OhioEPA
State of Ohio Environmental Protection Agency

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February 24, 1998

Re: Director's Final Findings & Orders
United States Department of Energy
Portsmouth Gaseous Diffusion Plant
Lockheed Martin Energy Systems, Inc.
Piketon, Ohio
US EPA ID No.: OH7 890 008 983

Gene Gillespie, Manager
U.S. Department of Energy
Portsmouth Gaseous Diffusion Plant
P.O. Box 700
Piketon, Ohio 45661-0700

Rebecca Bell, Esq.
Lockheed Martin Energy Systems, Inc.
P.O. Box 2003
Oak Ridge, Tennessee 37831-8014

CERTIFIED MAIL

Dear Mr. Gillespie and Ms. Bell:

Transmitted herewith are Final Findings & Orders of the Director concerning the matter indicated.

Sincerely yours,

Thomas E. Crepeau

Thomas E. Crepeau, Manager
Data Management Section
Division of Hazardous Waste Management

TEC/dhs

cc: Mark Navarre, Acting Chief Counsel
Michael Savage, Asst. Chief, DHWM
Pamela Allen, Manager, CAS, DHWM
Edwin Lim, Manager, RECS, DHWM
Steve Hamlin, DHWM, SEDO
Donna Goodman, DHWM, SEDO
Beth Gianforcaro, PIC
Jim Payne, AGO

Issue Date: February 24, 1998

Effective Date: February 24, 1998

BEFORE THE
OHIO ENVIRONMENTAL PROTECTION AGENCY

In the Matter of:

United States Department of Energy	:	**Director's Final**
Portsmouth Gaseous Diffusion Plant	:	**Findings and Orders**
P.O. Box 700	:	
Piketon, Ohio 45661-0700	:	
	:	
	:	
	:	
Lockheed Martin Energy Systems, Inc.	:	
Portsmouth Gaseous Diffusion Plant	:	
P.O. Box 628	:	
Piketon, Ohio 45661-0628	:	

Respondents

It is hereby agreed by and among the Parties hereto as follows:

I. JURISDICTION

These Director's Final Findings and Orders ("Orders") are issued to the United States Department of Energy ("Respondent DOE") and Lockheed Martin Energy Systems, Inc. ("Respondent LMES") pursuant to the authority vested in the Director of Environmental Protection ("Director") under Chapter 3745, and the hazardous

I certify this to be a true and accurate copy of the official document as filed in the records of the Ohio Environmental Protection Agency.

By: Zena L Clements Date 2-24-98

OHIO E.P.A.

FEB 24 98

ENTERED DIRECTOR'S JOURNAL

waste laws in Chapter 3734, of the Ohio Revised Code ("ORC"). Orders number 1 and 3 of these Orders are issued pursuant to ORC Sections 3734.11 and 3734.13. Orders number 2 and 3 of these Orders are issued pursuant to ORC Section 3734.02(G).

II. PARTIES BOUND

These Orders shall apply to and be binding upon the Respondents, their assigns, and successors in interest. With respect to Respondent DOE, no change in ownership or operation of the Facility will in any way alter Respondent DOE's responsibilities under these Orders, except as otherwise provided by law. The obligations of Respondent LMES under these Orders shall terminate when LMES is no longer responsible pursuant to contract with DOE to perform work under these Orders; provided, however that this Section of the Orders does not absolve LMES from any liability for any violation which occurs prior to the termination of said contract. Except as otherwise expressly provided herein, Respondents' obligations under these Orders may be altered only by written approval of the Director.

III. DEFINITIONS

Unless otherwise stated, all terms used in these Orders shall have the same meaning as used in Chapter 3734. of the ORC and the regulations promulgated thereunder.

Party:
The term "Party" means DOE, LMES or Ohio EPA.

Parties:
The term "Parties" means DOE, LMES and Ohio EPA.

OHIO E.P.A.
FEB 24 98
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IV. FINDINGS OF FACT

The Director of Environmental Protection hereby makes the following findings:

1. Respondent DOE owns the Portsmouth Gaseous Diffusion Plant, a uranium enrichment facility, located in Pike County, Ohio, approximately twenty (20) miles north of the City of Portsmouth ("Facility").

2. Respondent LMES, formerly known as Martin Marietta Energy Systems, Inc., is a Delaware corporation licensed to do business in the State of Ohio on March 2, 1984. Respondent LMES has contracted with DOE to carry out certain day-to-day operations of the Facility in accordance with general directions given by DOE. Respondent LMES' responsibilities include, but are not limited to, the following: waste analysis and handling, monitoring, record keeping, reporting, and contingency planning. The United States Enrichment Corporation ("USEC") has, since July 1, 1993, leased and operated the uranium enrichment facilities and activities at the Facility.

3. The Respondents are each a "person" as defined in ~~Sections 1.59 and~~ 3734.01 of the ORC and rule 3745-50-10 of the Ohio Administrative Code ("OAC").

4. Respondent DOE has generated and Respondents now operate storage facilities for Respondent DOE's depleted uranium hexafluoride ("DUF_6") and lithium hydroxide ("LiOH") at the Facility. The Ohio Environmental Protection Agency ("Ohio EPA") has determined that the DUF_6 and LiOH are each a "waste" as that term is defined by ORC Section 3734.01 and OAC rules 3745-50-10 and 3745-51-03, and therefore, that Respondents are subject to the waste evaluation requirements in OAC rule 3745-52-11 for Respondent DOE's DUF_6 and LiOH stored at the Facility.

5. By letter dated December 20, 1990, and subsequent letters, Ohio EPA notified Respondent DOE that Ohio EPA had determined that Respondent DOE failed to evaluate the DUF_6 stored at the Facility, in violation of OAC rule 3745-52-11. By letter dated October 25, 1991, and subsequent letters, Ohio EPA notified

OHIO E.P.A.
FEB 24 '93
ENTERED DIRECTOR'S JOURNAL

Respondent DOE that Ohio EPA had determined that Respondent DOE failed to evaluate its LiOH stored at the Facility, in violation of OAC rule 3745-52-11.

6. Respondent DOE responded and notified Ohio EPA that Respondent DOE disagrees with Ohio EPA's determination that the DUF_6 and LiOH are wastes, and that Respondent DOE disagrees with Ohio EPA's determination that Respondent DOE is subject to and in violation of the waste evaluation requirements in OAC rule 3745-52-11 for its DUF_6 and LiOH stored at the Facility. Respondent DOE reserves these objections, notwithstanding Respondent DOE's agreement to these Orders.

7. On November 10, 1994, Respondent DOE published an announcement of its intent to prepare an environmental impact statement concerning DUF_6, including an evaluation of potential use or reuse of DUF_6 (59 FED. REG. 56324 et seq.).

8. Since July 1, 1993, USEC has generated and continues to generate DUF_6 at the Facility. During this same period, USEC has operated and continues to operate storage facilities for its DUF_6 generated at the Facility.

9. Contracts have been entered into for the sale of all of the LiOH stored at the Facility to six (6) private firms for commercial uses. By the terms of the contracts, all of the LiOH will be removed from the Facility by the end of June 2001.

10. Once the LiOH is removed from the Facility for use in a production process, Ohio EPA will no longer consider the LiOH removed from the Facility to be a waste.

11. Pursuant to ORC Section 3734.02(G), the Director of Ohio EPA may by order exempt any person generating, storing, treating, transporting or disposing of hazardous waste in such quantities or under such circumstances that, in the Director's determination, it is unlikely that public health or safety or the environment will be adversely affected thereby, from any requirement to obtain

OHIO E.P.A.
FEB 24 '98
ENTERED DIRECTOR'S JOURNAL

a permit or license or comply with the manifest system or other requirements of ORC Chapter 3734.

12. Pursuant to ORC Section 3734.02(G), the Director has determined that it is unlikely that public health or safety or the environment will be adversely affected by the Respondents not evaluating the DUF_6, both generated and stored at the Facility, and the LiOH in storage at the Facility, provided that the Respondents comply with the requirements set forth in the following orders.

V. ORDERS

The Director hereby issues the following Orders:

Compliance Orders

1. A. LiOH

i Respondents shall implement and comply with the LiOH Storage Plan contained in Exhibit A attached to these Orders, and any future amendments thereto approved by Ohio EPA, in accordance with the terms, conditions and schedules contained therein. The LiOH Storage Plan is incorporated by reference herein.

ii. Respondent DOE shall continue to make good faith efforts to remove the LiOH from the Facility under the existing sales contracts or to otherwise sell, market, use or reuse the LiOH.

iii. On or before the 31st day of December, of each year Order 1 remains in effect, Respondent DOE shall submit to Ohio EPA a written Annual Report for the previous federal fiscal year that summarizes Respondent DOE's good faith efforts to remove the

OHIO E.P.A.
FEB 24 93
ENTERED DIRECTOR'S JOURNAL

LiOH from the Facility under the existing sales contracts or to otherwise sell, market, use or reuse the LiOH.

B. DUF_6

i. Respondents shall implement and comply with the DUF_6 Management Plan contained in Exhibit B attached to these Orders, and any future amendments thereto approved by Ohio EPA, in accordance with the terms and conditions contained therein. The DUF_6 Management Plan is incorporated by reference herein.

ii. Respondent DOE shall make good faith efforts to evaluate potential use or reuse of the DUF_6.

iii. On or before the 31st day of December, of each year Order 1 remains in effect, until DOE's evaluation is completed, DOE shall submit to Ohio EPA a written Annual Report for the previous federal fiscal year that summarizes Respondent DOE's good faith efforts to evaluate potential use or reuse of the DUF_6.

C. Amendment of Plans

i. If Respondents or Ohio EPA identifies a need for Respondent to amend the approved LiOH Storage Plan or the approved DUF_6 Management Plan, the Respondents or Ohio EPA shall provide written notification of such need and the reasons therefore. The notification shall be of sufficient detail to fully explain the rationale and circumstances that justify such amendment. Such need to amend the approved DUF_6 Management Plan may include transfer of ownership to Respondent DOE of DUF_6 generated by USEC at the Facility.

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

ii. Within thirty (30) days of the date of such written notification, or within such other time as agreed by Ohio EPA and Respondents, Respondents shall submit an amended plan to Ohio EPA for review and approval. If Respondents do not have sufficient information on the proposed amendment in order to submit an amended plan within the required time frame, Respondents may propose an alternative schedule for submitting an amended plan.

iii. In reviewing any proposed amendment, Ohio EPA agrees to consider all reasons provided by Respondents in support of their proposed amendment, including available funding. If Ohio EPA does not expect to approve the proposed amendment, Ohio EPA will provide Respondents with a written statement explaining the reasons. Prior to sending Respondents a written statement explaining the reasons it does not expect to approve the proposed amendment, Ohio EPA will consult with Respondents regarding the proposed amendment.

iv. Within thirty (30) days of Respondents' receipt of such written statement explaining the reasons, or within such other time agreed by Ohio EPA and Respondents, Respondents shall submit a revised amended plan, submit a new amended plan, or submit a written statement explaining Respondents' reasons for not submitting an amended plan.

v. Ohio EPA will notify Respondents in writing, in a timely manner, of its approval or disapproval of the amended plan. The amended plan shall be enforceable in the same manner as the approved plans attached to these Orders. Prior to any disapproval of a proposed amendment, Ohio EPA will consult with Respondents regarding the proposed amendment. Any determination by Ohio EPA to disapprove a proposed amendment will be accompanied by a written statement detailing the reasons for disapproval.

OHIO E.P.A.

FEB 24 '93

ENTERED DIRECTOR'S JOURNAL

vi. If any Party disagrees with a written notification of the need to amend either plan, or if Respondents disagree with any Ohio EPA decisions made according to Order 1.C., any Party may initiate the dispute resolution procedures of Section VIII.

D. Duty to Perform

Except as expressly provided in these Orders, Respondents shall cause all work to be performed in accordance with the LiOH Storage Plan and DUF_6 Management Plan. It is the responsibility of Respondent DOE to provide necessary funding to implement the LiOH Storage Plan and DUF_6 Management Plan.

Exemption Orders

2. A. An exemption from the requirement to evaluate the LiOH, according to OAC rule 3745-52-11, is hereby granted to Respondents.

B. An exemption from the requirement to evaluate the DUF_6 that is both generated and stored at the Facility, according to OAC rule 3745-52-11, is hereby granted to Respondents.

C. The exemption provided by these Orders shall not be construed to apply to any release to the environment, or any treatment or disposal of LiOH or DUF_6, except for releases that are cleaned up according to the approved LiOH Storage Plan and the approved DUF_6 Management Plan.

Expiration

3. A. The exemption for LiOH and the Respondents obligations under Order 1.A. shall expire when any one of the following events occur: (1) the

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

LiOH is no longer stored at the Facility; (2) ten years have passed since the effective date of these Orders; (3) the Respondents evaluate the LiOH according to OAC rule 3745-52-11; or (4) the Director evokes the exemption in Order 2.A. of these Orders.

B. The exemption for DUF_6 and the Respondents' obligations under Order 1.B. shall expire when any one of the following events occur: (1) the DUF_6 is no longer stored at the Facility; (2) ten years have passed since the effective date of these Orders; (3) the Respondents evaluate the DUF_6 according to OAC rule 3745-52-11; or (4) the Director revokes the exemption in Order 2.B. of these Orders. However, if a DUF_6 cylinder breach is discovered during the term of these Orders, the Respondents' obligations under Section III.B. of the DUF_6 Management Plan contained in Exhibit B attached to these Orders shall continue until all work required by that Section with respect to that breach is completed.

C. If any Party expects an exemption to expire due to the passage of ten years, the Parties agree to meet and confer in good faith, upon request of any Party, to discuss the possibility of renewing the exemption.

VI. PROJECT MANAGERS

Ohio EPA's Project Manager is Donna Goodman of Ohio EPA's Southeast District Office. Respondent DOE's Project Manager is Melda Rafferty. Respondent LMES' Project Manager is the LMES-Portsmouth Site Manager. Either Party may change its designated Project Manager by notifying the other Party, in writing, ten (10) business days before the change if possible.

Each Project Manager shall be the primary contact regarding the implementation of these Orders. The Project Managers shall meet periodically, as appropriate, to discuss progress and problems regarding the implementation of these Orders.

OHIO E.P.A.
FEB 24 93
ENTERED DIRECTOR'S JOURNAL

VII. NOTICE

All documents to be submitted pursuant to these Orders shall be submitted to the following persons at the following addresses:

Ohio EPA:

Ohio Environmental Protection Agency
Southeast District Office
Division of Hazardous Waste Management
Attn: RCRA Group Leader
2195 Front Street
Logan, OH 43138

and

Ohio Environmental Protection Agency
Division of Hazardous Waste Management
Attn: Manager, Compliance Assurance Section
1800 WaterMark Drive
Columbus, Ohio 43215-1099

LMES:

Lockheed Martin Energy Systems, Inc.
Portsmouth Gaseous Diffusion Plant
Attn: Portsmouth Site Manager
P.O. Box 628
Piketon, OH 45661-0628

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

DOE:

U.S. DOE, Portsmouth Gaseous Diffusion Plant
Attn: Portsmouth Site Manager
P.O. Box 700
Piketon, OH 45661-0700

or to such persons and addresses as may hereafter be otherwise specified in writing.

VIII. DISPUTE RESOLUTION

A. The procedures of this Section shall apply to any good faith dispute arising under these Orders. For purposes of this section, the term "Respondents" means DOE, LMES or both.

B. Within thirty (30) days following the occurrence of circumstances giving rise to a dispute, Respondents and Ohio EPA shall make reasonable efforts to informally resolve the dispute at the project manager level. If resolution cannot be achieved informally, the disputing party may elevate the dispute for resolution pursuant to paragraph C. of this section. If Respondents do not submit a written notification of dispute to Ohio EPA within thirty (30) days of the occurrence of the circumstances giving rise to the dispute, Respondents shall be deemed to have accepted the position of Ohio EPA.

C. Within thirty (30) days following the occurrence of circumstances giving rise to a dispute, any Party may initiate formal dispute resolution under this paragraph. To initiate formal dispute resolution, the disputing party shall submit to the

OHIO E.P.A.
FEB 24 93
ENTERED DIRECTOR'S JOURNAL

other parties a written notification of the dispute. The written notification of the dispute shall specify the nature of the dispute, the work affected by the dispute, the disputing party's position with respect to the dispute and the information the disputing party is relying upon to support its position.

D. Within thirty (30) days of written notification of a dispute, the Project Managers and designated representatives of the parties shall attempt to resolve such dispute. For DOE, the designated representative(s) shall include the DOE-Portsmouth Site Manager. For LMES, the designated representative(s) shall include the LMES-Portsmouth Site Manager. For Ohio EPA, the designated representative(s) shall include the Assistant Chief of the Division of Hazardous Waste Management.

E. Within thirty (30) days of written notification of the dispute, if the Project Managers and designated representatives of the Parties are unable to resolve the dispute, any Party may submit a written statement of the dispute to Ohio EPA's Chief of the Division of Hazardous Waste. The Chief may meet with the Project Managers and designated representatives of the Parties and may request additional information regarding the nature of the dispute and the respective positions of the Parties. Within thirty (30) days of receipt of the written statement of dispute, the Chief will consult with the DOE-Portsmouth Site Manager and the LMES-Portsmouth Site Manager.

The Chief will notify the Project Managers and designated representatives of the Parties in writing of Director's final decision regarding the dispute. The Director's final decision shall be signed by the Director. Except as otherwise provided under paragraph F. below, the Director's final decision shall be binding on the Parties, subject to administrative or judicial appeal or review according to applicable law.

OHIO E.P.A.
FEB 24 93
ENTERED DIRECTOR'S JOURNAL

F. Within thirty (30) days of Respondents' receipt of a Director's final decision concerning an Ohio EPA notification of need to amend the approved LiOH Storage Plan or the approved DUF_6 Management Plan, Respondents shall notify the Director, in writing, of their acceptance or non-acceptance of the Director's final decision. If Respondents accept the Director's final decision, or fail to notify the Director of non-acceptance, in accordance with this paragraph, such decision shall be binding on the Parties. If Respondents notify the Director, in accordance with this paragraph, of non-acceptance of the Director's final decision, it will not be binding on the Respondents. Under Section X., the Parties have reserved rights as to any further action.

G. Upon written request by the Respondents, Ohio EPA will extend the time period for completion of work affected by the dispute. Such extension shall include but not exceed the actual time taken to resolve the dispute in accordance with this Section. The Chief will notify the Parties, in writing, of the extension.

H. Within thirty (30) days of a resolution or final decision under this Section, Respondents shall incorporate and implement such resolution or final decision, subject to administrative or judicial appeal or review of a Director's final decision according to applicable law. The time periods designated in this Section may be extended by mutual written agreement of the Parties.

IX. OTHER APPLICABLE LAWS

Nothing in these Orders shall be construed as waiving or compromising in any way the applicability and enforcement of any other statutes or regulations applicable to the Respondents' activities at the Facility. Ohio EPA reserves all rights and privileges except as specified herein. Respondents reserve all defenses they may have.

OHIO E.P.A.
FEB 24 '93
ENTERED DIRECTOR'S JOURNAL

X. RESERVATION OF RIGHTS

Nothing contained in these Orders, including Section VIII, shall be construed to prevent the Director from seeking legal or equitable relief to enforce the terms of these Orders or from taking other administrative, legal or equitable action as deemed appropriate and necessary, including seeking penalties against the Respondents for noncompliance with these Orders. Nothing contained herein shall be construed to prevent Ohio EPA from exercising its lawful authority to require the Respondents to perform additional activities at the Facility, pursuant to Chapter 3734. of the ORC or any other applicable law in the future. Nothing herein shall restrict the Respondents from raising any defenses with respect to such actions.

Nothing in these Orders shall be construed to limit the authority of Ohio EPA to seek penalties for violations of these Orders. Nothing in these Orders shall be construed to limit the authority of Ohio EPA to seek relief for violations not addressed in these Orders. Nothing herein shall restrict the right of the Respondents to raise any administrative, legal or equitable claim or defense with respect to such further actions which Ohio EPA may seek to require of the Respondents. Nothing in these Orders shall be construed as a waiver of DOE's jurisdiction over source, by-product, or special nuclear materials under the Atomic Energy Act, 42 U.S.C. Section 2201, et seq. Nothing in the preceding sentence alters the Respondents' duty to comply with these Orders.

The Director reserves the right to revoke these Orders, or any portion hereof, upon a determination by Ohio EPA that such revocation is necessary to protect human health or safety or the environment. The Respondents reserve the right to seek administrative or judicial review of any such revocation.

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

It is the position of Ohio EPA that the federal Anti-Deficiency Act, 31 U.S.C. Section 1341, as amended, does not apply to any obligations set forth in these Orders, and obligations hereunder are unaffected by the Respondent DOE's failure to obtain adequate funds or appropriations from Congress. It is Respondent DOE's position that the obligations set forth in these Orders are subject to the provisions of the Anti-Deficiency Act and are subject to the availability of funding. The Parties agree that it is premature to raise and resolve the validity of such positions at this time.

XI. OTHER CLAIMS

Nothing in these Orders shall constitute or be construed as a release from any claim, cause of action or demand in law or equity against any persons, firm, partnership or corporation, not a signatory to these Orders, for any liability arising out of or relating to the operation of the Respondent DOE's Facility.

IT IS SO ORDERED:

Donald R. Schregardus, Director

February 24, 1998
Date

XII. SIGNATORIES

Each undersigned representative of a party signatory to these Orders certifies that he or she is fully authorized to enter in the terms and conditions of these Orders and to legally bind such signatory to this document.

OHIO E.P.A.

FEB 24 98

ENTERED DIRECTOR'S JOURNAL

XII. WAIVER

The Respondents agree that these Orders are lawful and reasonable and that the times provided for compliance herein are reasonable. The Respondents, by acceptance of these Orders, agree to comply with all conditions of these Orders and acknowledge that the Respondents' failure to do so may result in further legal action by Ohio EPA.

The Respondents hereby waive the right to appeal or otherwise challenge the issuance of these Orders. Nothing in these Orders shall affect the Respondents' rights to seek administrative or judicial review of other final actions by the Director pursuant to ORC Section 3745.04 or other applicable law.

Ohio EPA and the Respondents agree that in the event that these Orders are appealed by any other party to the Environmental Board of Review, or any court, the Respondents retain the right to intervene and participate in such appeal in support of these Orders. In such event, the Respondents shall continue to comply with these Orders notwithstanding such appeal and intervention unless these Orders are stayed, vacated, or modified.

IT IS SO AGREED:

United States Department of Energy

By _____ Date 5/28/97

Manager, Oak Ridge Operations Office
Title

OHIO E.P.A.

FEB 24 98

ENTERED DIRECTOR'S JOURNAL

Lockheed Martin Energy Systems, Inc.

Robert I Van Hook — 8/18/97

By — Date

PRESIDENT

Title

Ohio Environmental Protection Agency

Donald R. Schregardus — February 24, 1998

Donald R. Schregardus, Director — Date

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OHIO E.P.A.

FEB 24 98

ENTERED DIRECTOR'S JOURNAL

EXHIBIT A

November 1, 1996

LITHIUM HYDROXIDE (LiOH) STORAGE PLAN

I. Location and description of LiOH Warehouses

A. All buildings are outside the perimeter fence.
B. The buildings are numbered X-744T, U, S, K, N, P, and Q.
C. The buildings are constructed of steel frames on concrete pads.
D. Buildings K, S, T, and U were upgraded in 1987-88 with new roof and metal siding.
E. Buildings N, P, and Q were built in 1988.
F. The floor space area (in square feet) in each building is as follows:

1.	K	35,000
2.	S	50,000
3.	T	100,000
4.	U	100,000
5.	N	14,600
6.	P	14,600
7.	Q	14,600

OHIO E.P.A.
FEB 24 98
DIRECTOR'S JOURNAL

II. Inspections of the LiOH Warehouses

A. A visual inspection of each of the LiOH warehouses shall be conducted on afternoon and evening shifts each Monday thru Friday to ensure the following:

1. The access doors to the warehouses have not been compromised, and
2. The fire extinguishers are in place at each warehouse.

B. Monthly inspections of the accessible portions of the interior of each warehouse shall be completed for the following:

1. the integrity of accessible drums,
2. the warehouse roofs for leaks,
3. the general condition of the warehouses,
4. spill control equipment available at each warehouse, and
5. signs legible from a distance of 25 ft. with the legend "Danger - Unauthorized Personnel Keep Out" at each of the entrances of each warehouse.

III. Shipping Operations [Added September 30, 1996]

A. Outside staging areas within close proximity of each LiOH storage warehouse shall be established. These areas will be used to accommodate timely sampling and processing of the LiOH drums.

1. Shipping from these staging areas shall commence immediately upon completion of laboratory analysis of the samples.

2. Storage of individual drums (not to exceed 4000) within the staging area shall not exceed 120 days and shall be documented.

B. The staging areas shall be configured as follows:

1. The surface of the staging areas shall be covered with a protective covering to prevent any spills from contacting the ground surface.

2. All drums shall be covered with a waterproof covering to protect them from the elements.

C. As part of the monthly inspection of the warehouses (Section II, B), the staging areas shall be inspected to verify the integrity of the protective covering on the ground as well as assuring all drums are covered with the protective covering.

D. Any spills occurring during staging operations shall be managed in accordance with section IV of this plan.

IV. Contingency Plan

A. The PORTS emergency response procedures shall apply and be implemented in response to emergencies involving LiOH.

B. Any LiOH spilled shall be cleaned up immediately and characterized. Note: Not all spills shall be managed as waste. The vendor has indicated they will take spilled LiOH if it is not contaminated with too much debris.

C. The characterized waste shall be managed appropriately.

D. Ohio EPA shall be verbally notified within 48 hours of the discovery of any ruptured container if it is deemed to be a waste.

E. An area shall be established where ruptured drums shall be moved to be repaired or overpacked.

V. Records

A. One visual inspection shall be documented each week.

B. The monthly inspections shall be documented.

OHIO E.P.A.
FEB 24 '93
ENTERED DIRECTOR'S JOURNAL

VI. Reporting

A. Within 48 hours of discovery of a ruptured container, verbal notification shall be made to Ohio EPA if the container contents are deemed to be a waste.

B. Upon request by Ohio EPA, annual reports that provide the documentation of the required inspections and details of any unusual findings or observations during these inspections shall be submitted to Ohio EPA.

VII. Training

A. All personnel directly involved in the inspections and management of the LiOH shall be trained through classroom instruction or given on-the-job training to perform their duties. Records of such training shall be kept on plantsite.

EXHIBIT B

November 1, 1996

DEPLETED URANIUM HEXAFLUORIDE (DUF_6) MANAGEMENT PLAN

I. **DUF_6 Cylinder Surveillance Program.** The cylinder surveillance program consists of inspections, ultrasonic thickness testing and radiological surveys.

A. Inspections. The inspections shall be documented on a checklist which shall include the size, type, number, location, and physical description of all DUF_6 cylinder defect criteria. All accessible areas of all cylinders shall be visually inspected, using the following criteria:

OHIO E.P.A.
FEB 24 98
SHIELD DIRECTOR'S JOURNAL

1. **DUF_6 Cylinder Defect Criteria**

a. **General Cylinder Criteria**

Hole in cylinder
Visible leakage/contamination on cylinder or ground
* Bulge - protruding one-half inch or more
* Gouge - greater than one-sixteenth inch of metal moved
* Dent - greater than one-sixteenth inch deep
* Bent stiffening ring - cracked weld or separation of ring from body
Severe corrosion - local or extensive pitting and/or scaling that is evident on one third or more of the bottom shell and scaling consisting of layered flakes over one-eighth inch thick and over two inches in diameter

b. **Cylinder Body Contact Point**

Body ground contact
Stiffening ring ground contact
Evidence of water/cylinder contact from poor yard drainage
* Dent caused by lifting lug contact - greater than one-sixteenth inch deep
Evidence of lifting lug contact
* Wood saddle/resting block - cracking, splitting, rotting or sinking
Concrete saddle - cracking, chipping, corrosion or sinking
Debris between saddle and cylinder

c. **Valve End of Cylinder**

Evidence of contamination on valve.
* Bent valve body
Bent/separated skirt

Scale in skirt
Skirt in ground contact
Weep hole in skirt plugged
* Valve end not accessible
Packing nut missing/cracked
Port cap missing/cracked
Bent or sheared valve stems
Cracked bent valve protector
Identification(I.D.) plate missing
I.D. plate loose/cracked welds
New name plate attached to skirt/valve/plug

d. **Plug End of Cylinder**

Evidence of contamination on plug
* Bent or damaged plug
Bent/separated skirt
Scale in skirt
Skirt in ground contact
Weep hole in skirt plugged
Plug end not accessible

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

Note: Asterisked criteria indicate that after the restacking is completed that criteria may not apply.

2. **Inspection Frequency**

a. All DUF_6 cylinders in storage shall be visually inspected at least every four (4) years using the DUF_6 cylinder defect criteria.

b. DUF_6 cylinders stored in areas that exhibit poor drainage conditions (i.e., standing water for a period of forty-eight (48) hours following heavy rainfall) and cylinders with severe corrosion of cylinder surfaces or skirt areas shall be visually inspected annually using the DUF_6 cylinder defect criteria.

c. Valves with evidence of leakage (i.e., buildup of DUF_6 reaction products, discoloration around valve/plug) shall be inspected monthly. This inspection consists of the following:

1) Ensuring the plastic bag is still in place;

2) Checking the bag for clarity or new buildup of DUF_6 reaction products on valve; and

3) Taking a swipe sample from the valve to determine if contamination (alpha, beta, gamma) levels exist.

Note: A swipe sample is where a cloth or wipe is smeared over an area, nominally 100 cm^2 in surface area, to pick up loose surface contamination from the surface of the cylinder. The wipe is then read by the appropriate instrument for contamination level, normally reading out in dpm/100 cm^2 (DPM = disintegrations per minute).

d. Breached DUF_6 cylinders shall be inspected daily until the situation is mitigated. Inspections shall consist of the following:

1) Ensuring that tarps are in place to prevent precipitation from coming in contact with the cylinder and a catch pan placed beneath the cylinder to prevent material from dropping to the pavement.

2) Ensuring that contamination boundaries and transition zones are in place.

Note: A contamination boundary is an area established using a yellow and magenta rope or tape at the perimeter of an area determined by survey to be where no contamination has spread. Transition zones are established for going to and from the contamination zone.

3) Determining Hydrogen Fluoride (HF) content in air.

Note: HF content in the air is determined by hand-held HF detectors using an HF detection tube (such as Draeger Model 21/31) which are calibrated instruments to read out in concentration of HF.

4) Collecting DUF_6 reaction products for weighing (accountability);

5) Determining loose surface contamination levels of pad areas adjacent to the breach. See Section 2.C.3; and

6) Determining radiation levels at the breach.

Note: Determining radiation levels at the breach shall be accomplished by utilizing calibrated radiation instruments to determine contact readings and general area radiation dose levels in mrem/hr.

e. All DUF_6 cylinders shall be visually inspected immediately before movement. The pre-move inspection shall consist of the following:

1) Lifting lug weld (if lug is to be used for lifting the cylinder) - examining for cracked weld, bent lug, elongated lug lifting hole

OHIO E.P.A.

FEB 24 93

ENTERED DIRECTOR'S JOURNAL

2) The cylinder in general - examining for deep cracks, gouges, and cuts in shell (ref. I. A.1.)

3) Areas immediately next to saddle contact points - examining for evidence of DUF_6 reaction products or severe corrosion

4) Areas of previous lifting lug-to-cylinder contact points - examining for evidence of DUF_6 reaction products

f. All DUF_6 cylinders shall be visually inspected once it is lifted. This visual inspection of the contact points and all previously inaccessible areas shall be conducted to determine and assess whether there is evidence of DUF_6 reaction products, cracks, gouges, cuts, and/or severe corrosion.

g. All DUF_6 cylinders shall be visually inspected using the DUF_6 cylinder defect criteria (ref. I.A.) immediately after movement of the cylinder.

h. If any of the following defect conditions are noted during any inspections required by this DUF_6 Management Plan, recognized industrial applications and practices shall be used to determine the nature and extent of the defect condition and the method of repair or dispositioning of the DUF_6 cylinder. Code inspectors shall be used to evaluate the nature and extent of the defect condition. Depending on the condition of the DUF_6 cylinder, the code inspectors and appropriate personnel (See V B) shall recommend repairing cracks in welds, patching thinned cylinder wall areas or cold transfer of the contents to a new cylinder prior to movement.

1) Cracks in welds

2) Dents and gouges (ref. I.A.)

3) Presence of DUF_6 reaction products.

Note: The presence of reaction products represents a potentially unsafe condition and the area must be evacuated immediately and the emergency procedures for a breached cylinder must be followed. (See Section V)

B. Ultrasonic Thickness Testing

1. During DUF_6 cylinder relocation in fiscal years 1996, 1997, and 1998, the wall thickness of 10- and 14- ton mild steel DUF_6 cylinders shall be evaluated using non-destructive techniques, such as ultrasonic thickness (UT) measurements. A statistically based, randomly selected number of cylinders moved during the relocation exercise shall be inspected using UT measurement techniques. Initially, this sampling ~~shall consist~~ consisted of a random selection of ten percent of the cylinders moved during fiscal year 1996 (i.e. about 5000 cylinders are to be

OHIO E.P.A.
FEB 24 93
ENTERED DIRECTOR'S JOURNAL

moved in fiscal year 1996 and thus about 500 cylinders shall be UT measured). This data shall be analyzed and the number of samples UT measured shall be adjusted (e.g., increased, decreased, distribution of sampling changed) based on the results of the analysis of this initial data.

2. The following locations on the 10- and 14- ton DUF_6 storage cylinders shall be evaluated with hand-held UT probe measurements:

   a. Two measurements at the 12 o'clock position (top of cylinder)
   b. Two measurements at the 3 o'clock position (side of cylinder)
   c. One measurement near the center of the head, valve end
   d. One measurement near the center of the head, plug end
   e. One measurement directly beneath the valve
   f. One measurement directly beneath the plug
   g. On skirted cylinders, five measurements as close as possible to skirt/head interface.

3. After the DUF_6 cylinders have been restacked (FY 1999), 150 cylinders shall be inspected (on an annual basis) using UT measurement techniques. The cylinders that will be evaluated shall be selected at random from the cylinders inspected using UT techniques in FY 96, 97, and 98.

C. **Radiological Surveys.** All DUF_6 cylinders and storage yards shall be radiologically surveyed. The scope and frequency of the survey are noted below:

1. A general area survey of the cylinder yards shall be done annually using an approved dose-rate instrument to ensure that no area of the yards exceeds 5 mr/hr.

   Note: A general area survey is accomplished by measuring the dose rate utilizing a calibrated radiation detector held waist high while walking at a steady pace through the cylinder lots recording the three highest radiation levels per row of cylinders and recording all radiation levels that meet or exceed radiation area posting requirements.

2. A swipe survey of areas accessible by hand for all cylinders shall be done annually to determine levels of loose surface contamination (i.e., alpha, beta, and gamma).

   Note: See above I.A.2.C.3 for swipe description.

3. A swipe survey of valves/plugs suspected to be leaking shall be done when identified to determine levels of surface contamination (i.e., alpha, beta, and gamma).

4. A swipe survey of valves/plugs suspected to be leaking shall be done monthly to determine levels of surface contamination (i.e, alpha, beta, and gamma).

   Note: See I.A.2.c. for complete valve inspection description.

OHIO E.P.A.
FEB 24 '99
ENTERED DIRECTOR'S JOURNAL

5. A general survey of any breached cylinder(s) and areas next to the breached cylinder(s) shall be done daily until the breach is mitigated to assess the level of radiation (i.e., dose in mr/hr).

   Note: See I.A.2.d.6. for more detailed description.

6. A swipe survey of any breached cylinder(s) shall be done daily until the breach is mitigated to determine the level of surface contamination (i.e., alpha, beta, gamma).

   Note: See I.A.2.d. for complete breach inspection description.

II. **DUF_6 Cylinder Maintenance Program** shall consist of the following:

A. Renewing the protective coating of cylinders as necessary to avoid excessive corrosion; skirt cleaning; and replacing valve port cap and packing nuts on an as-needed basis. Any discrepancies discovered during this activity requiring maintenance action and during routine inspection of the yards shall be entered into the Maintenance Service Request (MSR) system within ten (10) working days.

   Note: The MSR system is a computerized tracking system for maintenance activities at PORTS. MSRs are submitted by the respective facility custodians for the work at the cylinder yards.

B. On-going inventory control shall consist of identification tag replacement and accountability of nuclear materials by location. Inventory of nuclear materials is managed through an established computerized database. Any discrepancies discovered during the course of this activity and during routine inspection shall be entered in the MSR system within ten (10) working days.

C. Cylinder maintenance shall be done in the cylinder storage yards. If breached cylinder contents must be transferred, it shall be done in the cylinder storage yards, the X-344 transfer facility, or a process building, depending on the type of transfer required and condition of the cylinder. Using the information collected in 1.A.1 above, DUF_6 cylinder defect criteria, cylinders shall be analyzed to determine method of repair or dispositioning. All transfers shall be done using established procedures for the appropriate method of transfer (autoclave or cold transfer).

III. **DUF_6 Cylinder Storage Yard Surveillance and Maintenance Program**

A. The storage yards shall be monitored for DUF_6 releases using (1) annual radiological surveys of all cylinders and yards, (2) monthly radiological surveys on valves/plugs suspected to be leaking, and (3) existing environmental monitoring programs (i.e., soil sampling, surface water monitoring, and sediment sampling). Once cylinder relocation has been initiated, monthly surface water run-off samples for total uranium analysis shall be collected at the established collection basin for X-745E Yard and a depression

OHIO E.P.A.

FEB 24 93

ENTERED DIRECTOR'S JOURNAL

on the south side of the X-745C Yard. The analytical methods are in-house procedures for alpha, beta and total uranium. The alpha/beta procedure is the same as SW-846, method 9310 except for the calibration standards. The total uranium is an inductively Coupled Plasma/Mass Spectrometry (ICP/MS) procedure capable of detecting down to I ppb Uranium.

B. Soil samples of the surface water runoff areas of the pad shall be sampled if a breached cylinder is discovered. The analytical methods are in-house for alpha, beta and total uranium. The alpha/beta procedure is the same as noted above in A. The total uranium is a fluorometric analytical procedure. Soil sample results and any corrective actions shall be documented. Rate and extent of any contamination found shall be defined and remediated in a manner that controls, minimizes or eliminates to the extent necessary to protect human health and the environment, escape of hazardous decomposition products to the groundwater, surface water or the atmosphere, in accordance with established spill procedures. For a breached DUF_6 cylinder, these procedure shall include the following:

1. Soil showing visible contamination shall be excavated immediately.

2. A statistically valid sampling plan that considers the soil type, properties of the spilled material, area affected, volume of the spill and other factor shall be developed.

3. This sampling plan shall guide the confirmatory sampling and any additional excavation and remediation.

4. Background for soils shall be in accordance with the Background Sampling Investigation of Soil and Groundwater Report for the Portsmouth Gaseous Diffusion Plant final document dated June 7, 1996 (DOE/OR/11-1323&D3) approved by Ohio EPA April 16, 1996.

5. Excavation of any soil contamination is required as expeditiously as possible and shall continue until the sampling analyses show results less than the mean plus two sigma of the background.

6. Any soil excavated as required by this plan shall be containerized and evaluated according to OAC rule 3745-52-11.

7. Remediation of any ground or surface water contamination resulting from the spill shall be in accordance with the provisions of Section VII of the Ohio Consent Decree and applicable portions of the U.S. EPA Administrative Order of Consent.

8. If a DUF_6 cylinder breaches during the pendency of the Order, the provisions of this Section shall apply until all work required by this Section is completed.

C. Routine maintenance activities for the existing and new storage yards shall consist of: (1) identifying and controlling vegetation, (2) identifying and repairing water retention areas (See I.A.2.b), (3) identifying and replacing or repairing signage (i.e., radiological

OHIO EPA
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

postings), (4) identifying and replacing damaged barricades, and (5) identifying and repairing defective lighting. Any discrepancies found shall be entered into the MSR system within ten (10) working days.

IV. Design and Construction of New Storage Yards

A. The new storage yards, at a minimum, shall be sloped and constructed of concrete in accordance with General Design Criteria, DOE Order 6430.1a. Concrete saddles shall be utilized for cylinder storage.

B. DUF_6 cylinders shall be stored by cylinder type (i.e., fourteen and ten ton). Fourteen and ten ton cylinders shall be stored with aisle spacing of about four feet. Cylinder center-to-center shall measure about sixty inches. Full cylinders shall be stacked two high. See attached drawing.

V. Contingency Plan

A. In the event of an emergency involving the DUF_6 cylinder yards, the Portsmouth Emergency Plan response procedures shall apply and the following actions taken:

1. Evacuate the area immediately.

2. Notify supervision and the Plant Shift Superintendent (PSS) immediately.

B. Appropriate personnel such as code inspectors, health physicists and metallurgists shall be summoned to evaluate the breach after the area is determined by the incident commander to be safe to enter.

C. Notification shall be made to the Ohio EPA.

D. Breaches shall be evaluated on a case-by-case basis and corrective actions taken as appropriate.

VI. Records

A. Procedures and/or checklists shall be used to implement the surveillance and maintenance requirements.

B. All DUF_6 cylinder and cylinder yard surveillance and maintenance activities shall be logged/recorded.

C. Records for activities (i.e., logs and checklists) required by this exhibit shall be maintained at the facility until cylinder disposition.

VII. Reporting

A. All records, (i.e., logs and checklists) required by the DUF_6 management plan and requested by Ohio EPA shall be provided. Within 24 hours of discovery, releases from DUF_6 cylinders shall be reported to Ohio EPA verbally detailing all pertinent information

OHIO EPA
FEB 24 98
ENTERED DIRECTOR'S JOURNAL

known at the time. Within 5 working days of the incident, a written report shall be submitted to the Ohio EPA documenting the details of the release, environmental monitoring that has been completed, corrective actions completed to-date, and any further actions to be taken. Recorded information shall include cylinder yard, section, row, position, breach size, possible causes, amount and location of product released, and nameplate information (e.g. cylinder number, model).

B. Within 30 days of receiving a written request by Ohio EPA, U.S. DOE and LMES shall provide to Ohio EPA a report that documents the surveillance and program improvements activities for the past quarter that were conducted in accordance with the DUF_6 management plan as described in sections I and IX of this outline. Nothing in this paragraph shall limit any statutory or regulatory authority that Ohio EPA may otherwise have to request information from inspection of DUF_6 at PORTS.

VIII. Training

DOE shall train all personnel directly involved in handling and inspection of cylinders, in order to comply with DOE procedures and the DUF_6 Management Plan. Class room instruction and on-the-job training shall be used. Refresher training shall occur for all involved personnel on an annual basis. Training shall be specific to the job performed, and shall include, if applicable, safe operation of cylinder handling equipment, lifting and moving of cylinders, and emergency response procedures. Inspectors shall also be trained on proper inspection procedures, including identification, description, measurement, and recording of all inspection criteria. DOE shall maintain records of training at the facility.

A code inspector shall be trained in the use of precision measuring instruments and various industrial practices/methods and interpretation of data. Code inspectors shall be tested by a certified American Society for Non Destructive Testing (ASNT) examiner. Records of this training shall be retained at the site.

IX. Program Improvements

U.S. DOE shall continue to make improvements to its comprehensive program of managing U.S. DOE's DUF_6 cylinders stored at PORTS. Examples of improvement projects U.S. DOE shall use to evaluate the cylinders are:

A. **Relevant Inspection Data.** The results of the cylinder inspections shall be used to evaluate trends and to develop annual reports.

B. **Coupon Studies.** These studies consists of using different steel types in the cylinder storage yards placed in various locations and angles. The purpose of this study is to measure atmospheric corrosion of metals in accordance with ASTM Standard G-50. The data are to determine whether the metal loss rate stabilizes over time.

C. **Ambient Condition and Time of Wetness Studies.** These studies consist of placing probes on the cylinders. Measurements are taken for surface moisture, surface temperature, relative humidity, and ambient temperature. The purpose of this study is to determine the time of wetness. The data obtained shall be used in conjunction with the corrosion probe data to define conditions that lead to accelerated corrosion and optimize cylinder storage conditions in the future.

FEB 24 93

ENTERED DIRECTOR'S JOURNAL

D. **Corrosion Probe Studies.** Probes are placed in various positions on cylinders and attached to an instrument that applies a small current and compares the difference in resistance across the element each time a measurement is taken. Measurements are taken on a monthly basis to calculate the corrosion rate and metal loss.

E. **Ultrasonic Thickness Testing.** This testing shall be conducted to obtain information on existing wall thickness and changes over time.

The purpose of the above program improvements is to determine the rate and extent of corrosion of a cylinder wall while in storage. DOE is planning to utilize an independent party to develop a standard for cylinders in storage. This independent interpretation shall be developed using the ASTM standard for pressure vessels in an operational configuration as the baseline. This interpretation along with the above program improvement studies shall be used to determine cylinder wall thickness to be used for long-term storage of cylinders.

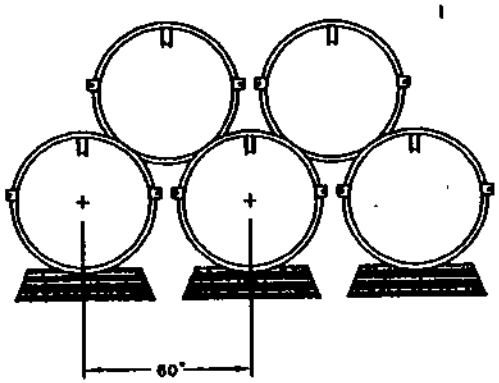
X. Other

At U.S. DOE, LMES, or Ohio EPA request (parties), the parties shall meet in January of each year to discuss improvements to U.S. DOE's DUF_6 management program.

OHIO E.P.A.

FEB 24 98

ENTERED DIRECTOR'S JOURNAL

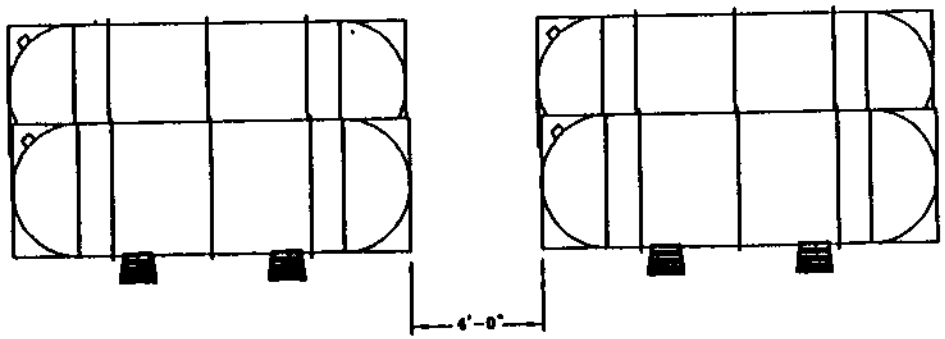


END VIEW

NOTES:

1. 14 AND 10 TON CYLINDERS WILL BE STACKED NO MORE THAN TWO HIGH, AND WILL BE SPACED, ON CONCRETE SADDLES, TO PROVIDE APPROXIMATELY 60 INCHES FROM THE CENTER OF ONE CYLINDER HEAD TO THE CENTER OF THE ADJACENT CYLINDER HEAD.

2. WHEN STACKED IN ROWS, THERE WILL BE APPROXIMATELY 4 FEET OF AISLE SPACE BETWEEN THE ENDS OF CYLINDERS (SKIRTED CYLINDERS SHOWN.) NON SKIRTED CYLINDERS WILL ALSO HAVE APPROXIMATELY 4 FEET OF AISLE SPACE AS MEASURED BETWEEN THE ELLIPTICAL HEADS.



SIDE VIEW

PORTSMOUTH RESTACKING
CONFIGURATION

OHIO E.P.A.
FEB 24 98
ENTERED DIRECTOR'S JOURNAL