 10 CFR 835, and the DOE Radiological Control Manual. Mr. Minnema joined DOE in November 1995, and is currently the Radiological Control Program Advisor to DP. He participated on the H-Canyon ORR at the Savannah River Site.

Jon B. Nielsen is a scientist with a broad background in nuclear materials processing and research and development. Dr. Nielsen earned a B.S. degree in chemistry from St. Olaf College in Northfield, MN, and a Ph.D. from the University of Alabama in inorganic chemistry. Following graduation, he accepted a postdoctoral position at Los Alamos and has been there since. He is currently the Project leader for uranium processing, recovery, and disposition at Los Alamos. He has participated in various DOE assessments including the Highly Enriched Uranium Vulnerability Assessment, where he was a member of the team that prepared and conducted the assessment. He was also a member of the site team that evaluated Y-12 Plant during the Highly Enriched Uranium Vulnerability Assessment. Dr. Nielsen has a broad based knowledge of actinide processing and chemical science. He also has a broad knowledge of environmental, safety, and health issues related to the operation of DOE nuclear facilities.

David Odland has an M.S. in Engineering Physics and over 20 years of experience in the operation, maintenance, design, construction, and modification of nuclear power plants. Mr. Odland served in the U.S. Navy nuclear propulsion program for two tours, including a new construction tour. Mr. Odland has worked in the commercial nuclear power industry in several capacities. He has been a Startup Engineer with responsibility for instrumentation and controls systems at Millstone 3. As Engineering Supervisor at Millstone 1, Mr. Odland was responsible for electrical, mechanical, and reactor engineering support to an operating unit. In addition, he supervised the plant's In-Service Inspection Program. As Maintenance Supervisor, he was responsible for the mechanical and electrical maintenance (preventive and corrective) at Millstone 1 and directed the efforts of the maintenance department through a refueling outage. He was licensed as a Senior Reactor Operator and served as a member of the Plant Operations Review Committee. As Superintendent of Maintenance and Modifications at Enrico Fermi 2, Mr. Odland was responsible for all site maintenance and modifications. He provided oversight to a department of over 250 personnel providing mechanical, electrical, and instrumentation and controls support. Mr. Odland has been Certified Operating License Examiner for the Nuclear Regulatory Commission. He has provided support to commercial utilities in assessing their performance of Technical Specification Surveillances, and has participated in an Electrical Distribution Safety Functional Inspection. Mr. Odland has been a member of the Operational Readiness Review Teams for the Analytical Chemistry Building (Building 559) at the Rocky Flats Plant and for the Replacement Tritium Facility (RTF), F-Canyon, FB-Line, H-Canyon, and In-Tank Precipitation (ITP) at the Savannah River Site. Mr. Odland has also provided assistance to the Plutonium Reclamation Facility at Westinghouse Hanford in the implementation of a revised Final Safety Analysis Report and has been a mentor at the Los Alamos National Laboratory's Plutonium Facility and Chemical & Metallurgical Research Facility. Mr. Odland participated in the Highly Enriched Uranium Vulnerability Assessment at the Y-12 Plant.

Douglas Outlaw is an Experimental Nuclear Physicist with a broad background in technical assessment and policy analysis of Environment, Safety and Health issues and problems for Department of Energy (DOE), Nuclear Regulatory Commission (NRC), NASA, and other Federal agencies. His principal efforts at SAIC have been supporting DOE, NRC, and NASA Headquarters and the major contractors operating the DOE sites in safety and environmental analysis. This has included preparation of Safety Analysis Reports and various environmental documents, such as Environmental Assessments and Impact Statements. He is currently serving as a Senior Program Manager and Senior Scientist at SAIC. Dr. Outlaw served as a technical expert in the areas of safety analysis, criticality safety, and other safety-related areas for facility reviews of DOE Defense Programs and NRC fuel-cycle facilities. Between 1991 and 1993, Dr. Outlaw has served as a technical expert in eight DOE-Headquarters (HQ)/DP-67 sponsored Technical Safety Analysis of major DOE facilities, including Mound Laboratories, Lawrence Livermore National Laboratories, the Pantex Plant, the Nevada Test Site, and the Kansas City Plant. Since 1993, Dr. Outlaw has served on Operational Readiness Reviews for Zone 4 at Pantex; Receipt, Storage, and Shipment, Disassembly and Assembly, and Quality Evaluation at Y-12; F-Canyon Phase I and II, FB-Line, H-Canyon, In-Tank Precipitation, and Defense Waste Processing Facility at the Savannah River Site; and Tank Draining/Solidification Operations at

Building 371 and 771 at Rocky Flats. Among the areas in which Dr. Outlaw had the lead were safety analysis, criticality safety, emergency preparedness, and engineering support. Dr. Outlaw has recently supported NRC HQ in 13 criticality safety inspections of licensed fuel-cycle facilities.

David R. Roth is the Training Manager, Defense Programs, at DOE Headquarters. He has over 35 years experience with commercial nuclear facility programs and DOE operations. He served in the nuclear navy, qualified in each of the submarine engineering divisions and was Operations Office. Mr. Roth worked for the Atomic Energy Commission as an operator license examiner. He assisted in the development of examination standards and administered examinations at more than 20 power plants. Mr. Roth was Senior Vice President of General Physics Corporation where he directed technical and programmatic support services for commercial and government clients. He provided direct contract support for the DOE's New Production Reactors program including Management Assessment of the design engineering organization of the Heavy Water Reactor. Mr. Roth conducted a special programmatic review in preparation for operation of the Tokamak Fusion Test Reactor at the Princeton Plasma Physics Laboratory and was a team member for the DOE Operational Readiness Review of the West Valley Development Project Vitrification Facility. He has a B.S. degree in Chemical Engineering from the University of South Carolina and has served as chairman of the ANS 3.0 Subcommittee for reactor operations standards.

Bill Webb has 16 years of experience in the nuclear field. Five years were spent in the Naval Nuclear Power Program serving as a Division Officer, six years were spent as a Department of Energy (DOE) Operations and Technical Support Branch Chief at Savannah River Site (SRS), and the last five years have been spent as a DOE support service contractor. At SRS Mr. Webb held several positions including: Senior Nuclear Engineer, Facility Representative, Reactor Operations Branch Chief, Reactor Technical Support Branch Chief, and DOE Unreviewed Safety Question Program Coordinator. He was directly responsible for DOE oversight activities in various functional areas including: Conduct of Operations, Maintenance Management, Quality Assurance, Configuration Management, Training and Procedures, Safety Documentation, System and Design Engineering, and Project Management. As a DOE employee and a DOE contractor, Mr. Webb has conducted or directed numerous assessments in each of the areas listed above. In addition, he has participated in various Operational Readiness Reviews (ORRs) and Readiness Assessments (RAs) as a Technical Expert in the Operations, Maintenance, Engineering, and Management functional areas. Some of the ORRs and RAs include: Building 371 and 707 at Rocky Flats; Replacement Tritium Facility, F-Canyon, FB-Line, and Defense Waste Processing Facility at SRS; Device Assembly Facility (DAF) at the Nevada Test Site; and Y-12 Plant at Oak Ridge.

Jim Winter is a Nuclear Engineer with Department of Energy (DOE) Defense Programs (DP). He holds an M.S. in Technology Management from the University of Maryland and a B.S. in Electrical Engineering from the U.S. Naval Academy. He is a registered Professional Engineer in the electrical field. He has over 10 years of diversified experience in Navy and commercial nuclear power prior to joining the DOE in 1991. Previous to DOE, Mr. Winter's experience included: (1) two years as lead project engineer on a \$13 million natural gas compressor station

expansion project; (2) over three years as San Diego Gas and Electric Company's Facility Representative for the three unit San Onofre Nuclear Generating Station; and (3) over five years of naval nuclear experience including two submarine tours; one shipyard tour for deactivation and decommissioning, and a second tour operating on a normal deployment schedule as the Damage Control Assistant. In DP, Mr. Winter presently works within the Operations support Group of DP with primary responsibilities in assessing the implementation of facilities' safety documentation (Basis for Interim Operations, Safety Analysis Reports and Technical Safety Requirements). Specific experience includes project lead of a technical review team for approval of the new construction Replacement Tritium Facility SAR (1992-1993), the F-Canyon BIO (1994), and the FB-Line BIO (1994). Responsibilities included review and development of a Safety Evaluation Report to justify the approval of the facility's Safety Analysis Report and Technical Safety Requirements. More recently, Mr. Winter has participated in the Readiness Assessment for the Disassembly/Assembly Operations at the Y-12 Site, the Operational Readiness Review (ORR for the New Waste Calcining Facility at the INEL as a member of the Operations and Procedures group, and the ORR for the H-Canyon Phase I Restart at Savannah River Site (SRS) as a member of the Safety Envelope group. Mr. Winter also participated in the Phase I Integrated Safety Management Systems Verification at SRS as a member of the Hazards functional area.

APPENDIX 2

CRITERIA AND REVIEW APPROACH DOCUMENT

CRITERIA AND REVIEW APPROACH DOCUMENTS ENRICHED URANIUM OPERATIONS (EUO)

CONFIGURATION MANAGEMENT (CM)

OBJECTIVE

CM.1 Safety systems and systems essential to worker and public safety are defined and a system to maintain control over the design and modification of facilities and safety-related systems is established. (**CORE REQUIREMENT #4**)

Criteria

Administrative controls are in place to ensure that repairs (or modifications) are adequately analyzed to identify system degradation and to ensure that design changes are documented and approved prior to implementation. (DOE-STD-1073-93, Ch. 1.3; S/RID FA Environmental Restoration (ER) LMES ID # 649)

Approach

Record Review: Review recent design changes and modifications to the facility to ensure that they have been reflected in drawings and documents available to operators and maintenance personnel. Review the listing of safety systems and components to ensure consistency with safety basis.

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

Shift Performance: Perform a facility walkdown to determine whether there are uncontrolled modifications to safety systems. This walkdown should evaluate the accuracy of drawings and other documentation for plant operation and maintenance.

OBJECTIVE

CM.2 The facility systems, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (**CORE REQUIREMENT #4 and #15**)

Criteria

An adequate process has been implemented to ensure that documentation for systems critical to the safety of the facility exist and is kept current, as appropriate for their safety functions and that documentation is available to the operators. (DOE-STD-1073-93, Ch. 1.3; S/RID FA Environmental Restoration (ER) LMES ID # 649)

Drawings and other documentation relied upon for operations and maintenance activities are consistent with the existing plant configuration. (DOE-STD-1073-93, Ch. 1.3; S/RID

FA Environmental Restoration (ER) LMES ID # 649)

Approach

Record Review: Review the configuration management process to ensure it will maintain up-to-date plant configurations. Review records for current or previous temporary modifications and verify required analysis is conducted and any required actions are implemented during the period the temporary modification is in place.

Interviews: Interview engineering personnel responsible for developing, reviewing and approving supporting safety analyses for proposed facility and equipment changes to assess their understanding of the program and their individual responsibilities in support of the CM program.

Shift Performance: Observe in-progress work control for compliance with administrative requirements such as currency of drawings and procedures.

Walkdown a temporary modification, if one is in effect, and evaluate the accuracy of the temporary modification records and drawings.

While observing evolutions and drill response, assess CM activities or programs in-place or planned to ensure compliance with safety requirements. At least one recently completed modification should be observed and changes verified, including changes to operating procedures if applicable.

CRITICALITY SAFETY (CS)

OBJECTIVE

CS.1 A criticality safety program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure criticality safety support services are adequate for safe operations. **(CORE REQUIREMENT #8)**

Criteria

The criticality safety organization is established and supports the operations organization. The criticality safety organization is adequately staffed with qualified personnel. (5480.24, para 7.c., 5480.19, Ch. II and III, 5480.20, Ch. 4 and 5, S/RID FA Criticality Safety (CS) LMES ID #5406, #5317, #5326)

Revised processes for the issuances of criticality safety operating limits are implemented in facility operating procedures, and are viable. (5480.24, para 7, 5480.19, Ch. XVII, S/RID FA Criticality Safety (CS) LMES ID #6898, #6899, #5487, #5318, #10292, #5489)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels of the criticality safety organization that supports operations. Ensure proper integration of lessons learned from recent occurrences. Verify that facility procedures implement criticality safety operating limits.

Interviews: Interview the criticality safety personnel supporting operations to determine if they are knowledgeable of their roles, responsibilities, and methods.

Shift Performance: While observing evolutions and drill response, verify that criticality safety operating limits and any other program requirements are effectively implemented in the facility. Monitor the communications between criticality safety support personnel and operators for demonstrated understanding of criticality safety processes.

OBJECTIVE

CS.2 Level of knowledge of operations support (criticality safety) personnel is adequate based on reviews of examinations and examination results and selected interviews of operating personnel. **(CORE REQUIREMENT #3)**

Criteria

Operations support personnel in the criticality safety area, specifically criticality safety engineers, should show the ability to carry out procedures under their cognizance. (5480.24, para 7, 5480.20B, Ch. 1, para 3, 4, 5, and 7, Ch. 4, para 2, 5 and 6, S/RID FA Criticality Safety (CS) LMES ID #5330, #5334, #5356, #5335)

Plant personnel can recognize, evaluate, and respond to criticality safety operating limits. (5480.24, para 7, 5480.20B, Ch. 4, para 2 and 5, S/RID FA Criticality Safety (CS) LMES ID #5336)

Operations support personnel in the criticality safety area should show a working knowledge of facility systems and components related to safety. These personnel should also give adequate attention to health, safety and environmental protection issues. (5480.24, para. 7, 5480.20, Ch. 1, para 3, 4, 5, and 7, S/RID FA Criticality Safety (CS) LMES ID #5336, 5338)

Approach

Record Review: Review the training records for level of completeness and adequacy required to prove that criticality safety support personnel are knowledgeable on facility procedures and systems under their cognizance.

Interviews: Interview criticality safety support personnel to assess their understanding of required actions when responding to abnormal and emergency conditions. Also assess their understanding of how these actions relate to the safety basis for operations. Assess their understanding of health, safety and environmental protection issues. Decide if personnel are knowledgeable in criticality safety operating limits.

Shift Performance: While observing evolutions and drill response, find out if operations and support personnel are familiar with and adhere to criticality safety operating limits and postings.

OBJECTIVE

CS.3 A baseline compliance status review of Department of Energy Order 5480.24 has been performed. Noncompliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All noncompliances identified by the Oak Ridge Y-12 Site compliance assessments of Department of Energy Orders of interest to the Defense Nuclear Facilities Safety Board have approved schedules for gaining compliance. Actions described in the Request for Approval have been adequately addressed for the facility/activity. (Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Approach

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

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

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

EMERGENCY PREPAREDNESS (EP)

OBJECTIVE

EP.1 An emergency preparedness program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure emergency preparedness is adequate for safe operations. (CORE REQUIREMENT #8)

Criteria

The emergency preparedness organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. It is adequately staffed with qualified personnel. (151.1; S/RID FA Emergency Management LMES ID #1478, FA Training and Qualification (TQ) LMES ID #9690)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels of the emergency preparedness organization that supports operations.

Interviews: Interview those emergency preparedness personnel who are responsible for providing support to operations during emergency events to determine if they are familiar with their roles, responsibilities and interfaces with the operations organization.

Shift Performance: None.

OBJECTIVE

EP.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel. (CORE REQUIREMENT #3)

Criteria

Emergency preparedness support personnel demonstrate the ability to carry out emergency procedures under their cognizance. (151.1; 5480.20A, Ch. 1; S/RID FA Safety Analysis (SA) LMES ID # 5476)

Emergency preparedness support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (151.1; 5480.20A, Ch. 1; S/RID FA Emergency Preparedness (EP) LMES ID #7389, FA Training and Qualification (TQ) LMES #9823, #9690)

Approach

Record Review: Review for adequacy and completion, the training records which indicate emergency preparedness support personnel training on facility procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview emergency preparedness support personnel to assess their understanding of their actions when responding to abnormal and emergency conditions as well as their understanding of how these actions relate to the safety basis for operations. Interview these personnel to determine if their level of knowledge of plant operations hazards, health, safety and environmental protection issues is adequate. Interview personnel responsible for the Emergency drill program to determine if their level of knowledge of plant operations is adequate. Interview Plant Shift Superintendent (PSS) personnel and evaluate their understanding of EUO Phase operations hazards and emergency responses.

Shift Performance: Observe drills, routine evolutions and normal operations, to assess the ability of emergency preparedness support personnel to safely operate systems and components under their cognizance in accordance with approved plant procedures.

OBJECTIVE

EP.3 An emergency operations drill program, including program records, has been established and implemented. (**CORE REQUIREMENT #9**)

Criteria

An effective emergency preparedness program has been established. Drills and exercises are conducted and an adequate response capability exists. (151.1; 5480.20A, Ch. 1; S/RID FA Training and Qualification (TQ) LMES ID # 9688)

Approach:

Record Review: Review the records that describe the recent emergency preparedness drills and review the results from each. Determine if the drill scenarios were adequate to cover hazards identified in the BIO for Phase A EUO operations and if the necessary number of drills have been conducted to fully verify and test compliance with the approved safety bases of these processes. Verify EP programs include actions for emergencies in other Y-12 facilities effecting EUO. Determine if lessons learned from drills are factored into following drills and training.

Interviews: None

Shift Performance: Observe pre-drill briefings, conduct, and post-drill critiques of an emergency preparedness drill. Observations should include evaluations of all aspects of drill conduct (e.g., EOC support, emergency response functions, etc.)

OBJECTIVE

EP.4 The implementation status for DOE Order 151.1, and associated S/RIDs is adequate for operations. Non-compliance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable CSAs, exemptions, and compensatory measures.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

ENGINEERING SUPPORT (ES)

OBJECTIVE

ES.1 An engineering support program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure engineering support services are adequate for safe operations. **(CORE REQUIREMENT #8)**

Criteria

The engineering support organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. They are adequately staffed with qualified personnel. (5480.19, Ch. VIII; 5700.6C, para 9.b.(1); 10 CFR 830.120; 5480.20A, Chs. I and IV; S/RID FA Quality Assurance (QA) LMES ID #9931, #9954)

A program has been developed and implemented for the identification and disposition of Unreviewed Safety Questions (USQs). (5480.21, Para 10; S/RID FA Safety Analysis (SA) LMES ID #6834, #6835, #5287, #5288)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memoranda) which establish the roles, responsibilities, interfaces, and staffing levels of the engineering support organization that supports operations. Review dispositioned USQs/USQDs for design changes, special procedures and tests, and other proposed changes to verify adequate implementation. Review initial USQ screenings and supporting USQ safety evaluations. Determine the status of all ongoing USQs and USQDs and evaluate their implications on the startup of EUO Phase A operations.

Interviews: Interview personnel responsible for developing, reviewing and approving USQ determinations to determine if they are familiar with their support and interface responsibilities to the operations organization. Interview engineering support personnel to ensure they adequately understand their roles, responsibilities, and reporting relationships.

Shift Performance: While observing evolutions and drill response, determine if support services personnel are providing adequate support to the operations organization, and attention is given to health, safety and environmental protection issues. Evaluate any in progress USQ/USQD reviews to assess adequacy of program implementation.

OBJECTIVE

ES.2 Level of knowledge of support personnel is adequate based on reviews of examinations and examination results and selected interviews. **(CORE REQUIREMENT #3)**

Criteria

Engineering support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (5480.19, Ch. VIII; 5700.6C, para 9.b.(1)(b); 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #1365, #2384)

Engineering support personnel demonstrate a working knowledge of design criteria and associated standards, facility systems, and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (5480.19, Ch. VIII; 5700.6C; 5480.20A, Ch. 1; S/RID FA Training and Qualification (TQ) LMES ID #1365)

Entry-level requirements are established for each Engineering Support position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, Ch. 1 and 4; S/RID FA Training and Qualification (TQ) LMES ID #2386, #1378)

Approach

Record Review: Review for adequacy and completion, the training records which indicate engineering support personnel training on facility procedures and systems. Review procedures or policies that describe the personnel selection and entry-level requirements.

Interviews: Interview engineering support personnel to assess their understanding of their actions when responding to abnormal and emergency conditions as well as their understanding of how these actions relate to the safety basis for operations. Interview these personnel to determine if their level of knowledge is adequate to assist the operations organization in maintaining safe operations. Assess their knowledge of the need and bases for the USQ process and its importance to maintaining safety operations. Evaluate their familiarity with applicable design criteria and associated engineering standards as they apply to their responsibilities for Phase A EUO operations. Determine if they have an adequate knowledge of health, safety, and environmental issues.

Shift Performance: Observe drills, routine and normal operations, to assess the ability of Engineering support personnel to safely operate systems and components under their cognizance in accordance with approved plant procedures. Verify adequate attention is given to health, safety, and environmental protection issues.

OBJECTIVE

ES.3 The implementation status of DOE Order 5480.21 and associated S/RIDs is adequate for operation. Non-compliance issues have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Adequate compensatory measures are specified in the CSAs as necessary, and have been effectively implemented. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the order compliance package for DOE 5480.21, including all applicable CSAs, exemptions, and compensatory measures.

Interviews: If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

FIRE PROTECTION (FP)

OBJECTIVE

FP.1 A fire protection program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure fire protection support services are adequate for safe operations. **(CORE REQUIREMENT #8)**

Criteria

The fire protection organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. It is adequately staffed with qualified personnel. (5480.7A, para 9; S/RID FA Fire Protection Engineering (FP) LMES ID #5033, #5034)

Fire protection programs have been established that ensure plant personnel can prevent and respond to fire hazards. (5480.7A, para 9; S/RID FA Fire Department Operations (FO) LMES ID #5044)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the fire department group that supports operations. Determine if the fire department group that supports operations is providing adequate support to the operations organization, and that they are giving adequate attention to health, safety and environmental protection issues.

Interviews: Interview selected fire department, fire engineering, and surveillance personnel to determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization.

Shift Performance: Walkdown the facilities to determine if the material condition of the fire detection and suppression equipment and fire boundaries adequately reflect documented needs and if combustibles are suitably controlled.

OBJECTIVE

FP.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel. **(CORE REQUIREMENT #3)**

Criteria

Fire protection support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (5480.7A, para 9; 5480.20A, paras. I and IV; S/RID FA Fire Protection Engineering (FP) LMES ID #5035, FA Training and Qualification (TQ) LMES ID #5060)

Fire protection support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (5480.7A, para 9.b.; 5480.20A, Criteria I and IV; 5700.6C, Criteria II; 10 CFR 830.120; S/RID FA Fire Protection Engineering (FP) LMES ID #5038, #5039)

Approach

Record Review: Review for adequacy and completion, the training records which indicate fire protection support personnel training on facility procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview fire protection support personnel to assess their understanding of their actions when responding to abnormal and emergency conditions as well as their understanding of how these actions relate to the safety basis for operations. Interview the personnel designated for emergency response actions to determine if they have been trained to anticipate, recognize, evaluate, and respond to fire hazards. Assess their understanding of health, safety, and environmental protection issues.

Shift Performance: Observe or review records of drills, routine evolutions and normal operations, to assess the ability of fire protection support personnel to safely operate systems and components under their cognizance in accordance with approved plant procedures.

OBJECTIVE

FP.3 The implementation status of DOE Order 5480.7A and associated S/RIDs are adequate for operation. Non-compliance issues have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA), equivalencies, and exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Compensatory measures that are specified in the CSAs are adequately implemented. (Plan

for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable CSAs, equivalencies, exemptions and compensatory measures.

Interviews: If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

OCCUPATIONAL SAFETY AND INDUSTRIAL HYGIENE (IS)

OBJECTIVE

IS.1 Occupational safety and industrial hygiene programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure services are adequate for safe operations. **(CORE REQUIREMENT #8)**

Criteria

The occupational safety and industrial hygiene organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. They are adequately staffed with qualified personnel. (5480.10; 5483.1A, Ch. 1; S/RID S/RID FA Quality Assurance (QA) LMES ID #9931, #9954, FA Safety and Health (SH) LMES ID #10459)

Occupational safety and industrial hygiene programs are implemented and are consistent with DOE Orders and applicable industry standards. (5483.1A, Ch. 1; 5480.10; S/RID FA Medical (MD) LMES ID #997, FA Safety and Health (SH) LMES ID #10459, FA Training and Qualification (TQ) LMES ID #7681)

Job hazard analyses are conducted routinely by experienced engineering, occupational safety, and industrial hygiene personnel in a coordinated effort to avoid hazardous and unsafe operations. (5483.1A, Ch. 1; 5480.10; S/RID FA Safety and Health (SH) LMES ID #10459)

Industrial safety and hygiene related equipment has been identified, reviewed, selected, maintained and where applicable, tested to ensure adequate personnel protection. (5480.19, Ch II; 5480.10; S/RID FA Maintenance (MA) LMES ID #9993)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the occupational safety and industrial hygiene group that supports operations. Review the necessary records and program procedures to ensure that occupational safety, industrial hygiene, and chemical safety programs continue to be implemented and are consistent with DOE Orders and applicable industry standards. Review the results of one job hazard analysis and determine if any items should be followed up during the Shift Performance phase of the ORR. Review industrial hygiene sampling sheets for adequacy.

Interviews: Interview the occupational safety and industrial hygiene personnel to

determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization.

Shift Performance: The occupational safety and industrial hygiene organization that supports operations will be requested to conduct at least one process hazard analysis. The person conducting this analysis will be accompanied by one of the ORR team members to determine if the results of the analysis are accurate and provide meaningful feed back to the operations group, and that they are giving adequate attention to health, safety and environmental protection issues. Observe the role played by the occupational safety and industrial hygiene/ chemical safety organization to ensure they are proactive in their approach to safety during routine operations. Walkdown the facilities to determine if appropriate industrial safety/hygiene related equipment is supplied, maintained, and reviewed to ensure the proper protection is provided to personnel.

OBJECTIVE

IS.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel. (CORE REQUIREMENT #3)

Criteria

Occupational safety and industrial hygiene support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (5480.10; 5483.1A, Ch. 1; 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #9887, #2385, #1365)

Occupational safety and industrial hygiene support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety, and environmental protection issues. (5480.10; 5483.1A, Ch. 1, 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #2392)

Personnel have been trained to anticipate, recognize, evaluate, and respond to hazards that may be present in the workplace. (5483.1A Ch. 1, para 5; 5480.10; 5700.6C; 10 CFR 830.120; S/RID FA Training and Qualification (TQ) LMES ID #1365, 1378)

Approach

Record Review: Review for adequacy and completion, the training records which indicate occupational safety and industrial hygiene support personnel have received training on facility procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview occupational safety and industrial hygiene support personnel to assess their understanding of their actions in response to abnormal and emergency

conditions as well as their understanding of how these actions relate to the safety basis for operations. Determine if these personnel have an adequate knowledge of health, safety, and issues.

Shift Performance: Observe drills, routine evolutions and normal operations, to assess the ability of occupational safety and industrial hygiene support personnel to safely operate systems and components under their cognizance in accordance with approved plan procedures.

OBJECTIVE

IS.3 The implementation status of DOE Orders 5480.8A, 5480.10, 5483.1A, and associated S/RIDs is adequate for operation. Non-compliance items have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable CSAs, exemptions, and compensatory measures.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

MANAGEMENT (MG)

OBJECTIVE

MG.1 A process has been established to identify, evaluate, and resolve deficiencies and recommendations made by oversight groups, official review teams, audit organizations, and the operating contractor. (CORE REQUIREMENT #6)

Criteria

A system for identifying, reviewing, cataloging, and resolving deficiencies and recommendations is adequately implemented. (5480.19, Chs. VI and VIII; 5700.6C; 10 CFR 830.120; S/RID FA Quality Assurance (QA) LMES ID # 1390)

Approach

Record Review: Review the issue management tracking system, selecting representative issues and assessing the adequacy of the program. Assess the backlog and prioritization system for reducing it.

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

Shift Performance: Evaluate the Issue Management Programs' effectiveness in ensuring that corrective actions are being completed and tracked to closure through the system.

OBJECTIVE

MG.2 The results of the responsible contractor "Readiness Determination Process" are adequate to verify the readiness of hardware, personnel, and management programs for safe operations. (CORE REQUIREMENT #17)

Criteria

The scope of the corporate readiness determination is adequate for assessing the areas of health, safety, and the environment, and verifies the satisfactory implementation of the restart plan. Identified issues and deficiencies are appropriately categorized and dispositioned. (425.1; S/RID FA Management Systems (MS) LMES ID #10496)

Approach

Record Review: Review the corporate readiness review plan, findings, recommendations, implementation plans, and schedules to ensure they are complete in scope and adequate in detail. Verify the rationale for corporate acceptance of any non-compliance items. Determine whether the contractor has systematically analyzed findings for root causes and generic implications. Evaluate the effectiveness of discrepancy closure system.

Interviews: Interview corporate readiness review team personnel to establish their

qualification and the adequacy of their review.

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

OBJECTIVE

MG.3 A systematic review of the facility's conformance to applicable Standards/Requirements has been performed, any non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (Contractor) Note: Review of the compliance packages by Y-12 Site Office (YSO) is addressed in objective OR.2) (**CORE REQUIREMENT #7**)

Criteria

A formal program has been established which ensures that the requirements of the DOE Standards/Requirements are identified and evaluated for compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the procedures used for conducting DOE Standards/Requirements compliance reviews to ensure that they contain adequate guidance for identifying requirements and assessing the status of compliance. The guidance provided for determining if non-compliance issues are startup or non-startup issues will also be assessed for adequacy. In coordination with the efforts of the team's other technical experts, determine if the procedures are being followed.

Interviews/Shift Performance: None.

OBJECTIVE

MG.4 A program is established to promote a site-wide safety culture. (**CORE REQUIREMENT #14**)

Criteria

Site programs actively promote safety through a broad range of activities possibly including, but not limited to, safety bulletins, lessons learned briefings and/or employee concerns programs. (5480.1B, Ch. IX; 5480.29, para 9.a.; S/RID FA Quality Assurance (QA) LMES ID #10052, FA Environmental Protection (EP) LMES ID #6954)

Approach

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

Interviews: Interview EUO line management personnel to determine objectives of site-wide safety culture. Also, interview operations personnel to assess effectiveness of communicating the goals of the program.

Shift Performance: None

OBJECTIVE

MG.5 Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented with line management responsibility for control of safety. **(CORE REQUIREMENT #11)**

Criteria

A clear management structure is established, approved and in place. This structure is implemented and is understood by the EUO operations staff. (5480.19, Ch. I and III; S/RID FA Environmental Restoration LMES ID #215, FA Environmental Protection (EP) LMES ID #7337)

A FRAM has been prepared by the Field organization and is in use at the Y-12 Site. (DOE M411.1-1 Para 8)

Approach

Review documented functions, responsibilities, and reporting relationships. Interview line management, operations, and support personnel to assess understanding and implementation. (Note: The approach to assess this criteria is subsumed in the approaches for operations and operations support organizations. Information from review of those areas will be integrated with that obtained by the above review and interviews.)

OBJECTIVE

MG.6 The implementation status of DOE Order 5000.3B, DOE O 232.1A, and associated S/RIDs are adequate for operation. Non-conformance items have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Compensatory measures that are specified in the CSAs are adequately implemented. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994.)

Y/AD-623, Standards/Requirements Implementation Assessment Instruction,
Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the order compliance package for DOE 5000.3B, and 232.1A, including the applicable CSA, exemptions and compensatory measures.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as current compensatory measures in the interim.

Interview line managers to verify they understand their roles and responsibilities with respect to reporting, analyzing and correcting ORPS reportable deficiencies.

Shift Performance: Where appropriate, observe the implementation of any specified compensatory measures within the facility to determine their effectiveness. Select 2 ORPS reports submitted by the contractor as final and verify that all corrective actions have been effectively implemented.

OBJECTIVE

MG.7 An adequate startup test program has been developed that includes adequate plans for graded operations to simultaneously confirm operability of equipment, the viability of procedures, and the adequacy of training of operators. (**CORE REQUIREMENT #10**)

Criteria

The plan is adequate and is being implemented. Specific hazards and evaluations which cannot be addressed prior to commencement of "radioactive operations" are included. (425.1; S/RID FA Management Systems LMES ID #10496)

Approach

Record Review: Evaluate the status of actions under the plan. Assure a phased approach to normal operations and inclusion of procedures, operator qualification and equipment startup testing as required. Verify the plan includes mechanisms to deal with specific hazard and evaluations unique to the startup of Phase A EUO operations.

Interviews/Shift Performance: Interview personnel responsible for supervising execution of the startup test program to assess their understanding of the objectives and limitations of the program.

MAINTENANCE (MT)

OBJECTIVE

MT.1 A maintenance management program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure maintenance services are adequate for safe operations. **(CORE REQUIREMENT #8)**

Criteria

The maintenance organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. It is adequately staffed with qualified personnel. (4330.4B, Ch. II, section 2 and 3; S/RID FA Training and Qualification (TQ) LMES ID #8639, #8642, #8643, FA Management Systems/Technical Procedures (MS/TP) LMES ID #9174)

The maintenance program conforms to the guidance provided in DOE Order 4330.4B and associated S/RIDs. (S/RID FA Configuration Management (CM) LMES ID #8756)

The maintenance backlog is controlled, prioritized and minimized. Work relating to safety components, protecting the environment and ensuring safety and health receives a higher priority than other items. (4330.4B, Ch. II, section 5 and 7; S/RID FA Configuration Management (CM) LMES ID #9859)

Measuring and test equipment (M&TE) and installed process equipment used to ensure the proper operation of safety systems are identified, available, and calibrated. (4330.4B, Ch. II, section 12; S/RID FA Training and Qualification (TQ) LMES ID #9076, #9114)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, or internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the maintenance organization. Review any recent records and program procedure changes to ensure that the maintenance program includes the requirements of the order. Review completed maintenance work packages and associated maintenance procedures for facility safety systems (safety class and safety significant). Review the maintenance backlog listing and job priority. Review M&TE and installed process instrumentation recall and calibration records. Review the requirements to ensure that counterfeit or suspect spare parts are effectively addressed.

Interviews: Interview personnel to determine if they are familiar with their support and interface responsibilities to the operations organization. Interview maintenance planners and supervisors responsible for developing, reviewing, and approving work packages. Interview personnel responsible for prioritizing work requests and establishing

maintenance schedules. Interview maintenance personnel to assess their understanding of the maintenance program.

Shift Performance: While observing evolutions and drill response, determine if maintenance personnel are providing adequate support to the operations organization, and attention is given to health, safety and environmental protection issues. Observe the use of M&TE for maintenance activities for proper control. Observe the performance of maintenance, including post-maintenance testing, in the facility on safety systems. Observe the status of safety systems during normal operations. Spot check calibration for installed instruments/gauges (safety class and safety significant) and M&TE for currency.

OBJECTIVE

MT.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel.
(CORE REQUIREMENT #3)

Criteria

Maintenance support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (4330.4B, Ch. II, section 5; 5480.20A, Chs. I and IV; S/RID FA Training and Qualification (TQ) LMES ID #9148, FA Management Systems/Technical Procedures (MS/TP) LMES ID #9164)

Maintenance support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (4330.4B, Ch. II, section 5; 5480.20A, Chs. I and IV; 5700.6C; 10 CFR 830.120; S/RID FA Training and Qualification (TQ) LMES ID #9148)

Entry-level requirements are established for each maintenance position and includes as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, Chs. I and 4; S/RID FA Training and Qualification (TQ) LMES ID #9142)

Approach

Record Review: Review for adequacy and completeness, the training records which indicate maintenance support personnel training on facility procedures and systems. Review procedures or policies to ensure that they describe the personnel selection and entry-level requirements.

Interviews: Interview maintenance support personnel to assess their understanding of their actions when responding to abnormal and emergency conditions as well as their

understanding of how these actions relate to the safety basis for operations. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues.

Shift Performance: Observe drills, routine evolutions and normal operations, to assess the ability of maintenance support personnel to safely operate systems and components in accordance with approved plant procedures.

OBJECTIVE

MT.3 The implementation status of DOE Order 4330.4B and associated S/RIDs are adequate for operations. Non-compliance issues have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Approach

Record Review: Review the order compliance package for the listed orders. Ensure the MIP is being followed.

Interviews: If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as all interim compensatory measures.

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

OPERATIONS (OP)

OBJECTIVE

OP.1 Level of knowledge of operations personnel is adequate based on reviews of examinations and examination results and selected interviews of operating personnel. (**CORE REQUIREMENT #3**)

Criteria

The level of operator knowledge is adequate to operate safely. This includes knowledge of RP, IH, FP, WM, and SE as required for operator qualification. (5480.19 Ch. XIII; 5480.20A, Chs. I and IV; S/RID FA Training and Qualification (TQ) LMES ID #9674, #9659)

The level of knowledge of lab support personnel is adequate to ensure proper analysis in the support of safe operations, and to ensure safety of the analytical processes. This includes knowledge of RP, IH, FP, WM, and SE as appropriate to support operations. (5480.19 Ch. XIII; 5480.20A, Chs. I and IV; S/RID FA Training and Qualification (TQ) LMES ID #9675)

Operations personnel retain a practical and adequate understanding of facility systems and operations. These personnel also give adequate attention to and retain an adequate knowledge of health, safety and environmental protection issues. (5480.19, Ch. XIII; 5480.20A, Chs. I and IV; 5700.6C, Criteria II; S/RID FA Training and Qualification (TQ) LMES ID #9676)

Operators demonstrate the ability to carry out normal, abnormal, and emergency procedures. (5480.19 Ch. XIII; 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #9688)

Operators demonstrate a working knowledge of facility systems and components related to safety. (5480.19 Ch. XIII; 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #9688)

Approach

Record Review: Review examinations to determine if they adequately test the operators and lab support personnel's understanding of technical fundamentals, facility systems, and operating procedures.

Interviews: Interview operators, lab support personnel, and their supervisors to assess their understanding of Phase A EUO processes, procedures, and fundamentals as they relate to the re-start effort. Interview supervisory operations personnel to assess their understanding of the safety envelope, their ability to maintain EUO Phase A1 operations within the safety envelope, and their understanding of where the responsibility for

maintaining the safety envelope resides in various operating scenarios.

Shift Performance: Observe drills, routine evolutions and normal operations to assess technical understanding and ability of the operators, lab support personnel, and supervisors to conduct their duties and to safely operate systems and components in accordance with approved plant procedures.

OBJECTIVE

OP.2 A routine drill program, including program records, has been established and implemented. **(CORE REQUIREMENT #9)**

Criteria

An effective routine operations drill program has been established. Drills and exercises are conducted and an adequate response capability is demonstrated to exist. (5480.19, Ch. VI; 5480.20A, Ch. I; S/RID FA Training and Qualification (TQ) LMES ID #9688)

Approach

Record Review: Review the drill records that describe the routine drills that have been conducted and review the results from each. Determine if the drill scenarios were adequate and if the necessary number of drills have been conducted to fully test personnel, procedures and equipment in a broad range of facility operations.

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

Shift Performance: Observe operational drills to verify they test operator and maintenance personnel with realistic and challenging scenarios. Evaluate whether an adequate response capability exists.

OBJECTIVE

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

Criteria

Operations personnel, including operators, supervisors, and shift technical advisors are knowledgeable of safety and environmental protection requirements and understand how they are implemented. (5480.19, Ch. II; S/RID FA Training and Qualification (TQ) LMES ID #5965)

Operations personnel, including operators, supervisors, and shift technical advisors understand the importance of procedural compliance and adhere to the policy. (5480.19,

Chs. I and XVI; S/RID FA Management Systems/Technical Procedures (MS/TP) LMES ID #5965)

Approach

Record Review: Review the training records which indicate that operators personnel have received instruction on safety and environmental protection requirements and their implementation, and the procedure compliance policy.

Interviews: Interview operators and supervisors to assess their understanding of the safety envelope, and the implementation of the safety and environmental protection requirements in procedures and operator round sheets.

Shift Performance: Observe drills and evolutions, to assess the understanding and significance operators and supervisors place on ensuring facility operations meet environmental protection requirements and are within the established safety envelope. Assess procedure compliance when conducting evolutions and responding to abnormal conditions.

OBJECTIVE

OP.4 There are sufficient numbers of qualified operations to support safe operations. The technical and management qualifications of contractor personnel responsible for facility operations are adequate. (CORE REQUIREMENTS #13 and #19)

Criteria

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

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

Entry-level requirements are established for each operations position and include as applicable the minimum education, experience, technical, and medical requirements. (5480.20A, S/RID FA Training and Qualification (TQ) LMES ID #9697, #9698)

Approach

Record Review: Review EUO Phase A BIO, OSRs, and CSRs for staffing requirements. Compare with personnel records to assess the ability of the facility to field the required personnel.

Review the procedures or policies which describe the personnel selection and entry-level requirements to ensure they address the minimum physical attributes a trainee must possess, as well as the minimum educational, technical, and experience requirements necessary for the employee to meet job requirements.

Interviews: Interview operators and supervisors to ensure they understand the minimum staffing requirements for all phases of facility operations.

Shift Performance: Assess staffing levels while observing drills and routine evolutions to determine if they are adequate and satisfy administrative and safety basis requirements.

OBJECTIVE

OP.5 The implementation status for DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities" and associated S/RIDs is adequate for operations. Non-compliance issues have been addressed. (CORE REQUIREMENT #12)

Criteria

Program requirements have been developed and issued for the topics addressed in the order. (5480.19, S/RID FA Operations (OP) LMES ID #5954)

Operations personnel demonstrate the principles of the conduct of operations requirements during the shift performance period. Adequate performance will be demonstrated in all areas of the order, including:

- Shift routines and operating practices (control area activities, logkeeping, shift turnover, communications),
- System control (lockouts and tagouts, independent verification, control of equipment, control of plant systems via status boards, system labeling, etc.),
- Procedures and training (control of on-shift training, procedure use, operator aids, required reading, timely orders to operators), and
- Housekeeping including adequate control of hazardous materials, transient combustibles, and ignition sources. (5480.19, para 4, S/RID FA Operations (OP) LMES ID #5954)

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis

and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation

Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Compensatory measures that are specified in the CSAs are adequately implemented. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1, 1980, Y/AD-523, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review recently completed operations logs, shift turnover documents, and other plant records of note to assess compliance with conduct of operations principles.

Review the order compliance package for DOE 5480.19, including the applicable CSA, exemptions and compensatory measures.

Interviews: Interview operators and supervisors to assess their understanding of the conduct of operations principles in the performance of their duties.

If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as current compensatory measures in the interim.

Shift Performance: While observing evolutions and drill response, determine if the facility is effectively implementing the conduct of operations requirements. Attend shift turnovers, incident critiques, management reviews, and pre-job briefings and observe control room activities, operator rounds, panel walk downs, procedure use, communications, and response to alarms, control of system status, and lockout/tagout activities.

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

OBJECTIVE

OP.6 Adequate and correct procedures that are available for operating and maintaining the process systems and designated utility systems. Procedures have been revised to reflect modifications to the facility. Procedures, as affected by facility modifications, are consistent with the description of the facility, procedures, and accident analysis included in the safety basis. (CORE REQUIREMENTS 1, 15, and 18)

Criteria

Operations, maintenance, and surveillance procedures meet or exceed the requirements of the guidance provided in DOE Order 5480.19, Conduct of Operations. (5480.19, Ch.

XVI; 5700.6C, para 9.b.(2)(a); 4330.4B, Ch. II; S/RID FA Management Systems/Technical Procedures (MS/TP) LMES ID #5904)

Operations personnel, including operators, lab support, supervisors, and shift technical advisors understand the importance of procedural compliance and adhere to the policy. (5480.19, Chs I and XVI; S/RID FA Management Systems/Technical Procedures (MS/TP) LMES ID #5904)

Operations, maintenance, and surveillance procedures adequately implement and are consistent with the approved safety basis. BIO and CSR requirements are clearly delineated. Procedures are available to the operators to enable them to monitor and control the safe operation of the plant under normal, abnormal, and emergency conditions in compliance with DOE Order 5480.19 and associated S/RIDs. Procedures are developed, approved, controlled, and changed consistent with the requirements of S/RID ?? (5480.19, Ch. XVI; 5480.22, para 9.; 5480.23; 5700.6C, para 9; S/RIDs FA Management Systems/Technical Procedures (MS/TP) LMES ID #5904)

Approach

Record Review: Review validation, walk down, and reviewer comments for recent procedure changes on safety systems. Review procedures for implementation of the safety envelope. Assess the adequacy of the review and approval process for procedures. Review the procedure compliance policy to verify that it conforms to 5480.19 guidance. Assess the currency of procedures and verify current configuration of safety systems is reflected in operations, maintenance and surveillance procedures.

Interviews: Interview operators and supervisors to assess their understanding of the temporary procedure change process, and how they verify the latest approved revision of a procedure. Interview support staff personnel responsible for procedure writing and revision to assess their understanding of procedure control requirements, validation process, and implementation of safety requirements. Interview operator and supervisors and assess their understanding of site procedure compliance policy.

Shift Performance: While observing evolutions and drill response, determine if the facility procedures are adequate in content, level of detail, and acceptance criteria, and properly implement safety requirements. If temporary procedure changes are necessary, assess the steps taken by an operator and his supervisor in the review and approval process. Verify procedures used by the operators are properly controlled to ensure only the latest revision is used. Verify that operators are following site procedure compliance policy.

DOE-OR (OR)

OBJECTIVE

OR.1 The technical and managerial qualifications of those at the Y-12 Site Office (YSO) and the Oak Ridge Operations Office (ORO) who have been assigned responsibilities for direction and guidance to the contractor, including the Facility Representatives (FRs), are adequate. (CORE REQUIREMENT #16)

Criteria

Formal training and qualification requirements and staffing levels have been developed for the FRs. (DOE-STD-1063-93, para 4 and 5; O 360.1)

Records demonstrate that FRs assigned to cover facility operations are qualified and the minimum staffing levels are met. (DOE-STD-1063-93, para 4 and 5; O 360.1)

Responsible YSO and ORO personnel have sufficient applicable experience and/or training to adequately understand facility operations and safety systems under their cognizance. (DOE-STD-1063-93, para 4 and 5; O 360.1)

The YSO FRs have adequate knowledge of facility operations and hazards and is involved in overseeing operations on a daily basis. The YSO FRs are formally qualified and are providing critical oversight of operations. (DOE-STD-1063-93, para 4 and 5; O 360.1)

Approach

Record Review: Review completed FR Qual-Cards, and oral and written exam results demonstrating qualification. Review FR and Duty Officer assignments. Review training and qualifications of operations and safety department personnel at the Oak Ridge Operations Office.

Interviews: Interview the FRs to determine his/her understanding of operations, safety envelope, past incidents and occurrences, conduct of operations principles, and stop work authority. Interview members of the ORO operations and safety departments and assess understanding of operations and the safety envelope.

Shift Performance: Perform a walkthrough of the facility, with all qualified FRs, to determine their understanding of the building layout, system operation, normal operator routines, and shift activities.

OBJECTIVE

OR.2 A systematic review of the facility's conformance to applicable Standards/Requirements has been performed, any non-conformance issues have been identified, and schedules for gaining compliance have been justified in writing and formally approved. (DOE) (CORE REQUIREMENT #7)

Criteria

A formal order compliance review program has been established by YSO and ORO which ensures that the requirements of the appropriate DOE Orders are identified and evaluated for compliance. The results of the review have been documented and validated. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

YSO and ORO have reviewed all of the Standards/Requirements compliance packages generated by LMES for Phase A EUO restart. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review the procedures used by YSO and ORO for conducting DOE Order compliance reviews to ensure that they contain adequate guidance for identifying requirements and assessing the status of compliance. The guidance provided for determining if non-compliance issues are startup or non-startup issues will also be assessed for adequacy. Three Standards/Requirements compliance packages will also be selected at random to determine if the compliance reviews were conducted in accordance with the approved procedures.

Review the documentation which demonstrates that YSO and ORO has reviewed and approved the LMES Standards/Requirements compliance packages.

Interviews/Shift Performance: None.

OBJECTIVE

OR.3 DOE Operations oversight programs such as occurrence reporting, facility representative, corrective action, Standards/Requirements compliance, and quality assurance programs, are adequate. (CORE REQUIREMENT #20)

Criteria

Responsible YSO and ORO managers have sufficient applicable on-the-job experience

and/or training to adequately understand facility operations and safety systems under their cognizance. (O 360.1)

Adequate reporting or operational and occurrence information is provided to appropriate DOE Managers in accordance with DOE Orders 5480.19 and 232.1. This information is reviewed and acted on appropriately by DOE Managers and corrective actions are adequately tracked. (5480.19, Ch. VIII; 5700.6C, para 9.b.(1)(c); O 360.1; 232.1A)

YSO and ORO matrix support organizations (such as radiological protection, quality assurance, and industrial hygiene) have the capability to oversee safety and environmental protection aspects of operations. (5480.19, Ch. VIII; O 360.1; 232.1A)

Approach

Record Review: Review training records for managers to determine if they have received adequate training in operations. Review completed inspection reports, management tour reports, and self-assessments that indicate whether management and matrix support personnel are providing adequate and critical oversight of operations at Phase A EUO operations. Review occurrence reporting per DOE Order 232.1.

Interviews: Interview selected matrix support personnel who have completed assessments for Phase A EUO operations to evaluate their knowledge and method of review.

Shift Performance: While observing evolutions and drill response, determine if management and matrix support personnel are actively involved in oversight activities.

QUALITY ASSURANCE (QA)

OBJECTIVE

QA.1 A quality assurance program is established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure quality assurance services are adequate for safe operations. (CORE REQUIREMENT #8)

Criteria

The quality assurance organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. It is adequately staffed with qualified personnel. (5700.6C, para 9.; 10 CFR 830.120; S/RID FA Information Flow and Operations (IO) LMES ID #7151, FA Quality Assurance (QA) LMES ID #1399)

The quality assurance program meets or exceeds the requirements and guidance provided in 10 CFR 830.120. (10 CFR 830.120; S/RID FA Information Flow and Operations (IO) LMES ID #7151)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, or internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the quality assurance organization. Review the necessary records and program procedures to ensure that the QA program includes QA audits, a process for tracking, trending, and correcting conditions adverse to quality, self assessments, verification that operational support organizations have implemented administrative controls to ensure compliance with federal and state regulations, and resolution of identified QA deficiencies. Evaluate the program for identifying, replacing, and prohibiting counterfeit or suspect parts.

A policy or procedure describes the long- and short-term requirements for performing program evaluations and provides guidance relative to who conducts the evaluations, how often evaluations are conducted, and how evaluations are conducted.

Interviews: Interview those QA personnel that support operations to determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization. Verify adequate knowledge of site QA procedures.

Shift Performance: The QA organization will be requested to conduct at least one surveillance. The person conducting this surveillance will be accompanied by one of the ORR team members to determine if the results of the surveillance are accurate and provide meaningful feed back to the operations group, and that they are giving adequate attention to health, safety and environmental protection issues.

OBJECTIVE

QA.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel. **(CORE REQUIREMENT #3)**

Criteria

Quality assurance support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance (5480.20A, Ch. I; 10 CFR 830.120, 5700.6C, para 9.b.(1)(b); S/RID FA Training and Qualification (TQ) LMES ID #1378, #1365)

Quality assurance support personnel demonstrate a working knowledge of QA requirements and facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (5480.20A, Ch. I; 10 CFR 803.120; 5700.6C; 5480.19, Ch. 1; S/RID FA Training and Qualification (TQ) LMES ID #9675, #1365)

Approach

Record Review: Review for adequacy and completion, the training records which indicate quality assurance support personnel training on facility procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview quality assurance support personnel to assess their understanding of their actions when responding to abnormal and emergency conditions and facility hazards as well as their understanding of how these actions relate to the safety basis for operations. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues.

Shift Performance: Observe drills, routine evolutions and normal operations, to assess the ability of quality assurance support personnel to safely operate systems and components under their cognizance in accordance with approved plant procedures. Observe a QA surveillance to determine if the person conducting the surveillance has an adequate level of knowledge of facility operations and hazards.

OBJECTIVE

QA.3 The implementation status of 10 CFR 830.120 and S/RIDs associated with DOE Order 5700.6C are adequate for operations. Non-compliance issues have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming

Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Implementation Plan for the QA Final Rule 10 CFR 830.120 is approved and on schedule.

Approach

Record Review: Review the compliance packages for 10 CFR 830.120 including all applicable CSAs, exemptions, and compensatory measures.

Review status of actions under the implementation plan for the QA Final Rule. Verify the plan is approved and the schedule is being met.

Interviews: If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory actions.

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

RADIOLOGICAL PROTECTION (RP)

OBJECTIVE

RP.1 Radiological protection programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure operational support services are adequate for safe operations. (**CORE REQUIREMENT #8**)

Criteria

The radiological protection organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. It is adequately staffed with qualified personnel. (5480.19, Ch. II and VIII; 10 CFR 835; S/RID FA Radiological Protection (RP) LMES ID #10067)

The radiological protection program meets or exceeds the requirements of 10 CFR 835 as set forth in the LMES (DOE Approved) Radiological Protection Plan (RPP), Appendix A. (10 CFR 835; S/RID FA Radiological Protection (RP) LMES ID # 10058, #10060-#10070)

The radiation protection program appropriately implements DOE N441.1 as incorporated into the Y-12 S/RIDs; addresses the radiological hazards unique to the facility for normal and abnormal conditions; and conducts evaluations for improvement and corrective actions. (10 CFR 835; S/RID FA Radiological Protection (RP) LMES ID #10071-#10087)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, or internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the radiological protection support organization. Review the necessary records and program procedures to ensure that the radiological control program includes the items identified above. Review records of radiation protection evaluations of off-normal occurrences with identified necessary corrective actions.

Interviews: Interview those selected radiation protection personnel that support operations to determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization.

Shift Performance: While observing operations and maintenance evolutions and drill response, determine if the radiation protection personnel that support operations are providing adequate support to the operations organization, and that they are giving adequate attention to health, safety and environmental protection issues. At least one

operations or maintenance evolution and drill will be conducted to specifically assess those items contained in 10 CFR 835 and S/RID ??.

OBJECTIVE

RP.2 Level of knowledge of operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operations support personnel. **(CORE REQUIREMENT #3)**

Criteria

Radiological protection support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (5480.20A, Ch. I; S/RID FA Radiological Protection (RP) LMES ID # 10067)

Radiological controls support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues and are familiar with the radiological hazards present at the facility. (10 CFR 835; 10 CFR 830.120; 5480.20A, Ch. I; 5700.6C, Criteria II, S/RID FA Radiological Protection (RP) LMES ID # 10067)

Radiological protection support personnel are knowledgeable of radiological requirements and principles, and local radiological control policy and procedures. (10 CFR 835; S/RID FA Radiological Protection (RP) LMES ID # 10067)

Approach

Record Review: Review the Radiological Support personnel training records to verify training in radiological procedures, systems and facility, and system and hazards.

Interviews: Interview radiological protection support personnel to assess their understanding of actions when responding to abnormal and emergency radiological conditions and facility hazards and their understanding of how these actions relate to the safety basis for operations. Determine if these personnel have an adequate knowledge of health, safety, environmental and radiation protection procedures, principles, and issues.

Shift Performance: Observe drills, routine operations and maintenance evolutions, to assess the ability of radiological controls support personnel to safely operate systems and components under their cognizance in accordance with approved plant procedures.

OBJECTIVE

RP.3 The status of compliance with 10 CFR 835 and associated S/RIDs are adequate for operations. Non-compliances have been addressed. **(CORE REQUIREMENT #7)**

Criteria

All non-compliance issues are adequately addressed in the RPPs or by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

The implementation of Radiological Controls Rule 10 CFR 835 is on schedule. The implementation of S/RID FA 11 is on schedule.

Approach

Record Review: Review order compliance packages for S/RIDs associated with radiological protection, including all applicable CSAs, exemptions and compensatory measures.

Review status of actions under the Implementation Plan for the Radiological Controls Final Rule. Verify that the Rule has been implemented and that there is a verification program in place.

Interviews: If these Standards/Requirements are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

SAFETY ENVELOPE VERIFICATION (SE)

OBJECTIVE

SE.1 Facility safety documentation is in place that describes the "safety envelope" of the facility. The safety documentation should characterize the hazards/risks associated with the facility and should identify mitigating measures (systems, procedures, administrative controls, etc.) that protect workers and the public from those hazards/risks. **(CORE REQUIREMENT #4)**

Criteria

The BIOs and OSRs have been prepared by the contractor and approved by the DOE. (5480.23, para 8; S/RID FA Safety Analysis (SA) LMES ID #6883, #10580, #10582, #10589)

The safety documentation addresses appropriate hazards/risks associated with operations necessary to protect the public, workers, and the environment from the safety and health hazards posed by the facility. (5480.23, para 8; S/RID FA Safety Analysis (SA) LMES ID #10561 and #10562)

Approach

Record Review: Review the EUO Phase A BIO, OSRs, CSRs, Safety Evaluation Report (SER), and other safety basis documentation to assess whether the safety basis adequately includes appropriate hazards/risks associated with EUO Phase A operations.

Interviews: None.

Shift Performance: None.

OBJECTIVE

SE.2 A program is in place to confirm and periodically reconfirm the condition and operability of safety systems, including safety-related process systems and safety-related utility systems. This includes examinations of records of tests and calibrations of the safety system and other instruments monitoring limiting conditions of operation or that satisfy Operational Safety Requirements. All safety-related process and utility systems are currently operable and in satisfactory condition. **(CORE REQUIREMENT #5)**

Criteria

Confirmation of continued compliance with safety requirements, including clearly defined surveillance intervals and periodic self-assessments, is required by procedures. Adequate surveillance test procedures and acceptance criteria have been established to support safe operation and are consistent with the approved operating basis for the facility. (5480.22, para 9, 10, Attachment 1, Background; 5480.23, para 8, Attachment 1, section 4; S/RID FA Safety Analysis (SA) LMES ID #5953, #10596, #10568)

Completed surveillances and tests are reviewed and follow up actions are documented. (5480.22, para 9.e.; 5480.19, Chs. I and II; S/RID FA Safety Analysis (SA) LMES ID #10592, #10596)

Approach

Record Review: Review the surveillance test tracking system to assess the mechanisms used for scheduling, performing, reporting results, and dispositioning test deficiencies. Review the surveillance test program to determine that each safety requirement has a corresponding surveillance test. Review surveillance tests to determine if acceptance criteria are established and met during the performance of periodic system testing. Verify that surveillance procedures are technically correct and implement the requirement of the OSRs and the safety basis documents. Review a listing of outstanding safety system deficiencies identified through the corrective maintenance program, preventive maintenance program, surveillance test program, or other reporting process to assess the condition of facility systems to support safe operations. Review the results of QA and operations management assessments of the surveillance test program. Review bases for systems designated safety class or safety significant to assess adequacy.

Interviews: Interview personnel associated with the surveillance test program to assess their understanding of program requirements and responsibilities. Interview operations and QA management to determine if self-assessments of the surveillance test program are implemented and effective. Determine if corrective actions from outside evaluations are also taken into account.

Shift Performance: Observe the performance of safety system surveillance testing. Walk down one or more safety-related systems to assess operability and condition, and verify that the status is consistent with the condition specified in the control room.

OBJECTIVE

SE.3 There are adequate and correct safety limits for operating and maintaining the designated process systems and utility systems. (**CORE REQUIREMENT #1**)

Criteria

Operating and maintenance procedures implement applicable safety requirements and the associated limiting conditions for operation. (5480.22, para 9.e.; 5480.19, Ch. XVI; S/RID FA Safety Analysis (SA) LMES ID #10592, FA Management Systems and Technical Procedures LMES ID #5904, #5905, #6754-6771, #2777, #6026, #5918, #5908)

The parameters indicating compliance with the safety requirements can be measured or physically verified. (5480.22, para 9.e; S/RID FA Safety Analysis (SA) LMES ID #10596)

Approach

Record Review: Select several safety requirements and determine if associated operating and maintenance procedures implement the limiting conditions for operation.

Interviews: None.

Shift Performance: Observe the performance of operating and/or maintenance rounds to determine if safety system parameters used to verify compliance with safety requirements can be accurately verified.

OBJECTIVE

SE.4 The implementation status of DOE Orders 5480.22, 5480.23, and 5480.24 and associated S/RIDs are adequate for operations. Non-compliance items have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Adequate compensatory measures are specified in the CSAs as necessary, and have been effectively implemented. Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders, including all applicable CSAs, exemptions, and compensatory measures.

Interviews: For orders that are not fully implemented, interview management personnel to ensure they are aware of this non-compliance and the actions necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

TRAINING (TR)

OBJECTIVE

TR.1 A training support program is established, sufficient numbers of qualified training personnel are provided, and adequate facilities and equipment are available to ensure training personnel services are adequate for safe operations. (CORE REQUIREMENT #8)

Criteria

The training support organization is established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. They are adequately staffed with qualified personnel. (5480.19, Ch. 1, section B; 10 CFR 830.120; 5700.6C ATT I, II.A.2.a; S/RID FA Training and Qualification (TQ) LMES ID #1378)

An organization/person within line management is responsible for the implementation of the training and qualification program(s). (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9658)

Training facilities and equipment are adequate to support the training process. (5480.20A Chapter-I; DOE-STD-1070-94)

Instructors have the technical qualifications, including theory, practical knowledge, and experience for the subject matter they are assigned to teach. Procedures are developed and implemented to ensure that individual instructors, including on-the-job instructors meet and maintain instructional and technical position qualification requirements. (5480.20A Chapter I; 5480.19 Chapter V; S/RID FA Training and Qualification (TQ) LMES ID #9674)

A continuing instructional skills training program is implemented to maintain, improve, and update the knowledge skills of incumbent training staff based in part on the results of instructor evaluations which includes improvements needed for technical instructional knowledge and skills, the correction of identified instructional deficiencies, and training on new methods and equipment. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #10057)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, and internal memoranda) which establish the roles, responsibilities, interfaces, and staffing levels of the training support organization that supports operations. Review training records for training staff personnel and on-the-job training instructors, including results of written, oral, and operational evaluations, to

ensure the training program is being formally administered and controlled. Review the instructor continuing training program.

Interviews: Interview personnel to determine if they are familiar with their support and interface responsibilities to the operations organization. Interview selected personnel on training topics identified through the record review to assess the effectiveness of the instructor training program. Interview training staff and on-the-job training personnel to determine if they have sufficient experience and qualifications for training tasks assigned.

Shift Performance: Observe training evolutions, including classroom, on-the-job training sessions and simulator training sessions, if possible, to verify program implementation and effectiveness. Evaluate training facilities to determine if they are conducive to the learning process, and if classrooms and training settings are free from excessive disturbances and distractions. Evaluate the training staff's office and working spaces to determine if they are adequate to support the training being developed and presented.

OBJECTIVE

TR-2 Training and qualification programs for operations and operations support personnel have been established, documented, and implemented. **(CORE REQUIREMENT #2)**

Criteria

Procedures are developed and implemented that describe the qualification process, including examinations for certification of operations and maintenance personnel, requalification, maintenance of proficiency, granting of exceptions and extensions, alternatives to educational requirements, remediation, and evaluations by facility and training management. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9677)

Goals, objectives, and plans are in place to describe the implementation of the training and qualification programs. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9680, #9743)

Classroom training is conducted in accordance with formal lesson plans based on established learning objectives. Written and oral examinations are used to evaluate trainee comprehension of training content. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9683)

Training programs incorporate formal on-the-job training (OJT) and hands-on evaluation of skills. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9675, #9681)

The qualification program includes requirements for successful completion of written, oral, and operational evaluations for operations and maintenance personnel. (5480.20A

Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9675, #9676)

Procedures are in place to ensure that non-resident personnel will receive the proper training for unescorted access to EUO operations areas and that they are current in their training requirements. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9691, #9692)

Approach

Record Review: Review training and qualification records for operators, maintenance personnel, shift technical engineers, and supervisors, including results of written, oral and operational evaluations, to ensure the training program is being formally administered and controlled. Training records are maintained in an auditable manner and support management information needs by providing required data on each individual's training participation, performance, and qualification/certification.

Review the evaluation/self-assessment program for involvement by facility and training management in program, instructor (classroom and OJT), and training materials assessment.

Review the remedial training program for adequacy.

Review the Building 9212 and 9215 access control procedures for positive control of non-resident personnel. Review training records of 10 non-resident personnel with access to EUO operating areas for currency in required training for unescorted access.

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

Interviews: Interview training personnel to determine if they have sufficient experience and qualifications for assessing operations and maintenance personnel.

Shift Performance: Observe operator, operations support personnel, or supervisor examinations, by attending oral or operational evaluations (OJT), or simulator training sessions. Verify that personnel demonstrate knowledge of activities and evolutions that were included in their training program.

OBJECTIVE

TR.3 The training and qualification programs encompass the range of duties and activities required to be performed. (CORE REQUIREMENT #2)

Criteria

The tasks required for competent job performance are identified and documented through a systematic analysis of job requirements. The training program is based on the results of this analysis. Learning objectives are derived from the analysis. (5480.20A Chapter I, S/RID FA Training and Qualification (TQ) LMES ID #9683)

Requirements for continuing training have been adequately defined and programs have been developed. Continuing training includes conduct of realistic drills to maintain proficiency in responding to abnormal and accident situations, including those involving radiological hazards. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9685)

Training programs for operations and maintenance personnel include training on the requirements contained in the approved operating basis for the facility. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9682, #9729, #9695)

Training programs for operations and maintenance personnel emphasize the importance of compliance with procedures and safety requirements. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9729, #9695)

Training for technical staff personnel is based on an assessment of position duties and responsibilities. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9697)

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

- Using feedback on training effectiveness from trainees and supervisors,
- Incorporating feedback from operating experience at the site and from other DOE sites,
- Conducting formal reviews of training effectiveness, and
- Incorporation of comments from line management self-assessments and other audits. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9683)

Approach

Record Review: Review operations and maintenance lesson plans for incorporation of safety requirements, technical safety requirements, operational safety requirements, and procedure compliance. Review trainee feedback forms, training evaluations of lessons

learned from operating experiences, and formal training program reviews to verify feedback is addressed in a formal manner. Review the continuing training program plan and drill schedule to verify its adequacy to support safe operations.

Review the systematic analysis of job requirements conducted to provide reasonable assurance that all tasks that are essential to safe and efficient operation are addressed by the training program.

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

Verify that the current facility safety analysis report, operating procedures, technical and professional references, and facility/industry operating experience are used to identify facility specific training content and information for use in developing training materials.

Review the degree to which on-the-job training and hands-on evaluations for operations and maintenance personnel are used to reinforce classroom activities.

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

Interviews: Interview training personnel responsible for continuing training, and drill scenario development and implementation. Interview personnel responsible for establishing training needs for operations and maintenance personnel.

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

OBJECTIVE

TR.4 Modifications to the facility have been reviewed for potential impacts on training and qualification. Procedures have been revised to reflect these modifications and training has been performed to these revised procedures. (**CORE REQUIREMENT #18**)

Criteria

Qualification programs are based on the latest modifications to the facility. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9686)

Training has been completed and documented for the latest revisions of procedures performed by operations personnel, supervisors, and shift technical advisors. (5480.20A Chapter I; S/RID FA Training and Qualification (TQ) LMES ID #9686)

Approach

Record Review: Review the process used to evaluate changes to operations and maintenance personnel training needs. Review lesson plans, and supporting examinations. Determine if lesson plans accurately reflect recent facility and/or procedure changes.

Interviews: Interview training personnel to determine their involvement with facility and/or procedure changes affecting lesson plans.

Shift Performance: Observe operations and maintenance personnel in the performance of on-the-job training. Observe classroom training or a field training activity. During observation of operations involving procedures with revisions, verify proper conduct and understanding of the procedures by the operators.

OBJECTIVE

TR.5 The implementation status of DOE Order 5480.20A, and associated S/RIDs are adequate for operation. Non-compliance items have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved compliance schedule approvals (CSA) or exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. (Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

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

Approach

Record Review: Review the order compliance package for DOE 5480.20A and including all applicable CSAs, exemptions and compensatory measures.

Interviews: If this order is not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, and all interim compensatory measures.

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

WASTE MANAGEMENT AND ENVIRONMENTAL PROTECTION (WM)

OBJECTIVE

WM.1 Waste management and environmental protection programs are established, sufficient numbers of qualified personnel are provided, and adequate facilities and equipment are available to ensure services are adequate for safe operations. (**CORE REQUIREMENT #8**)

Criteria

The waste management and environmental protection organizations are established and functioning to support the operations organization. Functions, assignments, responsibilities, and reporting relationships are clearly defined, understood, and effectively implemented. They are adequately staffed with qualified personnel. (5400.1, Ch. III.2; S/RID FA Environment Protection (EP) LMES ID #7332-#7336)

An effective environmental protection and waste management program has been implemented that will ensure compliance with the permits associated with the Clean Air Act and Clean Water Act. Procedures have been developed to ensure that hazardous and radioactive materials and wastes are handled in accordance with legislative requirements and DOE orders. (5400.1, para 9.f.7; 5820.2A, para 8.j)

Approach

Record Review: Review the documentation (e.g., administrative procedures, organizational charts, position descriptions, or internal memorandums) which establish the roles, responsibilities, interfaces, and staffing levels for the waste management and environmental protection organization. Review all environmental permits that have been issued for EUO Phase A operations and verify that the permit requirements have been implemented. Review the necessary records and program procedures to ensure that hazardous and radioactive wastes are handled in accordance with appropriate legislative requirements (e.g. NOV's, NOD's, FFCA, etc. and other state regulations), the EA/EIS, and DOE orders.

Interviews: Interview those Environmental Protection/Waste Management personnel that support operations to determine if they are familiar with their roles, responsibilities, and interfaces with the operations organization.

Shift Performance: While observing evolutions and drill response, determine if Environmental Protection/Waste Management personnel are providing adequate support to the operations organization, and attention is given to health, safety and environmental protection issues.

OBJECTIVE

WM.2 Level of knowledge of operations and operations support personnel is adequate based on reviews of examinations and examination results and selected interviews of operating and operations support personnel. (**CORE REQUIREMENT #3**)

Criteria

Waste management and environmental support personnel demonstrate the ability to carry out normal, abnormal, and emergency procedures under their cognizance. (5480.20A, Ch. I; 5480.19, Ch. XVI; S/RID FA Training and Qualification (TQ) LMES ID #9729, FA Management Systems/Technical Procedures (MS/TP) LMES ID #5904, #5908, #5918, #6026, #6754-#6771)

Waste management and environmental support personnel demonstrate a working knowledge of facility systems and components related to safety. These personnel also give adequate attention to health, safety and environmental protection issues. (5480.20A, Ch. I; 5480.19, Ch. VIII; 10 CFR 830.120; 5700.6C, Criteria II; S/RID FA Training and Qualification (TQ) LMES ID #9729, #1365)

Approach

Record Review: Review for adequacy and completion, the training records which indicate waste management and environmental support personnel training on facility procedures and systems under their cognizance as well as system and facility hazards.

Interviews: Interview selected waste management and environmental support personnel to assess their understanding of actions when responding to abnormal and emergency conditions and facility hazards as well as their understanding of how these actions relate to the safety basis for operations. Determine if these personnel have an adequate knowledge of health, safety, and environmental protection issues.

Shift Performance: Observe drills, routine evolutions and normal operations, to assess the ability of waste management and environmental support personnel to safely operate systems and components in accordance with approved plant procedures.

OBJECTIVE

WM.3 The implementation status of DOE Orders 5400.1, 5400.5, 5480.4 and associated S/RIDs are adequate for operations. Non-compliance issues have been addressed. (**CORE REQUIREMENT #7**)

Criteria

All non-compliance issues are adequately addressed by DOE approved CSAs or

exemptions. The CSAs include an adequate technical basis and schedule for attaining compliance. Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Compensatory measures that are specified in the CSAs are adequately implemented. Plan for Continuing and Resuming Operations, Y/AD-623, dated October 1994. Y/AD-623, Standards/Requirements Implementation Assessment Instruction, Standards/Requirements Identification Document Development and Approval Instruction)

Approach

Record Review: Review order compliance packages for the listed orders and associated standards including all applicable CSAs, exemptions, and compensatory measures.

Interviews: If these orders are not fully implemented, interview management personnel to ensure they are aware of the non-compliance(s) and action necessary to fully implement the order requirements, as well as any interim compensatory measures.

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

CRAD REFERENCES

DOE-STD-1027-92	Guidance on Preliminary Hazard Classification and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Safety Analysis Reports
DOE-STD-1063-93	Establishing and Maintaining a Facility Representative Program at DOE Nuclear Facilities
DOE-STD-1073-93	Guide for Operational Configuration Management Program
DOE Order 4330.4B	Maintenance Management Program
DOE Order 5400.1	General Environmental Protection Program
DOE Order 5400.5	Radiation Protection of the Public and the Environment
DOE Order 5480.1B	Environment, Safety, and Health Program for Department of Energy Operations
DOE Order 5480.4	Environmental Protection, Safety and Health Protection Standards
DOE Order 5480.7A	Fire Protection
DOE Order 5480.8A	Industrial Hygiene
DOE O 440.1	Worker Protection
DOE Order 5480.19	Conduct of Operations Requirements for DOE Facilities
DOE Order 5480.20A	Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities
DOE Order 5480.21	Unreviewed Safety Questions
DOE Order 5480.22	Technical Safety Requirements
DOE Order 5480.23	Nuclear Safety Requirements
DOE Order 5480.24	Nuclear Criticality Safety
DOE Order 5480.28	Natural Phenomena Hazards Mitigation

DOE Order 5480.29	Employee Concerns Management System
DOE Order 5480.31	Startup and Restart of Nuclear Facilities
DOE Order 5482.1B	Environment, Safety and Health Appraisal Program
DOE Order 5483.1A	Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities
DOE Order 5700.6C	Quality Assurance
DOE Order 5820.2A	Radioactive Waste Management
DOE M 232.1-1	Occurrence Reporting and Processing of Operations Information
DOE O 151.1	Comprehensive Emergency Management System
DOE O 200.1	Training
DOE O 420.1	Facility Safety
DOE O 425.1	Startup and Restart of Nuclear Facilities
DOE O 440.1	Worker Protection Management for DOE Federal and Contractor Employees
DOE O 451.1	National Environmental Policy Act Compliance Program
DOE STD 1070-94	Guidelines for Evaluation of Nuclear Facility Training Programs
10 CFR 830.120	Quality Assurance Rule
10 CFR 835	Radiological Controls Rule

APPENDIX 3
FINDING CLASSIFICATION CRITERIA

FINDING CLASSIFICATION CRITERIA

This checklist will be used by the ORR team to evaluate if an issue must be corrected prior to startup.

A. Initial Screening

- 1 Does this issue involve a safety system?
- 2 Does this issue involve processes, functions or components identified in the Technical Safety Requirements/Operational Safety Requirements or nuclear safety control procedures?
- 3 Does this issue involve potential adverse environmental impact exceeding regulatory or site specific release limits?
- 4 Does this issue impact non-safety processes, functions or components which could adversely impact safety related processes, functions or components?
- 5 Is this issue non-compliant with a LMES or DOE-OR 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
ORR ASSESSMENT FORMS

ORR ASSESSMENT FORMS

FORM 1

FUNCTIONAL AREA:	OBJECTIVE , REV. DATE: PAGE NO.	CRITERIA MET	
		YES	NO

OBJECTIVE

Criteria

Approach

Records Reviewed: (List Format)

- o
- o
- o

Interviews Conducted: (List Format)

- o
- o
- o

Shift Performance Evolution: (List Format)

- o
- o
- o

Discussion of Results:

Record Review:

Interviews:

Shift Performance:

FUNCTIONAL AREA:	OBJECTIVE , REV. DATE: PAGE NO. 3	CRITERIA MET	
		YES	NO

Conclusion: (Meets Criteria or Exceptions)

Issue(s): (List Format)

- o
- o
- o

Inspector: _____	Approved: _____ Team Leader
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ORR DEFICIENCY FORM 2

Functional Area:	Objective No.:	Finding Observ.:	Pre-Start Post-Start	Issue No.: Rev. No.: Date:
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ISSUE: (Short Title)

REQUIREMENT:

REFERENCE(S): (Specific as to section)

DISCUSSION: (Including basis for issue and specific example for generic issue)

Inspector: _____	Approved: _____ Team Leader
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