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Letter, Felton to Jackson
Dated: July 27, 1998

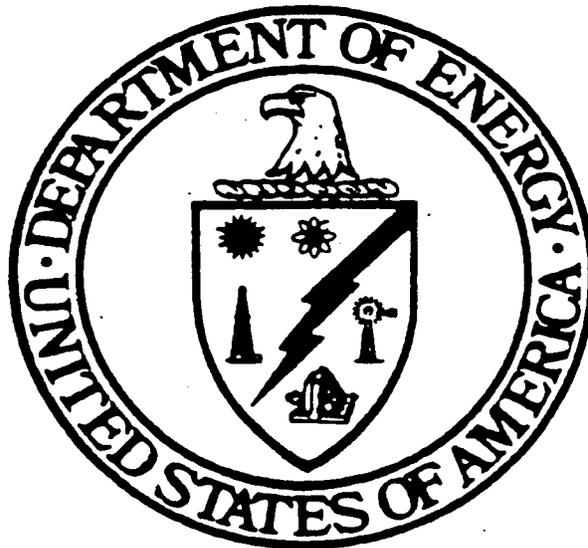
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U.S. DEPARTMENT OF ENERGY OAK RIDGE OPERATIONS

Y-12 SITE OFFICE ASSESSMENT OF ENRICHED URANIUM OPERATIONS PHASE A1 ACTIVITIES AT THE Y-12 PLANT

April 30, 1998



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(Name and Title)
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**U. S. DEPARTMENT OF ENERGY
OAK RIDGE OPERATIONS**

**Y-12 SITE OFFICE ASSESSMENT
OF ENRICHED URANIUM OPERATIONS
PHASE A1 ACTIVITIES AT THE Y-12 PLANT**

April 30, 1998

Approved By:



Robert J. Spence, Y-12 Site Manager

Date:

4/30/98

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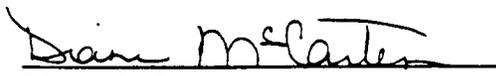

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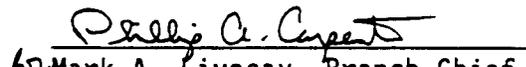
ENRICHED URANIUM OPERATIONS RESTART - PHASE A-1
Y-12 SITE OFFICE MANAGEMENT AND SUBJECT MATTER EXPERTS

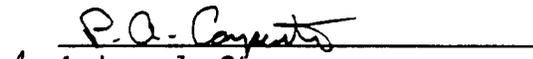

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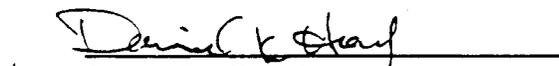

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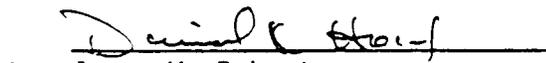

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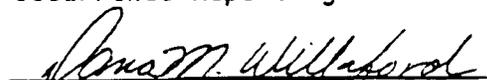

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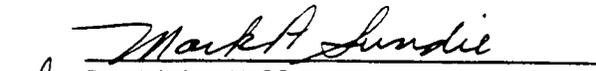

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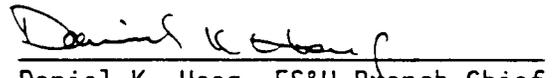

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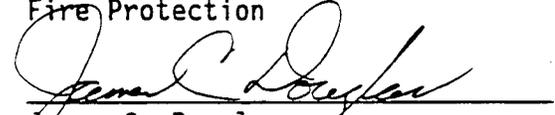

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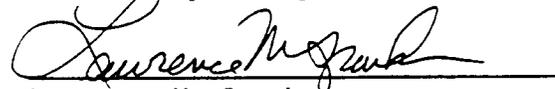

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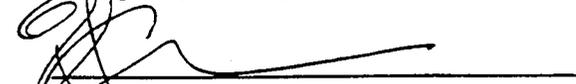

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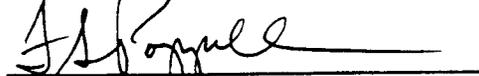

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ENRICHED URANIUM OPERATIONS RESTART - PHASE A-1
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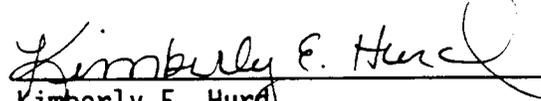

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EXECUTIVE SUMMARY

The Department of Energy (DOE) Y-12 Site Office (YSO) organized and tasked a 20-member team of subject matter experts (SME), with diverse nuclear backgrounds, to conduct an assessment to verify the state of readiness of Lockheed Martin Energy Systems, Inc., (LMES) to resume safe operations of the Enriched Uranium Operations (EUO) in accordance with the requirements of DOE Order 425.1, *Startup and Restart of Nuclear Facilities*, following the stand-down of the Y-12 Plant facilities on September 22, 1994. These YSO review activities were full-time, dedicated efforts in planning and executing the YSO oversight of resumption activities at the Y-12 Plant.

This assessment confirmed the responsibility of DOE line management for verifying and recommending the contractor's readiness to resume operations to the approval authority and was conducted in the Enriched Uranium Operations (EUO) mission area during the last half of calendar year 1997 and in early calendar year 1998.

The YSO team performed the assessment in accordance with *Y-12 Site Office Assessment and Oversight Plan for Enriched Uranium Operations, Phases A1 and A2*, dated March 11, 1998, that was scoped to be consistent with the *Lockheed Martin Energy Systems, Inc., Readiness Assessment Plan of Action (POA) for the Enriched Uranium Operations Activities at the Oak Ridge Y-12 Plant*, with the DOE Order 425.1, and with the items required for resumption as identified by LMES. The YSO Core Objectives (CO), which are described by the DOE Order 425.1 and scoped in the LMES POA, were used and organized into 16 functional areas as follows:

- Conduct of Operations
- Configuration Management
- Emergency Management
- Engineering
- Environmental Protection
- Fire Protection
- Maintenance
- Management Systems
- Nuclear Criticality Safety
- Nuclear Facility Safety
- Occupational Safety and Health Administration (OSHA)
- Packaging and Transportation
- Quality Assurance
- Radiological Protection
- Training and Qualification

- Waste Management

A portion of the YSO review included assessments of LMES' implementation of DOE Order 425.1 requirements in the performance both of their Management Self-Assessment (MSA) and of the LMES Operational Readiness Review (ORR).

During the review, the YSO generated 106 deficiencies. Seventy-six of these deficiencies were categorized as prerestart, and 30 of the 106 deficiencies were categorized as postrestart. In addition, the YSO reviewed existing open deficiencies to determine their applicability to EUO restart. As a result of this review, an additional 55 prerestart and 36 postrestart deficiencies were identified. LMES had closed all prerestart deficiencies, with the exception of 34 deficiencies at the time of this report. The remaining prerestart deficiencies have corrective action plans with closures scheduled to be completed within 15 days of this report. The LMES MSA and ORR for Phase A1 were completed and satisfactorily met the requirements of DOE Order 425.1 and verified the readiness of EUO to resume operations. On April 28, 1998, LMES submitted a letter to DOE management, certifying their readiness to resume activities in the EUO and documenting an acceptable status for all open items.

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

1.0 INTRODUCTION

The DOE formalized a system to standardize and control the process of facility start-ups as outlined and administered by DOE Order 425.1. As part of this process, the DOE line management must validate the contractor's state of readiness and then must provide a recommendation to proceed with the DOE Independent Operational Readiness Review (ORR). The overall framework to restart facilities at the Y-12 Plant is included in Y/AD-623, *Plan for Continuing and Resuming Operations, Oak Ridge Y-12 Plant*, that was concurred by the Assistant Secretary for Defense Programs. To meet the intent of the DOE Order 425.1 requirements, the DOE YSO organized and tasked a team of SMEs to evaluate LMES readiness to resume EUO activities. YSO biographical information is provided in Appendix 6.4.

The results of the YSO assessment of the EUO and the recommendations to the Y-12 Site Manager are documented in this report.

1.1 Background

The YSO was tasked to monitor the management and performance of the EUO Program of LMES in order to evaluate the restart progress, the adequacy of LMES Functional Area upgrades for restart, and the overall EUO readiness in accordance with the DOE Order 425.1. These criteria are chosen to provide the Y-12 Site Manager with the bases for the recommendation to proceed with the independent DOE ORR.

The contractor was required to complete all the EUO activities to support national defense priorities by determining the plant systems and processes needed to support mission activities; by upgrading the facilities, engineering information, programs, and procedures; and by ensuring personnel training, qualification, and performance of those processes to ensure safe operation. The EUO Process-Based Restart (PBR) was managed by the contractor in accordance with the DOE-approved contractor EUO Restart Plan, schedule, and budget that defines the estimated scope, duration, resource, costs, and the POA that defines the scope and duration of the ORR processes.

The PBR process was divided into three phases that represent the major plant processes and programs that must be ready for restart of EUO to support manufacturing and production. This report applies to the first of the restart phases, Phase A1. Phase A1 covers the metal-working (casting, machining, rolling, and forming) processes, including some supporting accountability processes. All of these operations are located in Buildings 9212 and 9215 and in several smaller support buildings. Within the scope of this Plan, the YSO incorporated oversight activities from the following four general areas:

- Facility Representative Oversight Activities
- Functional Area Assessment Activities
- Program Management and Environmental Safety and Health Branch Activities
- Schedule Monitoring and Oversight

This report describes the combined results of the YSO assessments and provides the recommendation to the YSO Site Manager to commence the independent DOE ORR.

1.2 Scope

Management of both the DOE and LMES made the decision to restructure the Phase A restart of EUO into two ORRs--Phase A1 (casting, machining, rolling, and forming) and Phase A2 (accountability processes). The restructuring was necessary to support DOE's national priority program. This restructuring does not change the total scope of Phase A; therefore, these changes neither will compromise safety nor will have any impact on the mission schedule. The DOE POA and LMES POA were revised to reflect this restructure.

The YSO assessment, which was conducted in accordance with *Y-12 Site Office Assessment and Oversight Plan for Enriched Uranium Operations Phase A*, evaluated the adequacy of the actions taken by LMES to prepare EUO for restart in 16 functional areas. These functional areas were assessed, and the results were documented in accordance with YSO Operating Procedure YSO-5.4.1, *Restart Team Assessments*, dated April 15, 1995.

2.0 OVERALL ASSESSMENT PROCESS

2.1 Conduct of the Assessment

This assessment was based upon a set of criteria and review-approach documents (CRADs) that have been generally used and accepted in ORR in Defense Program (DP) facilities throughout the DOE Complex. In addition to the readiness of the people, documentation, and equipment, Phase A1 contains a validation of the programmatic elements of each functional area. This validation of the administrative and safety management programs is applicable to the entire EUO facility complex. The CRADs used in this assessment were designed to ensure that the facility is compliant with the minimum core requirements, as outlined in Doe Order 425.1, and is ready for restart. Each SME had CRADs assigned to their respective functional area that required documentation of their individual reviews. In general, the assessment approach included a review of each functional area to ensure the contractor has established an adequate program for a safe restart. This determination was based upon a graded approach; some program items were deemed as postrestart. Each SME validated the implementation of those portions of the program through direct observation in the field.

The assessments were performance-based with satisfactorily validated requirements identified for restart in the POA. The CRADs define both the criteria by which these requirements are satisfied and the review approach by which each criteria are assessed. The review generally involved observations, document reviews, and interviews. Details of the reviews and deficiencies are maintained in the YSO evidence files.

The YSO Facility Representatives were also a component of the YSO contractor oversight program with the responsibilities for routine assessments of operational performance, quality assurance, management control, and assurance of worker safety and health.

The Facility Representatives served as a primary safety component of the YSO contractor oversight program with the responsibilities for routine assessments of operational performance, quality assurance, management control, and the assurance of worker safety and health. Their objectives included planned assessments to achieve a general evaluation of activities germane to EUO restart and monitoring of EUO-continuing operations to ensure that these activities are consistent with the DOE approvals for those activities.

2.2 Assessment Documentation Process

SMEs documented their assessment activities immediately upon completion of their reviews. Assessment activities, which have documented weaknesses and deficiencies, were made available to the EUO Facility Representatives, SMEs, and the Operations Support Team.

Prior to providing any deficiencies to the contractor, the deficiencies were provided to the Deficiency Review Board (DRB) for screening and evaluation. The SME submitted the deficiency to the DRB by completing a Form 2 (EUO Deficiency Form). The DRB evaluated each deficiency identified for applicability to the scope of restart and categorized the deficiency as prerestart or postrestart. The DRB also ensured that all deficiencies are included in the YSO Monthly Assessment Report (MAR).

The formal restart documentation of each functional area was accomplished by completing the Form 1 (EUO Appraisal Form). A Form 1 was completed for each objective listed in the Functional Area CRADs. The information contained on the Form 1 was drawn from the assessment documentation. Each Form 1 was sufficiently detailed to indicate how each of the review approach was accomplished, and any deficiencies identified should be highlighted.

3.0 SUMMARY OF RESULTS

3.1 Functional Area Summaries

3.1.1 Conduct of Operations (OP)

The objective of this functional area review was to verify that the contractor had established and effectively implemented an adequate Conduct of Operations Program. The specific objectives were to ensure (1) Operations personnel have an adequate level of knowledge of the system and facility hazards and an awareness of safety, health, and environmental requirements; (2) Conduct of Operations requirements, as stated in DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*, are adequately implemented to resume operations; (3) adequate, technically correct procedures that are consistent with the facility safety basis have been developed and implemented; and (4) an effective routine operations drill program has been established and implemented.

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