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DOE-HDBK-7502-95
August 1995

DOE HANDBOOK

IMPLEMENTING U.S. DEPARTMENT OF ENERGY LESSONS LEARNED PROGRAMS

Volume II

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

FSC 6910

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Order No. DE95017323

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Foreword

The Department of Energy (DOE) Lessons Learned Handbook is a two-volume publication developed to supplement the DOE Lessons Learned Standard (DOE Standard: Development of Lessons Learned Programs (DOE-STD-7501-95)) with information that will assist organizations in developing or improving their lessons learned programs. Volume I of the Handbook includes greater detail than the Standard in areas such as identification and documentation of lessons learned. Volume I also contains sections on specific processes such as training and performance measurement. Volume II of the Handbook (this document) contains examples of program documents developed by existing lessons learned programs as well as communications material, functional categories, transmittal documents, sources of professional and industry lessons learned, and frequently asked questions about the Lessons Learned List Service. The Lessons Learned Handbook is a living document that will be updated as new information and examples become available.

Appendix I
Program Description

Appendix I
Program Description

Appendix I provides two examples of Lessons Learned Program Descriptions and one Program Management Plan. The Program Description may be combined with Lessons Learned Management Requirement and Procedures document (see Appendix III) or be provided separately. The examples provided include the following:

- Savannah River Lessons Learned Program, Semi-Annual Review of the Site Lessons Learned Program, July 1-December 31, 1994: Attachment I, Site Lessons Learned Program Description and Attachment II, Site Lessons Learned Program History
- DOE Richland Operations Office Lessons Learned Program, Draft Program Description, June 1995.
- DOE Richland Operations Office Lessons Learned Program, Draft Program Management Plan, June 1995.

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Appendix I-A

Savannah River Lessons Learned Program
Program Description

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ATTACHMENT I
SITE LESSONS LEARNED PROGRAM DESCRIPTION

The Site Lessons Learned Program implements a systematic review of the operating experiences at Savannah River Site facilities, similar DOE complex facilities, and commercial nuclear industry facilities for the purpose of applying the lessons learned from those experiences.

The program is defined by WSRC Policy Manual 1-01, MP 4.19, Revision 1, Lessons Learned Program, and is the responsibility of the Facility Safety Evaluation Section (FSES) in ESH&QA. Further clarification for implementation of this program is provided in Management Requirements and Procedures Manual 1B, MRP 4.14, Revision 0, Lessons Learned Program. The program is administered by the Site Lessons Learned Coordinator, who is appointed by the ESH&QA Division Vice President. A staff of technical reviewers assist the Site Coordinator with the screening and dissemination of lessons learned information. Division Lessons Learned Coordinators are appointed by their respective Division Vice Presidents and are matrixed to the Site Coordinator. The Division Coordinators are responsible for implementing and directing their own Division Lessons Learned Program which includes interacting with Division Safety Committees on lessons learned issues. These programs will effectively evaluate issues disseminated by the Site Coordinator and will implement appropriate corrective actions. The Site Coordinator tracks the evaluations and corrective action implementations, and provides oversight of all Division Lessons Learned Programs.

The technical reviewers are appropriately qualified members of the Facility Safety Evaluation Section. FSES obtains and screens for applicability approximately 7000 documents per year which includes sources from the Institute of Nuclear Power Operations, the Nuclear Regulatory Commission, and the Department of Energy complex including Savannah River Site (SRS). Items with potential lessons learned value to SRS facilities are forwarded to the appropriate Division Lessons Learned Coordinators for evaluation of the information and development of appropriate corrective actions.

The Division Lessons Learned Coordinators determine which departments in their divisions may need to take action on the lessons learned documents they receive from the FSES reviewers. They monitor progress of the evaluation, corrective actions, and report the status to the Site Lessons Learned Coordinator. In addition, these coordinators screen their division occurrences for lessons learned that may apply to other divisions and report their results to the Site Coordinator.

The Site Lessons Learned Coordinator administers the program and tracks the progress of required corrective actions from Lessons Learned items. The more significant lessons learned items are discussed by the Site Lessons Learned Committee which is chaired by the Site Coordinator, and whose members are all FSES reviewers and Division Coordinators. From this meeting, decisions are reached on whether the issue should be brought to the attention of the Site Safety Review Committee for possible further action. A hierarchy of lessons learned documents has been established and facilitates the dissemination of lessons learned so as to process the most urgent first and require Division responses only from the more significant items.

The following are the six (6) transmittals FSES utilizes to notify Divisions and Management of Lessons Learned. They are listed in order of highest to lowest priority, with the lowest requiring no action.

Site Lessons Learned Directive

This is the highest level of concern and indicates a generic sitewide problem which must be corrected. It will have specific instructions for corrective actions as well as an identified time table for closure. The Directive comes from the WSRC President's office. The QA Department within ESH&QA will independently verify completion of corrective actions associated with directives. Directives are sent to appropriate Division Vice Presidents for action and Division Coordinators for information only. The Division Vice Presidents or their designee are responsible for reporting the results of their evaluation to FSES. FSES is responsible for tracking Directives through closure.

SRS Lessons Learned Bulletin

The Bulletin is generally used for recurring sitewide events which have not been adequately addressed or for high significance degradations at SRS. Division Coordinators are requested to evaluate and correct recurring or high significance degradations and report the results of the evaluation to FSES. Bulletins are sent to Division Lessons Learned Coordinators for evaluation and WSRC Level 5 and above managers for information. All DOE-SR management, Branch Chiefs and above, are also sent the Bulletins for information only.

Site Lessons Learned Notification

The Notification is used to identify significant issues which may affect one or more Divisions. The Notification is sent to appropriate Division Coordinators for evaluation. The Division Coordinators are required to report the results of their evaluations and corrective action implementation to FSES.

Site Lessons Learned Program Special Information Notice

The Special Information Notice is used to provide helpful information sources for selected activities. This information is sent to Division Coordinators for dissemination. Division Reviewers evaluate the need for corrective actions. Response to FSES is not required.

SRS Lessons Learned Digest

The Digest is used to disseminate SRS lessons learned information which is not considered significant enough to warrant a formal request for evaluation, but does have value as a possible training resource. 'ne Digest is distributed to the Division Coordinators and all WSRC Level 5 and above managers. Division Reviewers evaluate the need for corrective actions. All DOE SR Management, Branch Chiefs and above, are also sent the Digests for information only.

FSES Weekly Newsletter

The Newsletter is used to disseminate commercial industry and DOE complex information relevant to SRS personnel. Its primary purpose is to keep SRS abreast of outside industry and DOE issues and expectations. The newsletter requires no action or response and is distributed to the Division Coordinators and an identified mailing list.

To further encourage the input of lessons learned information to FSES from individual employees, a telephone hotline has been established to capture other lessons learned information which is not available through normal document reviews.

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ATTACHMENT II
SITE LESSONS LEARNED PROGRAM HISTORY

Use of lessons learned information from operating experiences has long been considered a significant contribution in a facility's effort for continuous improvement. At Savannah River Site, two separate lessons learned programs, one for the nuclear reactors and one for the non-reactor nuclear facilities, were developed in 1990. These two programs were merged and strengthened in March 1992, concurrent with the merging of the former Reactor Safety Evaluation (RSES) Section into the Facility Safety Evaluation Section (FSES). In May 1992, Management Policy 4.19 Revision 0, Operating Experience Review, was approved which formalized this process and combined the efforts of the two programs. In June 1992, the former RSES group, which handled Reactor Operating Experience Reviews took responsibility for the newly combined sitewide program. A dedicated staff was assigned the responsibility of reviewing operational experiences from WSRC, other DOE complex facilities, and nuclear industry for potential lessons learned information for all reactor and non-reactor facilities and processes at SRS, with the goal of improving safety and reliability. FSES forwarded applicable lessons learned information items to several lessons learned coordinators in various departments across the site for evaluation and correction of identified problems. The program was effective in getting lessons learned information distributed to departmental coordinators; however, it was determined that useful information from onsite operational experiences was often slow in being disseminated to FSES for evaluation of potential lessons learned. In addition, the lessons learned information disseminated by FSES was not always being evaluated by all applicable divisions; furthermore, no formalized tracking system existed to ensure the necessary accountability in the system.

On February 8, 1993, the WSRC President directed in a letter to his Senior Staff that lessons learned program enhancements were to be implemented to ensure rapid dissemination of lessons learned information at SRS. The directive mandated activities that would improve all aspects of the Site Lessons Learned Program. Division involvement was increased by assignment of twelve Division Lessons Learned Coordinators (DLLCS) by March 1, 1993. The DLLCs are responsible for disseminating the lessons learned information sent to them from the Site Lessons Learned Coordinator to applicable personnel in their division, and for rapidly communicating lessons learned information generated within their division to the Site Lessons Learned Coordinator. Also in March 1993, the Site Lessons Learned Committee was formed. This committee is comprised of all Division Coordinators, FSES lessons learned screeners, and the Site Coordinator. Its purpose is to provide input to the Site Coordinator for issues which may require briefing to the Site Safety Review Committee due to significance. In addition, FSES was reorganized to provide specific oversight of the lessons learned program and to ensure accountability through detailed tracking of the status of items disseminated to the DLLCS.

Briefings on the new Lessons Learned Program changes were given to all existing WSRC Safety Review Committees during March 1993. In May 1993 changes delegated by the February 8 letter from the WSRC President were incorporated and approved in Revision 1 of Management Policy 4.19 now called, Lessons Learned Program. After approval of this policy, a Management Requirements and Procedures MRP 4.14, Revision 0, Lessons Learned Program, was generated which gives more detail on program requirements. This MRP was approved and implemented on August 27, 1993.

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Appendix I-B

Richland Operations Office Lessons Learned Program
Program Description

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Draft DOE Richland Operations Lessons Learned Program

Program Description

Introduction

The Department of Energy (DOE) Lessons Learned Program was developed as a formal program for disseminating lessons learned across DOE. Lessons learned provide valuable information learned from things that went wrong, and information learned from good practices which would pay off if they were widely known. This Program will consolidate other similar programs which already exist at DOE, providing a wide base from which to draw information. All lessons learned will be available to all of DOE from a single source, in a single format.

Each DOE site will operate its own Lessons Learned Program, contributing individual lessons learned to the DOE-wide program.

Objective

The Richland program will coordinate and centralize the collection and dissemination of Lessons Learned at Hanford. Both material developed at Hanford and material from other DOE sites will be available to personnel at Hanford.

Scope

The Program includes all operations at Hanford, Washington, including DOE, its contractors, and its subcontractors. Lessons learned will be collected from all available sources, including DOE, other government agencies, and private industry.

General Description of the Program

Each contractor has a Lessons Learned Program (a contractor could have more than one) which collects, reviews, and categorizes lessons learned. Lessons learned are submitted to a central coordinator at WHC where it is entered into a system on the Internet and made available throughout DOE.

Each Lessons Learned Program has access, through Internet, to all lessons learned from the DOE complex. Material will be distributed throughout each contractor organization according to subject.

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Appendix I-C

Richland Operations Office Lessons Learned Program Program Management Plan

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Draft Lessons Learned Program Management Plan

DOE-RL

Brief Program Description

This Management Plan outlines a plan of action to get the Lessons Learned Program at Hanford started.

At Hanford, each contractor has one or more Lessons Learned Program, each with a program coordinator. Lessons learned will be compiled and reviewed by each program coordinator, then sent to a central coordinator who will enter them into the DOE-wide database on the Internet. A coordinator at RL will monitor the entire process at Hanford.

This Program depends on endorsement by management, both senior contractor management and management of the organization sponsoring the Lessons Learned Program. This program is intended to be integrated into day-to-day work.

Lessons Learned Program Staff and Responsibilities

Each Lessons Learned Program at Hanford will designate a program coordinator who will either serve as point-of-contact or designate a point-of-contact for that Program. Each program coordinator is responsible for assuring that lessons learned are collected, reviewed, categorized, and made available to the DOE Lessons Learned Program in a format compatible with the DOE Standard.

DOE-RL will designate a program coordinator, whose primary responsibility is to monitor and coordinate the Lessons Learned Programs at Hanford. The RL program coordinator may also contribute lessons learned to the DOE-wide Program, operating through the same channels the other program coordinators at Hanford use. The RL program coordinator will establish connections within RL to collect and disseminate lessons learned.

Training

Program coordinators shall be trained, through self-study or other means, so that they are thoroughly familiar with the DOE Lessons Learned Program and can operate competently within the DOE standard for this program.

Implementation Plan

Each contractor will participate in the DOE Lessons Learned Program, either by operating its own program or by participating in another organization's program. Organizations within a contractor may operate separate programs, if necessary.

Each Program must designate a Program Coordinator.

Each Program Coordinator should write a Program Description for that program, or adopt a Program Description from another Program. The Program Description should describe how lessons learned will be used in training, engineering, operations, maintenance, RadCon, and all other aspects of the organization's work.

Each Program Coordinator must write a Management Plan, with enough detail to get the program started and keep it consistent with other DOE Lessons Learned programs.

Each Program Coordinator must develop a system for collecting, writing, reviewing, and categorizing lessons learned. Lessons learned will be submitted to a central Coordinator, who will enter them into the DOE Lessons Learned database on the Internet.

Each Program Coordinator must develop a system for disseminating lessons learned to the appropriate people.

The Program Coordinators, together, will develop promotional material for distribution throughout Hanford. The promotional material will let Hanford personnel know that material is available for their use.

The Program Coordinators and their managers shall develop general employee training material.

Eventually, after the Program is operating, the Program Coordinators shall develop means of assessing the effectiveness of the program.

Appendix II
Project Inputs, Activities and Outputs

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Appendix II
Project Inputs, Activities and Outputs

Lessons learned programs generally include two basic types of processes: a development process that includes identification, documentation, validation, and dissemination of a lesson learned; and an incorporation process that includes identification of applicable lessons learned, distribution to appropriate personnel, and follow-up to ensure that appropriate actions were taken.

This appendix provides an example of a flow chart that depicts the flow of lessons learned information (inputs, activities and outputs) in the Office of Nuclear Safety, Model Lessons Learned Program, dated July 1994. This chart can be used as a guide for developing or evaluating your own lessons learned information flows.

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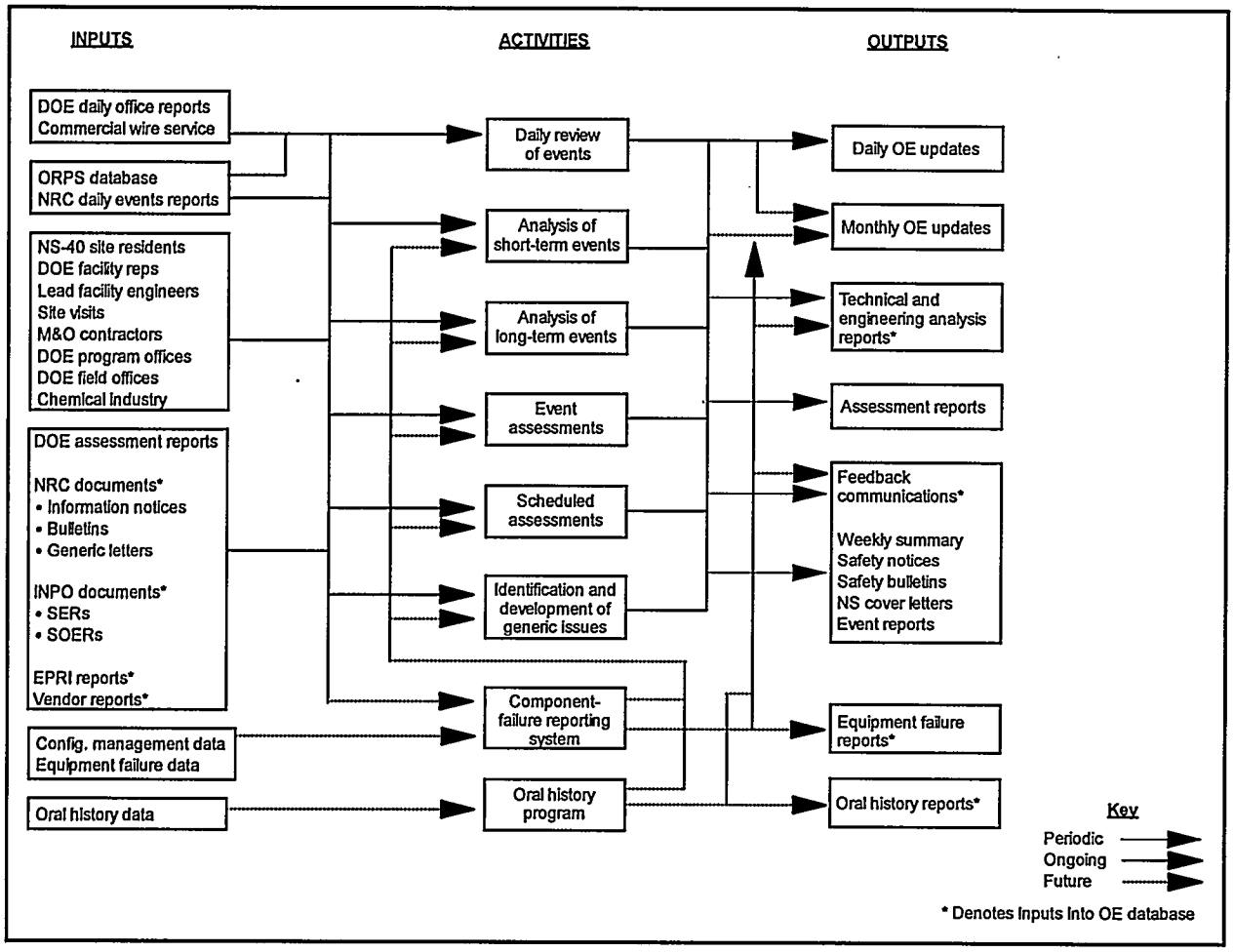
Office of Nuclear Safety, Model Lessons Learned Program Project Activities



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Appendix III
Management Requirements and Procedures

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Appendix III
Management Requirements and Procedures

In order to define how a lessons learned program will be implemented and administered, an organization needs approved requirements and procedures. This appendix provides three examples which may be used as guidance for developing lessons learned requirements and/or procedures.

- Martin Marietta Energy Systems, Inc. Procedure Lesson Learned and Alerts Program, Revision 2, QA-16.3, dated October 10, 1994.
- Westinghouse Savannah River Company, Operations Oversight and Compliance, Administrative Procedure Manual, Procedure No. OOCD-OCI-1.0, Rev. 0, dated January 31, 1995.
- Air Force Directorate of Support Equipment and Lessons Learned Acquisition Logistics Division, Lessons Learned Writing Guide, dated February 15, 1991.

Martin Marietta Energy Systems
Procedure

Lessons Learned and Alerts Program
Revision 2

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MARTIN MARIETTA ENERGY SYSTEMS, INC.
PROCEDURE

LESSONS LEARNED AND ALERTS PROGRAM — QA-16.3
Revision 2 — Page 1 of 15

PURPOSE

This procedure defines the Energy Systems program for identifying and disseminating positive and negative operating experience (Lessons Learned and Alerts), which may be applicable to other organizations.

It also specifies the recommended and mandatory actions to be taken in response to Red, Yellow, and Green Alerts.

APPLIES TO

This procedure applies to all Energy Systems Sites and Central Organizations. This procedure is written to allow for direct implementation across Energy Systems.

OTHER DOCUMENTS NEEDED

- QA-16.1, "Corrective Action Program"
- IO-101, "Records Management"

WHAT TO DO

A. Assignment of Responsibilities

Quality Managers

1. Assign an individual to be the Lessons Learned Program Manager.

Division Managers

2. Assure Lessons Learned and Alerts are validated.
3. Designate individual(s) to coordinate organizational alert responses, as needed.
4. Maintain awareness of operational incidents external to Energy Systems by monitoring bulletins and publications and develop Lessons Learned on experiences potentially applicable to Energy Systems operations.

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B. Originating Lessons Learned and Alerts

NOTE: Refer to Appendix A, "Lessons Learned and Alerts Flow Diagram".

Division Managers

1. Ensure that employees originate Lessons Learned and/or Alerts from the Occurrence Reporting System, the Maintenance Program, the Conduct of Operations Program, the Corrective Action Program, trend analysis activities, the review of external operating experience and other sources.

All Employees

2. Identify and originate Lessons Learned from positive and negative experiences encountered during operations or during review of industry experience which are potentially applicable to Energy Systems organizations.

Originator

3. Initiate a draft on either a hard-copy input sheet or electronic input sheet. See Appendix C, "Lessons Learned and Alerts Input Sheet Instructions".

4. Ensure that the draft contains no classified information.

   IF there is any question as to whether the draft contains classified information, THEN

   a. Consult an Authorized Derivative Classifier (ADC).

   b. Ensure that classified information is removed from the draft.

   c. Record the name of the ADC on the Lessons Learned/Alert Input Sheet.

5. IF the draft Lessons Learned includes reference to a manufacturer, THEN
   follow the guidelines in Appendix D, "Guidelines for Use of A Manufacturer's Name in the Lessons Learned System".

6. Forward the draft Lessons Learned or Alert to a Validator who has technical expertise in the subject matter of the draft.

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B. Originating Lessons Learned and Alerts (cont.)

Validator

7. Ensure that the subject matter of the Lesson/Alert falls within your area of expertise.

   IF NOT, THEN
   consult a qualified Subject Matter Expert to assist in the validation.

8. Validate the draft Lessons Learned to ensure that the experience, example, observation, insight, or generic problem is potentially applicable to other Energy Systems organizations or personnel.

9. Review the draft for technical accuracy and pre-existing Lessons/Alerts on similar experiences.

10. Coordinate any required changes with the originator.

11. IF the Lessons Learned or Alert is valid, THEN
    forward the draft to the Site Lessons Learned Program Manager.

    IF NOT, THEN
    return the draft to the originator with an explanation as to why the Lessons Learned or Alert is NOT valid.

Lessons Learned Program Managers

12. Review the draft Lessons Learned or Alert received from the Validator.

13. IF the draft is an Alert, THEN
    determine or verify the Alert classification (Red, Yellow, Green).

14. Coordinate any required changes with the Originator, the Validator, and/or the ADC.

15. IF the draft is an Alert, THEN
    obtain approval of the draft from the Quality Manager or designee.

16. Forward the draft to the Energy Systems Lessons Learned Program Manager.

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B. Originating Lessons Learned and Alerts (cont.)

Energy Systems Lessons Learned Program Manager

17. IF the draft is an Alert, THEN

    a. Obtain independent validation of the draft as a Red, Yellow, or Green Alert.

    b. Coordinate any required changes with other Lessons Learned Program Manager, ADC, Validator, or Originator.

18. IF the draft is a Lessons Learned, THEN issue the Lessons Learned by entering it into the Energy Systems Lessons Learned Information System.

19. IF the draft is an Alert, THEN process it in accordance with Section C of this procedure.

C. Issuing Red, Yellow, and Green Alerts

Lessons Learned Program Managers

1. Distribute Green Alerts to Energy Systems organizations.

Division Managers

2. Review Green Alerts for applicability to their organization.

3. Incorporate the information in the Alert into applicable programs or processes, as appropriate.

Lessons Learned Program Managers

4. Distribute and direct that the Yellow Alert be reviewed for applicability to organizations.

    a. Indicate in the distribution whether a documented response is required
    AND
    b. Time frame for response.

5. IF the Yellow alert requires a documented response, THEN process in accordance with Section D of this procedure.

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C. Issuing Red, Yellow, and Green Alerts (cont.)

Energy Systems Lessons Learned Program Manager

6. Obtain the approval, for Red Alerts, of the Energy Systems Vice President for Compliance, Evaluation, and Policy.

7. IF the alert is not approved as a Red Alert, THEN
   reevaluate the alert as a Yellow Alert.

8. Enter the Red Alert information into the Energy Systems Action Management System (ESAMS).

9. Distribute the Red Alert specifying the time frame for a response, which is normally 30 days.

10. Enter the Red, Yellow, or Green Alert in the Energy Systems Lessons Learned Information System.

D. Responses to Alerts

Division Managers

1. Ensure review of the Alert for organizational applicability as requested.

2. IF the alert is applicable, THEN
   process corrective actions to be taken, in accordance with the requirements of QA-16.1, "Corrective Action Program".

3. Provide documented response to the Lessons Learned Program Manager indicating whether the Alert is applicable, and any actions to be performed.

Lessons Learned Program Managers

4. Compile the division/program responses into a Site or Organization response.

5. Obtain the Site or Organization Manager's approval.

6. Forward the response to the Red and applicable Yellow alerts to the Energy Systems Vice President for Compliance, Evaluation, and Policy.

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E. Applying Lessons Learned

NOTE: The Energy Systems Lessons Learned System is accessed by selecting it from the Videotex (VTX) Menu on Energy Systems computer networks.

All Employees

1. Conduct word searches of the Lessons Learned Information System to identify applicable Lessons Learned

   - When developing new programs or procedures
   - Proposing new corrective actions
   - Addressing adverse program trends to identify methods previously proven effective in addressing similar situations.

RECORDS

Records shall be maintained in accordance with approved records inventory and disposition schedules as specified in IO-101, "Records Management".

Records supporting Corrective Actions developed in response to Red and Yellow Alerts are maintained in accordance with QA-16.1, "Corrective Action Program".

Lessons Learned Program Managers

1. Maintain records of organizational reviews of Red and Yellow Alerts for applicability.
2. Maintain records of Site or Organizational responses to Red and/or Yellow Alerts.

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APPENDIXES

Appendix A.	Lessons Learned and Alerts Flow Diagram
Appendix B.	Definitions
Appendix C.	Lessons Learned and Alerts Input Sheet Instructions
Appendix D.	Guidelines for Use of A Manufacturer's Name in the Lessons Learned System

Prepared by: Ted Hayes
Ted Hayes
Corrective Action Support Staff

Approved by: M. E. Mitchell
Fred R. Mynatt, Vice President
Compliance, Evaluation, and Policy

Date: 10/10/94

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APPENDIX A
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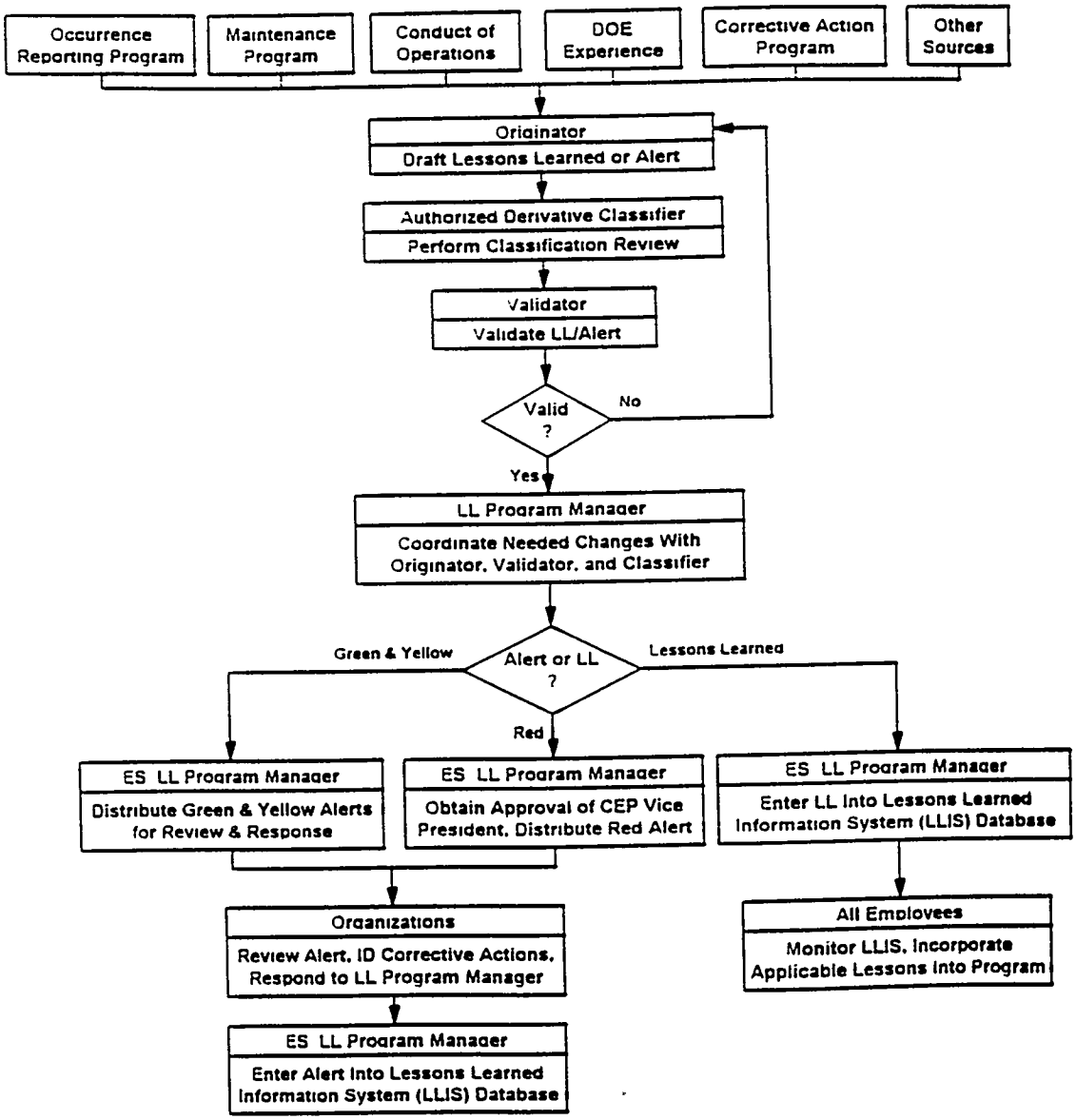
LESSONS LEARNED AND ALERTS FLOW DIAGRAM



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APPENDIX B
Page 1 of 1

DEFINITIONS

Division Manager - Division Manager, Division Director, Program Manager, Organization Manager, i.e., a division-level manager of a program or organization.

Green Alert - information derived from a positive Lessons Learned that has the potential to be the basis of significant improvement in other organizations.

Lessons Learned - an experience, example, observation, or positive insight that constitutes a "good work practice" or defines and identifies the solution to a problem which could be of benefit to other Sites or Energy Systems organizations.

Lessons Learned Program Manager - the administrator for the Lessons Learned and Alerts Program for Energy Systems or for a Site.

Originator - the individual who identifies and documents a proposed Lessons Learned or Alert.

Other Sources - refers to sources of Lessons Learned external to Energy Systems such as the DOE Weekly Operating Experience Summary or trade or industry publications.

Red Alert - information that describes an issue or experience that potentially has major environmental, safety, health, or quality implications and requires a documented review for applicability, and if applicable, a formal corrective action response.

Validator - a qualified subject matter expert assigned responsibility for reviewing draft Lessons Learned and Alerts for technical accuracy, classified information, validity, and potential applicability.

Yellow Alert - information concerning a situation posing sufficient risk to require review and possibly corrective or preventive action by other organizations.

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APPENDIX C
Page 1 of 5

LESSONS LEARNED AND ALERTS INPUT SHEET INSTRUCTIONS

The following instructions explain how to complete the on-line Lessons Learned Input Form. The on- line input form may be accessed by typing "A1FORMS" from any ALL-IN-1 Menu, then typing "LL" and pressing <RETURN>.

1.	TITLE	Enter a brief description of the subject and press <RETURN>. For example, for a lesson regarding a potential leakage problem in forklift fuel pumps, the title might be "Fuel Pump Leakage in Forklifts." This will appear as the Lessons Learned title in VTX and will be automatically inserted on the form.
2.	VALIDATORS MAILNAME	Enter your validator's mailname on the "Edit Message Header" screen and press GOLD F. The Lessons Learned Template will be displayed on your screen.
3.	CATEGORY	Enter the category that best indicates the general subject area of the text of the Lessons Learned. See Appendix D, Section B, for instructions on finding the appropriate category. NOTE: The "Other" category will be evaluated periodically to determine whether any one subject has received sufficient input to justify a new category.
4.	DATE SUBMITTED	This is the date you submit the completed draft to the Validator. The date should take the form mm/dd/yy; ensure that the month designation is two digits, e.g., 05/12/94.
5.	SUBCATEGORY	Subcategories further define the subject area. Enter the subcategory which best aligns with the material contained in the Lesson. If none are appropriate, propose a new subcategory.
6.	DATE VALIDATED	The Lessons Learned Validator receives the draft and first ensures that it falls within his/her area of technical expertise. The validator then reviews the Lesson for technical accuracy and pre-existing lessons in the system containing similar information. Following the Validation review, the Validator completes this field using the format mm/dd/yy.

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APPENDIX C
Page 2 of 5

7.	SITE	The correct entry for this field is one of the following: K-25, Paducah, Portsmouth, X-10, Y-12. Central organizations may put their group's name in this field if the Lesson originated there. The proper format is Centr. (space) _____ (e.g., Centr. Quality).
8.	DIVISION	The name of the division which originated the Lesson Learned.
9.	ORIGINATOR	The name of the person composing the text of the Lesson. The name should be in the following format: [initial].[initial]. (space) [last name]; e.g., J.D. Doe.
10.	VALIDATOR	The name of the authorized Lessons Learned Validator who reviewed the Lesson for the issues specified under item 6 of this appendix. Use the format [initial].[initial]. (space) [last name].
11.	LESSON LEARNED	Enter a one- or two-sentence summary of the content of the Lesson. The summary should state what positive outcome could come from the use of the information contained in the lesson. For example, if the example begun in item 1, of this appendix, is continued, this field might state: "Downtime to forklifts may be minimized with preventive maintenance for possible fuel pump leakage."
12.	PROBLEM/ ISSUE	A brief description of the issue which precipitated the Lesson. Continuing the example above, this section might read as follows: "Forklifts have been failing at an unacceptably high rate for the last three months. Analysis of the failure indicates that the fuel pumps are the cause of the failures. Further investigation reveals pinholes in the fuel gaskets which causes leakage; degrading the performance of the pump and eventually causing complete pump failure."

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APPENDIX C
Page 3 of 5

13.	DISCUSSION	This section contains information on actions taken in the investigation or background information pertinent to the Lesson. For example; "The manufacturer was contacted on 05/12/94 and reported that several other customers have reported similar problems. They have contacted the supplier for the gaskets and have learned that a new formulation of gasket material was tried approximately 18 months ago. The new material apparently degrades at a higher rate than the material previously used. The forklift manufacturer is in the process of identifying the forklifts containing the suspect material and will initiate remedial action when this information is available."
14.	RESOLUTION	A description of what actions were taken to successfully resolve the Issue/Problem as stated in item 11 above. To continue the example; "The fuel pump gaskets have been removed and replaced with improved materials. The material was provided by the manufacturer, and the labor costs to perform the changeout have been billed to the forklift supplier." NOTE: If the Lesson arises from a positive experience, you may elect to place the words "Not Applicable -- This is a Positive Lesson" in this field.
15.	REFERENCES	This field lists any documents used in the investigation or resolution of the problem or issue. If an Occurrence Report was generated regarding the problem, the Energy Systems occurrence report number must be entered in this field.
16.	KEYWORDS	The VTX word search searches every word in each Lesson, not simply the keywords. Keywords are optional and may be used to convey related concepts not explicitly stated in the Lesson.
17.	CONTAINS NO CLASSIFIED DATA	This is an optional field to be used by the Validator. If, during review of the draft Lesson, there is any question about whether classified material is contained in the Lesson, the Validator must obtain a review by an Authorized Derivative Classifier (ADC) to ensure that no classified material is entered in the system. If the ADC is consulted, his/her name must be entered here.

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APPENDIX C
Page 4 of 5

18.	OBSOLESCENCE OF DATA	If the information in the Lesson is subject to obsolescence, this must be noted here. Either the Originator or the Validator completes this section, noting the time interval after which the Lesson should be reviewed for continued validity.

APPENDIX C
Page 5 of 5

OFFICIAL USE ONLY

LESSONS LEARNED TEMPLATE

Title: _____

Category: _____
Subcategory: _____
Site: _____
Originator: _____

Date Submitted: _____
Date Validated: _____
Division: _____
Validator: _____
Program Mgr: _____

Lesson Learned:

Problem/Issue:

Discussion:

Resolution:

References:

Keywords:

Contains NO Classified Data _____
Authorized Derivative Classifier

Should this Lesson Learned be reviewed periodically for obsolescence of data?
Yes _____ No _____
If YES, what should be the review interval? _____

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APPENDIX D
Page 1 of 1

GUIDELINES FOR USE OF A MANUFACTURER'S NAME
IN THE LESSONS LEARNED SYSTEM

PURPOSE: To avoid the possible appearance of slander of goods or commercial disparagement, care must be taken when information about manufactured goods or products is distributed on the lessons leaned system (the "System"). The following guidelines are intended to advise System originators, coordinators and validators about the appropriate use of a manufacturer's name on the System.

USE OF MANUFACTURER'S NAME:

Certain situations may warrant inclusion of a manufacturer's name when:

1. Worker safety an health could be affected;
2. A potential for property damage exists;
3. There is a demonstrated need to track the failure rate or trending of problems associated with a particular type of goods or products; or,
4. The manufacturer's name is essential for utilizing the actual lessons learned.

GUIDELINES:

When it has been determined that a manufacturer's name should be referenced or included in a Lessons Learned, the following guidelines should be followed:

1. State facts only and not opinions.

2. Draw NO CONCLUSIONS from the facts.

3. Describe the circumstances of the failure or shortcoming of the goods or products in the Problem/Issue section.

4. Discuss the extent of the problem in the Discussion section.

5. Notify the manufacturer and relate the problem. If the manufacturer undertakes corrective action (such as issuing replacement parts), include a statement of that fact in the Resolution section. Also, notify the appropriate department personnel about the problem, i.e., quality assurance, procurement or safety and health personnel. If appropriate, include a contact's name and telephone number in the References section.

6. Document discussion with manufacturer.

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Westinghouse Savannah River Site
Operations Oversight and Compliance Department
Administrative Procedure Manual

Site Lessons Learned Program
January 31, 1995

Operations Oversight and Compliance Department Administrative Procedure Manual	**Manual:** **Procedure:** **Effective:** **Page:**	**Q11** **OOCD-OCI-1.0, Rev. 0** **1/31/95** **1 of 23**

SITE LESSONS LEARNED PROGRAM (U)

Approved by:

Manager, OOCD

1.0 PURPOSE

This procedure provides guidelines for systematically reviewing operating experiences of the Westinghouse Savannah River Company (WSRC), the Department of Energy (DOE) complex, and commercial nuclear industry facilities and processes for the purpose of applying lessons learned from those experiences. This procedure also ensures that screened operating experiences that identify areas of concern are tracked for corrective actions with the goal of improving safety and reliability at WSRC.

2.0 SCOPE

The requirements of this procedure apply to the screening, evaluation, and corrective action tracking for the types of information sources identified in Attachment 1 for possible applicability to WSRC facilities in the areas of process safety, personnel safety and health. Process safety not only includes conditions causing degradation of operations, but also those conditions capable of negative impact on the environment and public confidence. The lessons learned from such reviews will be applied to promote the safe, effective operation of WSRC facilities and enhance the safety and health of WSRC employees and the public.

3.0 TERMS/DEFINITIONS

3.1 Acronyms

ASLLC - Assistant Site Lessons Learned Coordinator
DLLC - Division Lessons Learned Coordinator
DOE - United States Department of Energy
ESH&QA - Environment, Safety, Health and Quality Assurance
OCIS - Oversight Compliance Integration Section
GOCO - Government Owned Contractor Operated
INPO - Institute of Nuclear Power Operations

DOES NOT CONTAIN
UNCLASSIFIED CONTROLLED
NUCLEAR INFORMATION

Reviewing Official:_____ Date:_____
(Name and Title)

NRC - Nuclear Regulatory Commission
ORPS - Occurrence Reporting and Processing System
LLG - Lessons Learned Group
SLLC - Site Lessons Learned Coordinator
SRS - Savannah River Site
SSRC - Site Safety Review Committee
WSRC - Westinghouse Savannah River Company

3.2 Definitions

Document Reviewer - For the purpose of this procedure, the individual assigned the responsibility of screening the documents given in Attachment 1 for possible applicability to WSRC facilities.

Lessons Learned - Positive or negative impacts, their resolutions, and implementation for operating experiences that affect process safety, personnel safety and health of WSRC employees and the public.

Offsite - Refers to events or operating experiences that occur outside the WSRC facilities which includes sources from the INPO Nuclear Network, the Nuclear Regulatory Commission, and the DOE complex Unusual and Emergency Occurrences.

Onsite - Refers to events or operating experiences which occur within the WSRC facilities as reported through the DOE Occurrence Reporting Processing System.

Operating Experience - Documented accounts of events or occurrences.

Screening - The process of evaluating the applicability of documents and the probable effect of the event on WSRC facilities.

Site Safety Review Committee - A committee whose membership is comprised of experienced WSRC managers. For the Lessons Learned Program, their responsibility is to ensure appropriate corrective action on significant lessons learned issues is addressed. Significant lessons learned issues are forwarded to the SSRC by the SLLC.

Suspect Part - An item whose characteristic or identity does not appear to be authentic.

4.0 RESPONSIBILITIES

4.1 The Vice President and General Manager of ESH&QA, Westinghouse Savannah River Company is responsible for designating the Site Coordinator for the Lessons Learned Program as required by References 7.1 and 7.6.

4.2 The Division Vice Presidents, Westinghouse Savannah River Company are responsible for designating Division Lessons Learned Coordinators who are matrixed to the Site Lessons Learned Coordinator as required by References 7.1 and 7.6.

4.3 The Manager, Quality Assurance Department of ESH&QA, is responsible for

verifying completion of all Directives for each Division and notification of results to the Site Lessons Learned Coordinator as required by Reference 7.9.

4.4 The Manager, Oversight Compliance Integration Section (OCIS), is responsible for:

4.4.1 Overall implementation of the Site Lessons Learned Program as defined by MP 4.19, "Lessons Learned Program," MRP 4.14, "Lessons Learned Program," (References 7.1 and 7.6) and this procedure

4.4.2 Providing staffing and procedures for the administration of the site level functions of this program

4.4.3 Ensuring OCIS provides guidance to and oversight of WSRC Division Lessons Learned Programs and procedures.

4.5 The Site Lessons Learned Coordinator (SLLC) is responsible for:

4.5.1 Reviewing or assigning for review, the various documents listed in Attachment 1

4.5.2 Assigning preparation of and approving Site Lessons Learned Directives, SRS Lessons Learned Bulletins, Site Lessons Learned Notifications, Site Lessons Learned Program Special Information Notices, SRS Lessons Learned Digest, and the Lessons Learned Newsletter

4.5.3 Concurring on any items deemed potentially applicable, and any recommendations which are generated by the document reviewers during the review process. The SLLC has the final authority for dissemination of lessons learned material

4.5.4 Chairing the Site Lessons Learned Committee

4.5.5 Disseminating transmittal letters generated by this procedure to the appropriate WSRC Divisions

4.5.6 Assuring the overall Lessons Learned Program is conducted effectively per the intent of MP 4.19 and MRP 4.14

4.5.7 Notifying informally the Site Safety Review Committee of potential significant lessons learned items, and requesting them formally to review items determined by the SLLC to be significant and candidates for uniform sitewide corrective actions

4.5.8 Providing direction to and oversight of the Division Lessons Learned Coordinators. The SLLC ensures that the Division Lessons Learned Programs adequately support the Site Lessons Learned Program.

4.6 The Assistant Site Lessons Learned Coordinator (ASLLC) is responsible for:

4.6.1 Serving as administrator for all routine Site Lessons Learned Program activities

4.6.2 Developing and maintaining OCIS's Lessons Learned Program Procedures

4.6.3 Coordinating receipt of the documents listed in Attachment 1 and assigning their distribution for screening

4.6.4 Ensuring proper distribution of lessons learned transmittals per Section 5.5

4.6.5 Tracking the status of lessons learned items transmitted for evaluation to the Division Lessons Learned Coordinators. Ensuring items requiring a response are entered into the "Lessons Learned Open Items Tracking System", and that tracking continues until all identified actions have been completed. (See Attachments 5 and 6 for examples)

4.6.6 Interacting with all Division Lessons Learned Coordinators as appropriate to discuss possible improvements to the efficiency and effectiveness of the lessons learned effort, and to resolve any problems

4.6.7 Serving as a member of the Site Lessons Learned Committee and is the Alternate Chairperson when the SLLC is not in attendance.

4.7 The OCIS Document Reviewers are responsible for:

4.7.1 Screening in a timely manner all assigned onsite and offsite documents for possible applicability to WSRC facilities

4.7.2 Reviewing documents from the oversight activities within OCIS for applicability to WSRC facilities and submitting them into the Lessons Learned Program

4.7.3 Documenting the screening results using the form represented by Attachment 2 when required

4.7.4 Serving as members of the Site Lessons Learned Committee

4.7.5 Preparing appropriate lessons learned transmittals for review by the SLLC

4.7.6 Reviewing the daily log of the Technical Operations Center and notifying the SLLC of events which have potential sitewide significance

4.7.7 Tracking, and maintaining computer databases as directed by the SLLC.

4.8 WSRC Division Lessons Learned Coordinators (DLLCs) are responsible for:

4.8.1 Daily review of their respective Division Occurrence Reports for potential applicability to other WSRC Divisions, and transmitting lessons learned to the ASLLC for final determination and possible dissemination.

4.8.2 Serving as members of the Site Lessons Learned Committee

4.8.3 Serving as designated points of contact for their Division for lessons learned information formally transmitted for evaluation by the SLLC

4.8.4 Determining which departments in their Divisions need to evaluate and respond to transmittals from the SLLC

4.8.5 Tracking Division responses to transmittals from the SLLC

4.8.6 Reporting to the SLLC on a matrix basis

4.8.7 Submitting periodic reports to the SLLC on the status of lessons learned items in their Division

4.8.8 Serving as members of the Division Independent Safety Review Committees

4.8.9 Serving as liaison between the Site Lessons Learned Program and the Facility Operations Safety Committees as required by References 7.1 and 7.6.

4.9 The Site Lessons Learned Committee is responsible for:

4.9.1 Identifying unfavorable SRS trends in the areas of operational safety, personnel safety and health

4.9.2 Identifying significant lessons learned issues and notifying the SLLC for possible dissemination to the Site Safety Review Committee for their review and possible further corrective action as required by References 7.1 and 7.6.

4.10 The Site Safety Review Committee (SSRC) is responsible for:

4.10.1 Reviewing significant lessons learned items sent to them by the SLLC

4.10.2 Reporting the results of their reviews to the SLLC so that any additional corrective actions can be tracked. Significant lessons learned items are submitted to the SSRC utilizing the form shown in Attachment 3

4.10.3 Keeping WSRC senior management (Division Managers and above) informed on sitewide issues which are considered significant and are generated from this program

4.10.4 Periodically reviewing the performance and effectiveness of the Site Lessons Learned Program as required by References 7.1 and 7.6.

4.11 The Systems Engineering Suspect Parts Program Manager is responsible for:

4.11.1 Evaluating suspect/counterfeit items transmitted by the SLLC for site applicability, and recommending actions for appropriate items

4.11.2 Reporting the results of the evaluation to the SLLC as required by Reference 7.10.

4.12 The Lessons Learned Group (LLG) Secretary is responsible for:

4.12.1 Maintaining a computer log of all documents screened per Attachment 2

4.12.2 Maintaining a file of all material screened and the documented results of the screening.

5.0 PROCEDURE

5.1 Overview of the Site Lessons Learned Program

The Site Lessons Learned Program implements a systematic review of the operating experiences at Savannah River Site facilities, similar DOE complex facilities, and commercial nuclear industry facilities for the purpose of applying the lessons learned from those experiences. The program has also been referred to as the Operating Experience Review Program in the past.

The program is defined by WSRC Management Policies, Manual 1-01, MP 4.19, Lessons Learned Program, and WSRC Management Requirements and Procedures, Manual 1B, MRP 4.14, Lessons Learned Program, and is the responsibility of the Oversight Compliance Integration Section (OCIS) in ESH&QA. The program is administered by the Site Lessons Learned Coordinator. A staff of technical reviewers assist the Site Coordinator with the screening and dissemination of lessons learned information. Lessons Learned Coordinators from each Division, matrixed to the Site Coordinator, have the responsibility for implementing and directing their own Division Lessons Learned Program. These programs will effectively evaluate issues disseminated by the Site Coordinator and will implement appropriate corrective actions. The Site Coordinator tracks the evaluations and corrective action implementations, and provides oversight of all Division Lessons Learned Programs.

The OCIS technical reviewers, who report to the Site Lessons Learned Coordinator, are appropriately trained. OCIS obtains and screens for applicability approximately 7000 documents per year which includes sources from the Institute of Nuclear Power Operations, the Nuclear Regulatory Commission, and the Department of Energy complex. Items with potential lessons learned value to SRS facilities are forwarded to the appropriate Division Lessons Learned Coordinators for evaluation or information, based on screening criteria.

The Division Lessons Learned Coordinators, appointed by the Division Vice Presidents, determine which departments in their divisions may need to take action on the lessons learned documents they receive from the OCIS. They monitor progress of the evaluation, corrective actions, and report the status to the Site Lessons Learned Coordinator. In addition, these coordinators screen their division occurrences for lessons learned that may apply to other WSRC Divisions and report their results to OCIS. WSRC Divisions participating in the Site Lessons Learned Program are shown in Attachment 4.

The Site Lessons Learned Coordinator administers the program and tracks the progress of required lessons learned item evaluations and corrective actions. The more significant lessons learned items are discussed by the Site Lessons Learned Committee, whose members are all OCIS reviewers and Division coordinators, and decisions are reached on whether the issue should be brought to the attention of the Site Safety Review Committee. A hierarchy of lessons learned documents has been established to help identify the relative significance of the items and assist in the

development of appropriate corrective actions. Figure 1 presents an overview of information received and disseminated by OCIS.

5.2 Acquisition of Offsite and Onsite Information

5.2.1 The ASLLC shall be the point of contact for acquiring sources of information of the types listed on Attachment 1, as well as items submitted by the Division Lessons Learned Coordinator.

5.2.2 The ASLLC will ensure the assignment of the information to appropriate OCIS Document Reviewers for applicability assessment.

5.3 Screening for Applicability

5.3.1 The OCIS Document Reviewer determines the document applicability to WSRC facilities using the guidelines in Attachment 2.

5.3.2 Results of the review are documented on Attachment 2, for required items, and ultimately returned to the LLG secretary by the ASLLC for logging and filing.

5.3.3 If the document is determined to either be applicable, but no corrective actions required, or not applicable to WSRC facilities, then the results are recorded as per Attachment 1 guidelines for documentation and forwarded to the ASLLC for filing.

5.3.4 If the document meets the screening criteria for suspect parts as provided in Attachment 2, then, the OCIS Document Reviewer will inform the SLLC. The SLLC will transmit the item to the Systems Engineering Suspect Parts Program Manager for evaluation. The results of this evaluation along with any recommendations will be sent to the SLLC. If dissemination is required, then the appropriate transmittal in Section 5.5 will be utilized.

5.3.5 If the document is determined to be applicable or potentially applicable to WSRC facilities and has potential for corrective actions, Attachment 2 is completed and sent to the SLLC, and the actions of Section 5.4 are taken if the SLLC agrees with the applicability determination. The SLLC has the final authority for dissemination of lessons learned material.

5.3.6 If the OCIS Document Reviewer believes that immediate attention is required, the SLLC shall be notified immediately. The SLLC will determine the appropriate method of transmitting the information, which could include telephone calls or person to person visitation.

5.4 Dissemination to WSRC Divisions and Management

5.4.1 If the SLLC concurs that a lessons learned item may require a uniform sitewide corrective action and has sufficient significance, the SLLC discusses the issue with the Site Safety Review Committee chairperson to determine if a Directive should be issued by the WSRC President (Section 5.5.1). If the chairperson concurs, the SLLC prepares form OSR 25-143, Staff Summary

Sheet, in preparation for formal review by ESH&QA, SSRC, and the WSRC President after proper Division and SSRC approvals are obtained. The SSRC chairperson arranges for discussion of the issue with the WSRC President. Upon approval, the SLLC issues the Directive and begins tracking. After the item is closed out by all Divisions, the SLLC notifies the Manager of Quality Assurance to begin an independent verification that all Divisions have completed the required actions.

5.4.2 If the SLLC concurs that a lessons learned item has potential applicability and sufficient significance for any of the WSRC facilities, then the SLLC provides a letter, utilizing the transmittal hierarchy of Sections 5.5.1-3, requesting the appropriate Division to:

5.4.2.1 perform an applicability evaluation of the item for all Departments within the Division and,

5.4.2.2 determine any needed corrective actions and,

5.4.2.3 report the results of the evaluation to the SLLC per section 5.5.

Normally these items are sent to all WSRC Division Coordinators, but response is only required by those Divisions designated by the SLLC.

5.4.3 Information potentially applicable or otherwise useful but deemed not to require formal evaluation, may be disseminated per the transmittals in Sections 5.5.4-6.

5.4.4 Any screened information deemed to require immediate attention or notification, shall be transmitted by the SLLC using the fastest means available and the Site Safety Review Committee will also be notified. It is the SSRCs responsibility to keep senior management (Division Managers and above) informed of the status of appropriate significant sitewide issues.

5.4.5 For items evaluated to have a potential need for sitewide corrective actions and sufficient significance, the SLLC will complete Attachment 3 (OCIS portion) and transmit it to the SSRC chairperson. The chairperson will perform the SSRC review, initiate appropriate corrective actions, complete the form, and transmit the results back to the SLLC documenting closure of the item.

5.4.6 The SLLC will notify the SSRC informally (e.g. phone call, All-In-One) of lessons learned items detected by the program which may develop into major issues. The SSRC may then initiate its own investigation and inform senior management.

5.4.7 Section 5.5 details the transmittal process utilized for disseminating information.

5.5 Lessons Learned Transmittals

The following are the six transmittals utilized to notify Divisions and Senior

Management of lessons learned. They are listed in order of highest to lowest significance. Items transmitted via 5.5.1 - 5.5.3 require a formal response to the SLLC.

5.5.1 Site Lessons Learned Directive - The highest level of concern which indicates a generic sitewide problem which must be corrected. It will have specific instructions for corrective actions as well as an identified time table for closure. The Directive, signed by the WSRC President, is addressed to Division Vice Presidents for action. The Division Vice Presidents or their designees are responsible for reporting the results of their evaluation to the Site Lessons Learned Coordinator. The Site Lessons Learned Coordinator is responsible for tracking directives until closure. Before a Directive can be considered completed, closure must be independently verified by the Quality Assurance Department and results reported to the SLLC in writing.

5.5.2 SRS Lessons Learned Bulletin - The Bulletin is generally used for recurring sitewide events which have not been adequately addressed or high significance degradations at SRS. Division Coordinators are requested to evaluate and initiate appropriate corrective actions and report the results to the SLLC. Bulletins are sent to Division Lessons Learned Coordinators for evaluation and WSRC Level 5 and above managers for information. Bulletins are also sent to all DOE-SR Managers and Directors for information.

5.5.3 Site Lessons Learned Notification - The Notification is used to identify significant issues which may affect one or more Divisions. The Notification is sent to Division Coordinators for evaluation and implementation of appropriate corrective actions. The Division Coordinators are required to report the results of the evaluation and corrective actions to OCIS.

5.5.4 Site Lessons Learned Program Special Information Notice - The Special Information Notice is used to disseminate informational sources for selected activities which may not require corrective action, but represent particularly useful training resources. This information is sent to Division Coordinators for further dissemination. Division reviewers evaluate the need for corrective actions.

5.5.5 SRS Lessons Learned Digest - The Digest is used to disseminate lessons learned information (SRS experience only) from documents or occurrences which are not considered significant enough to warrant a formal request for evaluation, but do have value as a possible training resource. The Digest is distributed to the Division Coordinators and all WSRC Level 5 and above managers. Division reviewers evaluate the need for corrective actions. The Digest is also sent to all DOE-SR Managers and Directors for information.

5.5.6 Lessons Learned Newsletter - The Newsletter is used to disseminate DOE complex and commercial nuclear industry information relevant to SRS personnel. Its primary purpose is to keep SRS abreast of industry and DOE complex issues and expectations. The newsletter does not require a response and is distributed to the Division Coordinators and an identified mailing list.

5.6 Dissemination to DOE-HQ

All transmittals (excluding the Lessons Learned Newsletter) issued by the Site Lessons Learned Program are disseminated to the Defense Program Lessons Learned Coordinator and the EH Lessons Learned Coordinator at DOE-HQ. All transmittals are sent through the required MRP 3.25 review (using OSR Form 14-357) before sending the items offsite.

5.7 Tracking

All Directives, Bulletins, and Notifications are tracked by the Site Lessons Learned Program. A computer database is utilized to track the status of these transmittals for all divisions. Information tracked includes personnel evaluating the item, results of the evaluation, corrective actions developed, and completion dates for corrective actions.

Division Coordinators must initially respond to the SLLC within thirty days of the issuance of the transmittal. Normally, because of the brevity of time, this initial response will not close the issue. Therefore, once each quarter (10th of January, April, July, and October) the Division Coordinator provides to the SLLC a comprehensive report of all transmittal items which have not been previously closed out. This tracking system enhances the effectiveness of the Lessons Learned Program through increased accountability in the site and division/department level activities. Each thirty day report and quarterly report submitted by the DLLCs will be reviewed for:

5.7.1 Determination of applicability to all of the division/department contacts,

5.7.2 Adequate justification for non applicability for any division/department contacts,

5.7.3 Adequate corrective actions including expected completion dates, and

5.7.4 Adequate justification for no corrective actions being necessary.

Tracking will begin with the transmission of the item to the selected Division Lessons Learned Coordinators. The system will be used to alert the Site Coordinator when 30-Day Reports are delinquent. All corrective actions reported by the Division Coordinators will be tracked through completion of the action. Completion will be reported in writing by the Division Coordinator in the Quarterly Report following completion of the corrective action. An item will be considered open at the site level until all Division Coordinators have reported it as being complete.

The tracking system will be used to develop statistics for the Semi-Annual Lessons Learned Reports. Attachments 5 and 6 show examples of the statistics that will be maintained through the tracking system.

5.8 Review of Other Documents

On occasion, items may be sent to OCIS for lessons learned evaluation (not part of Attachment 1) which may have potential applicability to WSRC facilities. These will

be screened and distributed to WSRC Divisions on a case-by-case basis at the discretion of the SLLC.

5.9 Lessons Learned Personnel Qualifications

OCIS Document Reviewers and Checkers shall have a bachelors degree in the physical sciences or engineering with a minimum of 5 years nuclear industry experience and shall be trained in the use of this procedure. Reference 7.7 lists training requirements that must also be met for Document Reviewers and Checkers.

5.10 Site Lessons Learned Committee

Meetings are held periodically between the SLLC, DLLC, and the OCIS Document Reviewers to discuss the status of transmittals in Section 5.5.1 through 5.5.3 which helps the SLLC determine if any of these issues need to be reviewed by the SSRC. This meeting is designated as the Site Lessons Learned Committee Meeting. DLLCs also discuss any problems they are having and actions are formulated to resolve these problems.

OCIS develops and mails the meeting agenda, chairs the meeting, and issues meeting minutes upon approval by the SLLC.

5.11 Site Safety Review Committee

The SLLC attends the SSRC meetings, presents lessons learned issues to the committee for further review, and provides a periodic status of the Lessons Learned Program. Lessons learned items may be informally sent to the SSRC chairperson by the SLLC; however, items determined to require SSRC review are sent by the SLLC to the SSRC chairperson utilizing Attachment 3. The SSRC chairperson is responsible for evaluating items for sitewide applicability and need for corrective action. The chairperson completes the Attachment 3 form with the evaluation results and transmits it to the SLLC for final closure. If further action becomes necessary, then the SLLC works with the SSRC chairperson to complete the action. Additionally, Directives must be approved by the SSRC prior to submittal to the WSRC President.

5.12 Employee Input

A telephone hotline, H-LINE, (644-5463) has been established and publicized to encourage all SRS employees to submit lessons learned items to OCIS for their review and possible dissemination. There are valuable lessons learned which have not been documented and it is the intent of this hotline to tap this resource.

5.13 OCIS Oversight

OCIS will periodically monitor the Site Lessons Learned Program by reviewing Division procedures, evaluations, corrective action development and implementation, etc., for the purpose of improving program effectiveness and consistency. Results of the oversight effort will be documented in special reports or the Semi-Annual Lessons Learned Reports.

5.14 Effectiveness Reviews

Independent effectiveness reviews of the Lessons Learned Program are required to help ensure adequate implementation. The independent review of this program will be done triennially by WSRC organization chosen by the WSRC President. The review of the WSRC Division Lessons Learned Programs will be done as a part of the Annual Self Assessment Program.

6.0 RECORDS RETENTION

6.1 The Lessons Learned Package shall consist of the reviewed document, completed Attachment 2 (if required) and any other pertinent information used in the disposition of an item. A copy of the completed Attachment 2 form along with the document reviewed and transmittals are retained in OCIS files for two years.

6.2 A computer database composed of logs, similar to the Attachment 2 form, summarizing each Lessons Learned document review is maintained by the LLG secretary.

6.3 The original Attachment 2 form shall be retained by Site Central Files for the life of the plant.

7.0 REFERENCES

7.1 WSRC Management Policies Manual, WSRC-1-01, MP 4.19, "Lessons Learned Program"

7.2 DOE 5480.19, "Conduct of Operations Requirements for DOE Facilities"

7.3 DOE 5000.3B, "Occurrence Reporting and Processing System"

7.4 WSRC 1Q, "WSRC Quality Assurance Manual"

7.5 WSRC Management Requirements and Procedure, Manual 1B, MRP 4.09, "Savannah River Site Issue Management"

7.6 WSRC Management Requirements and Procedure, Manual 1B, MRP 4.14, "Lessons Learned Program"

7.7 Letter ESH-FSE-930573, Dated 6/16/93, "SRTC/AL-TSA-92 Action Closure, SA-9"

7.8 WSRC Management Requirements and Procedure, Manual 1B, MRP 3.25, "Release and Management of Scientific and Technical Information"

7.9 Letter from A. L. Schwallie to R. T. Begley, ET AL, WSR-93-0022, Dated 2/8/93, "Site Lessons Learned Program"

7.10 WSRC Engineering and Engineered Services Procedure, Manual 1E, "Suspect Parts Identification Program (SPIP)"

8.0 ATTACHMENTS

8.1 Attachment 1 - Types of Information to be Screened.
8.2 Attachment 2 - OCIS Lessons Learned Screening Form.
8.3 Attachment 3 - Potential Lessons Learned to be Reviewed by Site Safety Review Committee Screening Form
8.4 Attachment 4 - Divisions Participating in the Lessons Learned Program
8.5 Attachment 5 - Sample Tracking Chart Site Lessons Learned Corrective Actions
8.6 Attachment 6 - Sample Tracking Chart Site Lessons Learned Program Statistics

TABLES

8.7 Figure 1 - Flowchart of Transmittals from the Sitewide Lessons Learned Program

ATTACHMENT 1

TYPES OF INFORMATION TO BE REVIEWED

SOURCE	RESPONSIBLE GROUP	TITLE	SCREENING FORM USED
DOE	LLG	Emergency and Unusual Occurrence Reports (all DOE facilities)	Note 1
SRS	Div. Coord.	All WSRC Occurrence Reports (Off-Normal, Unusual, and Emergency)	Note 2
NRC	LLG	Bulletins	Att 2
	LLG	Information Notices	Att 2
	LLG	* Selected NUREGs	Att 2
	LLG	* Regulatory Guide changes and additions	Att 2
	LLG	Generic Letters	Att 2
	LLG	* SECY Letters	Att 2
	LLG	* Policy Statements	Att 2
INPO	LLG	Nuclear Network Information Items	Note 1
	LLG	Significant Operating Experience Reports	Att 2
	LLG	Significant Event Reports	Att 2
	LLG	Significant.by Others	Att 2
OTHER	LLG	* Vendor Bulletins	Att 2
	LLG	* Chemical Engineering	Att 2
	LLG	* Chemical and Engineering News	Att 2
	LLG	* Process Safety Progress	Att 2

* Only items that are potentially applicable to WSRC facilities are screened as determined by the Document Reviewers from title/synopsis screening. Those items determined to be not applicable are not entered into the Lessons Learned Program.

Note 1: These documents do not require a second check and will use Attachment 2 form only for potentially applicable items. Not Applicable items will be entered into the computer database.

Note 2: Each Division is responsible for maintaining and filing their screening of WSRC occurrence reports. Only reports transmitted by OCIS will have a completed Attachment 2 form.

ATTACHMENT 2

OCIS OPERATING EXPERIENCE REVIEW SCREENING AND DATA COLLECTIONS FORM

Occurrence Report Number: Part 1: Report Number; Part 2: Sequence Number; Impacts Number

Document Title: Title of Document

Brief Description: Description of Document including a justification for applicability or nonapplicability

Date Discovered: ; Time Discovered: ; Occurrence Category: Type (Unusual, NRC, INPO)

If "Other", give description: Keywords are entered here

	Actual Level	Potential Level
Safety Significance:		
Non-Safety Significance:		

Type Violation: List number of violations. If none, mark None box.

TS	OSR	None

Other violation description:

Report Type	Screened by:	Report Date	Date Received	Date Screened	Date Logged	Action	Disposition	
Initial	Name	11/24/93	11/24/93	11/24/93	11/24/93	x	y Y	z N
10-Day							Y	N
Interim							Y	N
Final							Y	N

Letter to: Fill in if Letter is Generated; Letter to:

Letter Number: FSES Letter Number; Letter Number:

Letter Date: 11/24/93; Letter Date:

Comments: Transmittal Used ie Directive, Bulletin, Notification etc. If the item is applicable, "x", and requires action check this box. If the item is applicable, "y", check this box. If the item is not applicable, "z", input the cause code number 1 thru 6 here.

Is a Root Cause Report Necessary? Yes No

Was the Root Cause Analysis Acceptable? Yes No

Was a Contact Made? Yes No

Note. If the OR is an Emergency or Unusual, or has potential or actual significance of A-E, a root cause report is necessary.

Comments.

Instructions for completing Attachment 2

The following guidelines will be used to help the document reviewer to determine whether any of the information contained in the document being screened is applicable to WSRC facilities:

- Do WSRC facilities utilize the same equipment (safety, production, monitoring, etc.) described in the document being screened?
- Do WSRC facilities employ the same designs described in the document being screened?
- Do WSRC facilities utilize a similar administrative or management control system described in the document being screened?
- Do WSRC facilities use, store, or produce the same or similar chemicals/products described in the document being screened?
- Are the same activities or operations described in the document being screened present at any of the WSRC facilities?
- Do WSRC facilities follow the same regulations/codes/standards described in the document being screened?
- Is there the opportunity for a similar problem or situation to exist within any of the WSRC facilities?

The following codes will be used for all items determined to be "not applicable" to WSRC Facilities:

1. NRC regulatory issue applicable only to licensees.
2. No SRS facility safety potential.
3. Systems, conditions and/or processes not applicable to SRS facilities.
4. Failure of site specific administrative controls or systems.
5. Occurrence unique to a specific facility.
6. No lesson to be learned from this event.

The following guidelines will be used to help the document reviewer to determine whether any of the information contained in the document being screened is a suspect part:

- Failure by the supplier to identify a refurbished or remanufactured part as such
- Counterfeiting or imitation of a part with the intent to deceive

Instructions for completing Attachment 2 (cont'd)

- Manufacturing defects that can lead to malfunctions of a part in an application for which it was designed or specified
- When material substitution is made and not so documented.

ATTACHMENT 3

POTENTIAL LESSONS LEARNED TO BE REVIEWED BY SSRC

(Completed by OCIS)

Item Number: _____

Title/Issue: _____

_____
_____
_____
_____
_____
_____
_____
_____

Recommended to SSRC:

Date: _____ **Priority:** _____

Requested Action by SSRC: _____

(Completed by SSRC Secretary)

SSRC Response: _____

_____
_____
_____
_____
_____

Meeting Date: _____

Committee Directed Action: _____

Discussion/Follow up Actions: _____

Closure:

Date Closed/Memo: _____

Instructions for completing Attachment 3

OCIS SECTION:

Item Number -- A sequential number starting with the year (i.e. 93-1)

Title -- Title of the potential issue

Date -- Date sent to the SSRC chairperson

Priority -- Defines whether an item can be deferred until the next meeting or action is required sooner

Requested Action -- Defines the reason the committee is reviewing the item (i.e. review for possible directive/bulletin, general review, etc.)

SSRC SECTION:

Meeting Date -- Date the issue was initially discussed

Directed Action -- Defines what committee action is consistent with the Lessons Learned Program (i.e., will be issued in a directive, bulletin, notification, or other means).

Discussion/Follow-up Actions -- For those issues that cannot be resolved in one meeting, this will provide a space to define how they will be resolved.

CLOSURE:

Date Closed/Memo -- The date and letter number which closes the issue.

ATTACHMENT 4

DIVISIONS PARTICIPATING IN THE LESSONS LEARNED PROGRAM

1. Administration and Logistics Division
2. Chief Financial Officer Division
3. Economic Development Division
4. Engineering and Construction Services Division
5. Environment, Safety, Health and Quality Assurance
6. High Level Waste Division
7. Human Resources Division
8. Internal Oversight Division
9. Nuclear Materials Processing Division
10. Operations Training and Assessment Division
11. Reactor Restart Division
12. Safeguards Security and Emergency Services
13. Savannah River Technology Center
14. Site Services Division
15. Solid Waste and Environmental Restoration

ATTACHMENT 5

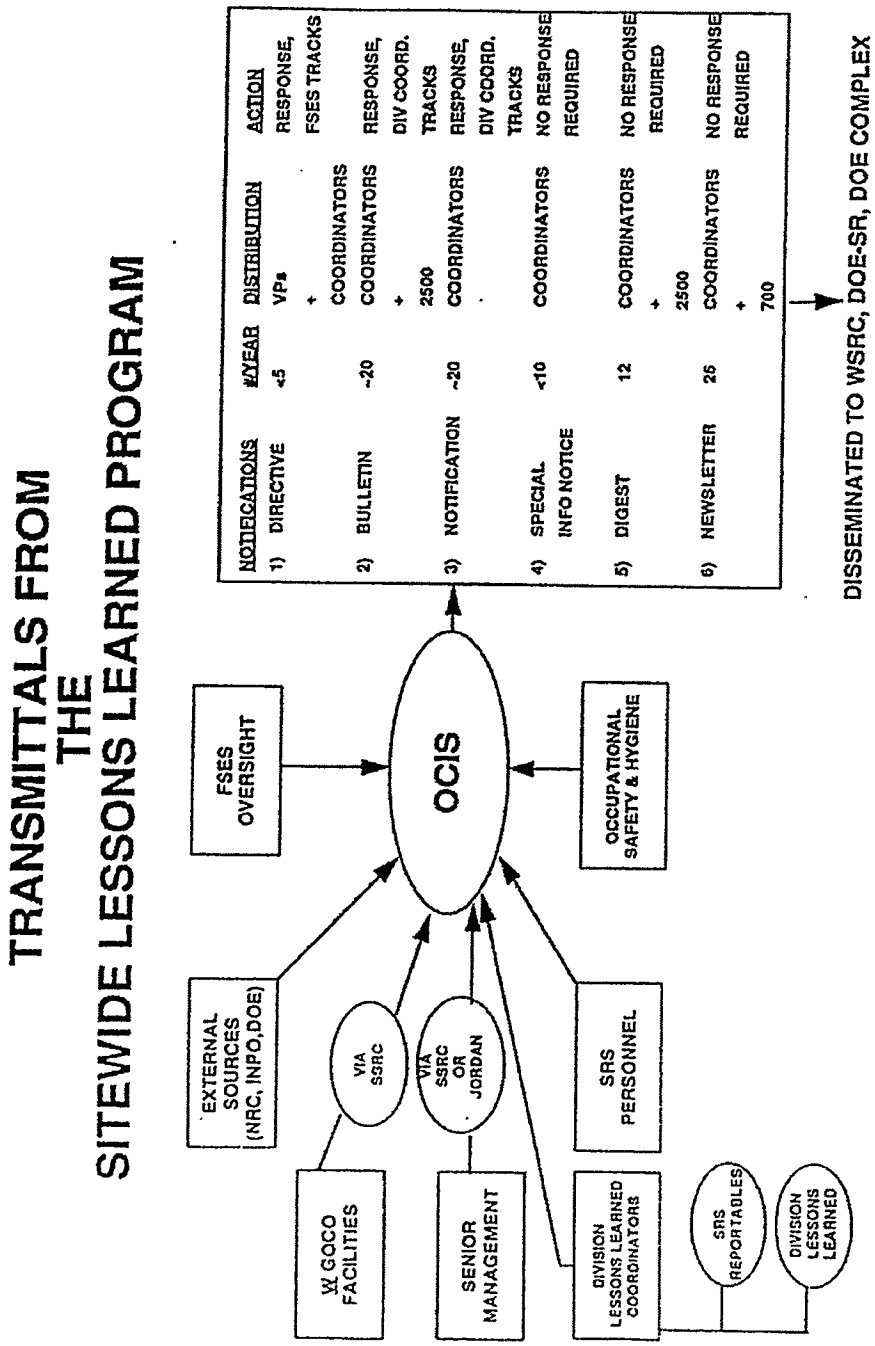
ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-05-1	Heat Tracing Tape Misapplication	SSD	Required Reading (CSWE)	COMPLETE
		RD	A walkdown will be performed to see if condition exists. (FS)	7/31/94
N-94-05-2	Beta Smear Counter Calibration	SSD	Inspected Planchets, no breaches found (ANALAB)	COMPLETE
N-94-06-1	Hyster Lift Truck Retrofit Kit	HLW	Two Hyster Lift Trucks Identified, retrofit kits on order	2/28/95
		SRTC	One Hyster Lift Truck identified, retrofit kit on order (TNX)	2/28/95
		EPD	Searched equipment, no such trucks found (Construction)	COMPLETE
N-94-08-4	Sealed Tank Voltage Regulators	ADMIN	Searched database, none found, none issued	COMPLETE
		HLW	Search indicated that none exist in HLW	COMPLETE
		RD	Search indicated that none exist in RD	COMPLETE
N-94-08-5	Square-D Instrument potential transforme	ADMIN	Searched performed, one found, in good shape	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-08-6	Powell Flanged Gate Valves	NMPD	Searched of databases and spare parts, 2 found and removed	COMPLETE
		SWER	Determine if any of the Powell valves are made in China (SW)	8/29/94
		ADMIN	Search found 298 valves, walkdown showed none from China	COMPLETE
		HLW	Perform MEL search	9/1/94
B-94-4	Degraded System Support Poles	ADMIN	Inspected inventory of support poles by CSWE (Stores)	COMPLETE
		HLW	H-Area completed pole inspection, results forwarded to Power Dept.	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SWER	Poles to be inspected (SW)	9/30/94
		RD	Develop PM inspection schedule to inspect poles	9/30/94
		SRTC	SRTC walkdown complete, defective poles located	COMPLETE
B-94-5	Followup on Acid Line Failure	SRTC	Identified system pipes, to establish NDE inspection (TNX)	8/10/94
B-94-6	Incorrect Breathing Air Piping	RD	Perform walkdown and repair as necessary (FS)	8/5/94
		SRTC	Completed review and walkdown of Breathing Air System (773)	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		NMPD	Walkdown BA system and verify Verification Records (Sep)	9/16/94
		NMPD	Walkdown HP bottle stations and verify Verification Records (Trit)	9/20/94
D-94-1	Polycarbonate Bowls	ADMIN	Removed 63 bowls from stores	COMPLETE
		HLW	Replaced 26 bowls with metal bowls	COMPLETE
		EPD	Removed 11 bowls from service, replaced 34 bowls with metal bowls	COMPLETE
		SWER	Replaced 2 bowls with metal bowls	COMPLETE
		NMPD	Removed 1 bowl from service, replace 112 bowls with metal bowls	8/15/94
		SSD	Replace 178 bowls with metal bowls	COMPLETE
		SSES	Completely enclose 2 bowls	9/1/94
		RD	Removed 204 bowls from service, replace 103 bowls with metal bowls	9/15/94
		SRTC	Removed 11 bowls from service, replace 102 bowls with metal bowls	10/18/95

ATTACHMENT 6

DIVISION	NMPD	SW&ER
# of Items Transmitted to the DLLC	45	43
Items not responded to by end of quarter	0	0
Items under going evaluation by Division Contacts	20	9
Items Closed	25 (56%)	34 (79%)
Items Determined Not Applicable by the DLLC	8	0
Items Closed by Division Contacts	17	34
# of Items Transmitted to Division Contacts by end of the quarter	37	43
Items with No Corrective Actions determined by end of the quarter	21	32
Items with Corrective Actions determined by end of the quarter	16	11
Items with Corrective Actions closed	12	9
Items with Corrective Actions overdue	0	0

DIVISION COORDINATOR	NMPD	SW&ER
Required Reports Submitted on Division Daily Occurrences, %	98%	93%
Number of 30 Day Reports required	45	43
Number of 30 Day Reports submitted	45	43
Number of 30 Day Reports submitted more than 10 days late	0	0
Average 30-Day Report response time, days	30	31
Quarterly Reports submitted (2)	1st YES 2nd YES	1st YES 2nd YES
Quarterly Reports (2) submitted on time, (< 10 days late)	1st YES 2nd YES	1st YES 2nd YES
Site Lessons Learned Committee Meeting Attendance, %	100%	83%

FIGURE 1


TRANSMITTALS FROM THE SITEWIDE LESSONS LEARNED PROGRAM
EXTERNAL SOURCES (NRC, INPO,DOE)
FSES OVERSIGHT
W GOCO FACILITIES
VIA SSRC
SENIOR MANAGEMENT
VIA SSRC OR JORDAN
OCIS
DIVISION LESSONS LEARNED COORDINATORS
SRS PERSONNEL
OCCUPATIONAL SAFETY & HYGIENE
SRS REPORTABLES
DIVISION LESSONS LEARNED
NOTIFICATIONS
#/YEAR
DISTRIBUTION
ACTION
1) DIRECTIVE <5 VPs + COORDINATORS RESPONSE, FSES TRACKS
2) BULLETIN ~20 COORDINATORS + 2500 RESPONSE, DIV COORD. TRACKS
3) NOTIFICATION ~20 COORDINATORS RESPONSE, DIV COORD. TRACKS
4) SPECIAL INFO NOTICE <10 COORDINATORS NO RESPONSE REQUIRED
5) DIGEST 12 COORDINATORS + 2500 NO RESPONSE REQUIRED
6) NEWSLETTER 26 COORDINATORS + 700 NO RESPONSE REQUIRED
DISSEMINATED TO WSRC, DOE-SR, DOE COMPLEX

Air Force Lesson Learned Program

Lessons Learned Writing Guide
February 15, 1991

THE
AIR FORCE
LESSONS LEARNED PROGRAM

"FINGERTIP ACCESSIBILITY TO EXPERIENCE"

Published By The
Directorate of Support Equipment
and Lessons Learned
Acquisition Logistics Division (ALD)

15 FEBRUARY 1991

LESSONS LEARNED WRITING GUIDE

ADDRESS INQUIRIES TO:
ALD/LSE
WRIGHT-PATTERSON AFB
OHIO 45433-5000

DSN: 785-9698
COMMERCIAL: (513) 255-9689

GUIDE FOR WRITING POTENTIAL LESSONS (PLL)

INTRODUCTION

In order to establish control and ensure consistency in the Lessons Learned program, PLLs are submitted through ALD/LSE. **The PLL must be structured into the proper format in accordance with this writing guide before receiving final approval.** PLLs may be submitted on plain bond paper or on AF Form 1251, "Potential Lessons Learned Submittal Record" (Atch 1).

This guide was prepared to give writers of potential lessons an insight into the proper format and instructions necessary for writing good lessons. The guide emphasizes the need to properly complete the AF Form 1251. The form included in this guide may be locally reproduced. **Potential lessons may contain reference to programs, weapon systems or contractors associated with those programs/weapon systems.**

BACKGROUND

A lesson learned is defined as "a recorded experience of **proven** value in conducting future programs or modifications." To realize this value, a lesson must be recorded and entered into the data base before it can be applied in any learning process. The sources of these lessons are numerous - program offices, labs, reports, product improvement efforts, and flightline, intermediate, and depot maintenance personnel, headquarters managers, etc. After PLLs are submitted to ALD/LSE, functional specialists (validators) analyze the experiences and provide the research necessary to document whether the lesson should be recorded in the data base. Validated lessons are entered into the data base where they can be retrieved electronically and applied in other programs.

CRITERIA

The first question that an individual writing a lesson must ask is "Can someone else learn from my experience?" Answering this question involves an analysis of the potential lesson based on the criteria.that a potential lesson must be **beneficial, valid,** and **applicable.**

To be **beneficial,** it must have a readily recognized impact within the Air Force, and it should provide a helpful reminder to the reader. In other words, there must be a reasonable possibility that a designer/manager will repeat the same mistake. However, a lesson does not necessarily have to be about a problem or a mistake. It can be a positive lesson concerning an innovative technique or a new design that can save money and man-hours, or improve supportability/reliability.

To be **valid**, a potential lesson must be factually and logically correct. For example, it is valid to say that "significant cost savings have been realized through use of the impingement spray technique for final cleaning of precision piece parts." This statement is supportable because documentation was submitted with the lesson. However, a design or process that is merely thought to be superior but which has never been tested does not constitute a **proven** experience of value in conducting future programs.

Finally, a potential lesson must be applicable. It should not tell the manager/designer to "build a simulator system to the lowest life cycle cost." No one is going to consciously bring an insupportable system into the Air Force inventory. This unfortunate phenomenon usually results from a multitude of uninformed

decisions during the acquisition process. For this reason, the lesson must identify a specific management or design decision which has a potential for reducing support costs. On the other hand, the lesson must not set forth an action which cannot be applied. For example, changes in a specific accounting or contracting technique may occasionally seem advantageous to the Air Force. However, if such a change is inconsistent with existing law or regulations, then it would not constitute an **applicable** lesson within the Air Force.

A potential lesson that fails to meet any of the three foregoing criteria should not be submitted.

INSTRUCTIONS FOR COMPLETING AF FORM 1251

TOPIC:

Use a brief topic (one to two lines) that accurately describes the contents of the lesson.

LESSON LEARNED:

One or two sentences stating the single most important finding. This Statement must show a "cause and effect" relationship.

PROBLEM:

A concise, general statement (preferably no longer than one or two sentences) describing what went wrong. If writing a positive lesson, enter "none."

DISCUSSION:

Describe the situation, giving a complete, concise account of the findings as they relate to the specific situation, procedure or design. This account is usually one to three paragraphs in length.

RECOMMENDED ACTION:

This part of the lesson must provide the reader with a course of action and tell who should take the action (program manager, contracting officer, etc.), when the action should be taken (i.e., during what program phase (concept exploration & definition, engineering & manufacturing development, production & deployment, etc.) If it is an acquisition or logistics-related lesson). This statement should identify **"what,who,when."**

****NOTES:** If acronyms are used, be sure to spell them out the first time they are used.

If additional space is needed for pertinent information, attach a Sheet to the AF Form 1251.

EXAMPLES

When writing potential lessons, writers seem to have the most difficulty writing the **LESSON LEARNED** and **RECOMMENDED ACTION** statements. The following are examples of both the correct and incorrect way to write those portions of potential lessons.

EXAMPLE OF A CORRECT LESSON LEARNED STATEMENT

LESSON LEARNED:

Inadequately designed heat removal systems and lack of status monitoring of critical equipment cooling can result in data errors and equipment failure or damage.

(Shows a **"cause and effect"** relationship.)

EXAMPLE OF AN INCORRECT LESSON LEARNED STATEMENT

LESSON LEARNED:

There should be one Quality Assurance organization for the entire project.

(Statement is very vague and does not show a **"cause and effect"** relationship.)

EXAMPLE OF A CORRECT RECOMMENDED ACTION STATEMENT

RECOMMENDED ACTION:

Prior to entering full scale development, the Deputy Program Manager for Logistics/Technical Order Management Agency (DPML/TOMA) should prepare plans for the acquisition of technical orders. To accomplish this, the DPML/TOMA must draw upon knowledgeable, experienced personnel, both within and outside of the program. The prime points of contact to assure proper consultation are HQ USAF/LEYE, HQ AFSC/PLLM or ALD/LSG.

(Tells **"when, who, what"** should be done.)

EXAMPLE OF AN INCORRECT RECOMMENDED ACTION STATEMENT

RECOMMENDED ACTION:

Implement a policy or letter of direction defining Aerospace COE standards for construction projects and allowing AFQA to "help" document the work being formed. Include this with the SOW for all high tech construction projects down to the subcontractor level.

(Does not say **who** should implement policy or **"when"** it should be done. Also, the acronyms were not spelled out.)

Appendix IV
Communications Material

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APPENDIX IV
COMMUNICATIONS MATERIAL

Appendix IV provides an example of material that can be used to communicate information about a lessons learned program. The document provided is a Lessons Learned Program Guide used to communicate key points and contact information regarding the Martin Marietta Energy Systems (now Lockheed-Martin) Lessons Learned Program. Articles, flyers and other materials can be effectively used to inform staff about the program and to encourage participation.

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Lessons Learned

Sharing Experiences with Others

For detailed requirements of the Lessons Learned and Alerts Program, refer to QA-16.3

What are Lessons Learned?

"Lessons Learned" are experiences, examples, observations, or positive insights that constitute a "good work practice" or define and identify the solution to an issue which could be of benefit to other Energy Systems organizations or DOE Sites.

What is an Alert?

An "Alert" is a Lessons Learned from a significant issue or experience that has environmental, safety, health, or quality implications, or which identifies a significant improvement area. An Alert may require management action and feedback to ensure that the problem or issue has been resolved, or that the improvement has been incorporated.

Why do we issue Lessons Learned or Alerts?

Lessons Learned and Alerts are documented and issued to provide a method of sharing experiences with others to hopefully avoid repeating similar problems/ mistakes and to share proactive approaches to improve efficiency and avoid potential problems. Wide sharing of your problems or successes may help someone else avoid a similar situation in the future--and it may help reduce our operating costs.

Who can generate a Lessons Learned?

Anyone can and should!!

If you have found an approach to handling a situation which others may benefit from, have experienced a significant problem or been involved in a hazardous situation--or know of one which has occurred, you can initiate a Lessons Learned using information contained in this guide or by contacting one of the Lessons Learned Program Managers.

Lessons Learned Program Guide

What are typical sources of Lessons Learned?

- Daily activities and experiences
- Occurrence and Incident Reports
    - Within MMES
    - From other DOE Contractors
- Assessment Issues
- Operational Readiness Reviews
- Performance or process improvement initiatives
- Government and Industry experiences
- Technical periodicals and bulletins
- Project completion evaluations

How do I submit a Lessons Learned?

To submit a Lessons Learned, complete the Lessons Learned form which can be obtained by either contacting a Lessons Learned Program Manager or thru ALL-IN-1 by typing "A1FORMS". After you have compiled the information, it will be validated by a technical expert in the area to which the Lesson pertains prior to actual entry in the Lessons Learned Information System. **Be sure to have it evaluated for classification PRIOR to entry on any computer system.**

Helpful tips for writing a Lesson

- Be consise and brief in the description of the Lesson and recommendations
- Include examples which indicate scope of applicability
- Identify sources for additional information or reference
- Spell out acronyms
- Include contact person for follow-up information
- **Obtain classification review prior to entry on any computer system**

Refer to the Lessons Learned Form Instructions in VTX for additional details.

Printing a Lessons Learned

To print a Lesson Learned or any of the information contained in the Lessons Learned Information System, enter a <GOLD S> followed by a <GOLD W> and the Lesson or information you are currently viewing will be printed. See the VTX End User Help option on the main VTX menu for additional information on printing from VTX.

Lessons Learned Program Guide

How do I find previously issued Lessons Learned?

All Lessons Learned and Alerts are entered into the Lessons Learned Information System, which is available via VTX on MMES computer networks. These lessons may be helpful when developing new programs or procedures, proposing new corrective actions, or identifying methods previously proven effective for similar situations. To access historical lessons:

- Logon to your MMES computer account
- At the system $ prompt, type VTX
- Select the Energy Systems Lessons Learned option from the VTX menu

The Lessons Learned Information System has several options you can choose from:

1. ***Lessons Learned Word Search*** provides the capability to locate lessons containing a word you supply.
2. ***Lessons Learned Category Search*** provides the capability to locate lessons from a predefined list of categories.
3. ***Last 30 Days Entries*** provides a listing of new Lessons Learned.
4. ***Lessons Learned Program Contacts*** provides a current listing of the Lessons Learned Help contacts and divisional coordinators.
5. ***Validators by Organization*** provides a listing of technical personnel who are approved to validate new Lessons Learned.
6. ***Lessons Learned Input Form Instructions*** provides guidance on completing the Lessons Learned Form to submit a new lesson.
7. ***Blank Lessons Learned Input Form*** provides a form which can be printed to submit a new lesson.
8. ***Printing a Lessons Learned*** provides instructions on how to print a hard-copy of a Lessons Learned.
9. ***Help in Using the Lessons Learned System*** provides step-by-step instructions for using the Lessons Learned System.

Need more information?

If you need additional information regarding the Lessons Learned Program, or have an experience which you believe should be shared with others via a Lessons Learned, consult the Lessons Learned and Alerts Program Procedure, QA-16.3, or contact one of the Lessons Learned Program Managers:

ERWM: R. K. Gupta (4-1057) **Y-12 & MMES: J. C. Bell (6-8011)**
ORNL: A. L. Wachs (4-2343) **Central Org: P. L. Johnson (4-9365)**
or send an e-mail to LESSONSLRND

Lessons Learned Program Guide

OFFICIAL USE ONLY

LESSONS LEARNED FORM

Title:

Category:
Subcategory:
Site:
Originator:

Date Submitted:
Date Validated:
Division:
Validator:
Program Manager:

Lesson Learned:

Problem/Issue:

Discussion:

Resolution:

References:

Keywords:

Contains NO Classified Data _____
Authorized Derivative Classifier

Should this Lesson Learned be reviewed periodically for obsolescence of data?
Yes _____ No _____
If YES, what should be the review interval? _____

Lessons Learned Program Guide

Appendix V
Air Force Lessons Learned Validator's Guide

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APPENDIX V
AIR FORCE LESSONS LEARNED VALIDATOR'S GUIDE

Appendix V provides an example of a lessons learned validation process that has been implemented as part of the Air Force Lessons Learned Program. The *Air Force Validator's Guide* was prepared to provide validators with the proper format, instructions and samples for validating potential lessons learned. It also includes criteria for determining what is and what is not a valid lesson learned.

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AIR FORCE LESSONS LEARNED PROGRAM

"Fingertip Accessibility to Experience"
(FATE)

LESSONS LEARNED VALIDATOR'S GUIDE

Published by
THE AIR FORCE LESSONS LEARNED PROGRAM MAY 1993

ADDRESS INQUIRIES TO:
ASC/CYN, BLDG 17
2060 MONAHAN WAY
Wright-Patterson AFB, OH 45433-6503
DSN: 785-3454
COMMERCIAL: (513) 255-3454

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INTRODUCTION

In order to establish control and ensure consistency in the program, potential lessons learned (PLL) are submitted through ASC/CYM. PLLs may be submitted on plain bond paper, on AF Form IZ51 (available from ASC/CYM). Upon receipt, PLLs will be assigned by the Lessons Learned (LL) staff to the project (validation) office having primary functional responsibility for the area covered by the PLL. The project (validation) office will designate a functional specialist (validator) to analyze, validate and rewrite (if necessary) the lesson. Also, we receive lessons that have been written and validated by offices with which we have established a Memorandum of Agreement/Letter of Agreement. These lessons require no further validation. The PLI must be structured into the proper lessons learned format (see page 7) in accordance with this guide before receiving final approval from senior level management (Col/GH-15).

This guide was prepared to give validators the proper format, instructions and samples for validating potential lessons. The guide emphasizes the need to properly complete the AFLC Form 8015 ("Lessons Learned Worksheet"), the validation check list, and attach pertinent information as back-up material. The AFLC Form 8015 must contain a summary of all the information gathered by the validator in the process of researching the potential lesson to determine its validity. Samples of the three types of lessons (Lesson Learned, Rewrite and No Lesson Learned) are included in this guide.

GUIDE FOR VALIDATING POTENTIAL LESSONS LEARNED

BACKGROUND

A lesson learned is defined as "a recorded experience of proven value in conducting future programs and modifications." To realize this value, a lesson must be recorded, validated and entered into the data base before it can be applied in any learning process. The sources of lessons are numerous - program offices, labs, reports, product improvement efforts and flightline, intermediate and depot level maintenance personnel, etc. Functional specialists (validators) analyze these potential lessons and conduct the research necessary to document whether a lesson is valid. Validated lessons are entered into the data base where they can be retrieved electronically and applied to other programs. Potential lessons may contain references to programs, weapon systems or contractors associated with those programs/weapon systems.

CRITERIA

The first question an individual researching a potential lesson must ask is "Can someone else learn from this experience?" Answering this question involves an analysis of the potential lesson based-on the criteria that it must be beneficial, valid and applicable.

To be beneficial, it must have a readily recognized impact within the Air Force. It should provide a helpful reminder to the reader. In other words, there must be a reasonable possibility that a designer or manager could repeat the same mistake. However, a lesson does not necessarily have to be about a problem or a mistake. It can be a positive lesson (Best Practice) concerning an innovative technique or a new design that can save money and man-hours or improve supportability/reliability.

To be valid, a potential lesson must be factual and logical. For example, it is valid to say that "significant cost savings have been realized through the use of the impingement spray technique for final cleaning of precision piece parts." This statement is supportable because documentation was submitted with the lesson learned. However, a design or process that is merely thought to be superior, but which has never been tested, does not constitute a "proven experience of value in conducting future programs."

Finally, a potential lesson must be applicable. It should not tell the manager/designer to "build a simulator system to the lowest life cycle cost." No one is going to consciously bring an insupportable system into the inventory. This unfortunate phenomenon usually results from a multitude of uninformed decisions during the acquisition process. For this reason, the **lesson** must identify a specific management or design decision which has a potential for reducing support costs. On the other hand, the lesson must not set forth an action which cannot be applied. For example, changes in a specific accounting or contracting technique may seem advantageous to the Department of Defense (DOD). However, if such a change is inconsistent with existing law or regulations, then it would not have applicability within the DOD.

A potential lesson that fails to meet any of the three foregoing criteria should be treated as a "no lesson learned." If the lesson meets all the criteria and is not already documented in the data base, it should be validated as a "lesson learned." If the lesson is similar to one that is already contained in the data base, it may be added to the existing lesson as a "rewrite" to help substantiate it or added to the lesson folder as additional back-up information.

A validation check list will be included with each PLL that is forwarded for validation. The validator will complete the check list and return it along with the completed AFLC Form 8015.

In the process of validating a potential lesson, the validator will determine the adequacy of policy/regulations covering the lesson learned content and ensure any inadequacies are corrected.

INSTRUCTIONS FOR COMPLETING AFLC FORM 3015

Fill in the appropriate blocks as follows:

***NOTE:** Blocks 1 and 8 are completed by ASC/CYM.

*1. LESSON NUMBER: (Assigned by ASC/CYM).

2. STATUS: (Examples of the following types can be found in this guide).

Lesson Learned - This block will be checked if the validator **determines** that this is a valid **lesson.**

Lesson Rewrite - This block will be checked when the validator adds information from the **potential** lesson to a similar lesson found during a data base search. (The existing lesson will be included in the file).

No Lesson Learned - This block will be checked when the potential lesson does not meet the criteria (is not valid) or is a duplicate of a lesson already in the data base.

3. TOPIC: Use the topic shown on the PLL or change it to better reflect the content of the PLL.

4. IMPACT AREAS: Enter the impact area(s) and impact area number(s) to which the lesson pertains. More than one area may be used on the same lesson. The impact areas are listed on Atch 1. If the lesson is a "No Lesson Learned," leave this space blank.

5. ENTER IN ACQUISITION MODEL YES *NO* FUNCTIONAL AREA FM/PK/XR/EN/DO/AL: Mark appropriate block. If you feel it should be in the Air Force Acquisition Model circle the appropriate functional area(s). Those selected will be forwarded to the appropriate functional area for a final decision.

6. PROGRAM PHASE: Enter the phase of a program during which the lesson can best be applied. The five program phases are: Concept Exploration & Definition (includes Pre-conceptual), Demonstration & Validation, Engineering & Engineering & Manufacturing, Development, Production & Deployment and Operations & Support. If the lesson is a "No Lesson Learned" or is non-acquisition or non-logistics related, enter "N/A."

7. VALIDATOR: Enter your name, office symbol and telephone extension. When rewriting a lesson, include the name of the original validator, as well (if available).

*8. SOURCE OF ORIGIN (of the potential lesson): This refers to the original submitter of the PLL and is entered by ASC/CYM.

9. REFERENCES: List people contacted and documents used as sources of information during your research. Include full names, office symbols, addresses and DSN numbers. It is the validator's responsibility to seek out other functional experts within, as well as outside their organization to ensure the validity of the information in the potential lesson. Documents reviewed and persons contacted should be commented on in block 10-3 (Analysis Section). The lesson submitter should be contacted, whenever possible, to discuss the content of the PLL. You must also enter this information for a "No Lesson Learned"

10. ANALYSIS: List comments on the course of your research and analysis of the potential lesson. Complete the block as follows:

A. The validator will search the data base to determine whether any similar lessons are on file. If no lessons-are found, write "NONE" in block 10-A.

B. If an identical or similar lesson is found, list the number(s) and comment on the applicability of the lesson(s) in block- 10-B.

C. Summary of the Analysis:

(1) This will be used as historical back-up material when needed.

(2) A concise statement of any pertinent discussions of the subject with the lesson submitter, system program office, equipment specialist, system manager, item manager, engineer, deputy program manager for logistics, integrated logistics support manager, contracting specialist, etc.

(3) Comment on any documents listed in Block 9 (References). When any document or excerpt from a document is included in the lesson folder as back-up material, it must be referred to as Atch 1, Atch 2, etc.

(4) Comment on any lesson(s) found when the data base was searched. Decide at this point if your potential lesson is identical to an existing lesson or determined to be not valid (No Lesson Learned); to be combined with an existing lesson (Rewrite); or accepted as a valid Lesson Learned (see Block 2, Status).

NOTE: A copy of the completed AFLC 8015 (showing the validator's name) will be provided to the submitter of the lesson when he/she is notified of the disposition of the submitted potential lesson.

11. Signature of Project Officer/Validator: Validator will sign this block.

12. Date: Date validator completes the form.

13. Director/Project Office Coordination: Signature of validator's supervisor (no lower than directorate level). Signature verifies supervisor's approval.

14. Date: Date supervisor signs the form.

15. Senior Level Management Approval (Col/GM-15). Signature verifies approval.

16. Date. Date Senior Level Manager approves validator's analysis.

17-19. Used by project office to inform ASC/CYM that the potential lesson should be rerouted to another organization for validation, and where it should be rerouted to.

IMPACT AREAS

IMPACT AREAS (ALPHA LISTING)

AS OF 1 MAY 1993

AUTOMATED INFORMATION SYSTEMS
AVIONICS
BLUE TWO VISITS
COMPOSITES
COMPUTER RESOURCES (SUPPORT)
CONFIGURATION MANAGEMENT
CONTRACT ADMINISTRATION
CONTRACTING
CORROSION CONTROL
DATA MANAGEMENT
DESERT SHIELD/STORM
ENERGY MANAGEMENT
ENGINEERING
ENGINEERING DATA (TECH. DATA)
ENVIRONMENTAL MANAGEMENT
EXPERT SYSTEMS/AI
FACILITIES
FACTS (Fasteners, Actuators etc.)
FOREIGN MILITARY SALES
FUNDING (LOGISTICS SUPPORT)
HAZARDOUS MATERIALS
HUMAN FACTORS ENGINEERING
IDENTIFICATION
LIFE CYCLE COST
LOGISTICS ASSESSMENT
LOGISTICS MAT. INFO. SUPPORT
LOGISTICS SUPPORT ANALYSIS
MAINTENANCE CONCEPT (PLANNING)
MANPOWER REQUIREMENTS
MANUFACTURING
MATERIALS
MODIFICATION PLANNING
OPERATIONAL REQUIREMENTS
OPERATIONS
ORDNANCE
PACKAGING, HANDLING, STORAGE + TRANSP
PERSONNEL
PROGRAM CONTROL
PROGRAM MANAGEMENT
PROGRAM MANAGERS CONCERNS
PROGRAM MAT. RESP. TRANSFER
PROPULSION SYSTEMS
PROVISIONING

QUALITY ASSURANCE
RELIABILITY & MAINTAINABILITY
REPAIR TECHNIQUES
SAFETY
SECURITY
SOFTWARE
SOFTWARE MANAGEMENT
SOURCE SELECTION
SUPPLY SUPPORT
SUPPORT EQUIPMENT
SURVIVABILITY
SYSTEMS INTEGRATION (HARDWARE)
SYSTEMS INTEGRATION (MANAGEMENT)
TECHNICAL ORDERS (TECH. DATA)
TECHTAP
TECHTIP
TEST AND EVALUATION
TEST EQUIPMENT
TOTAL QUALITY MANAGEMENT (TOM)
TRAINERS/SIMULATORS
TRAINING AND TRAINING SUPPORT
TREATIES
WARRANTIES

NOTE: The assignment of IMPACT AREA is at the validators call and may be more than one area.

FORMAT FOR LESSONS LEARNED

*NOTE: The potential lesson must conform to the following format (AF Form 1251, Jan 90, may be used to submit lessons). The potential lesson may contain references to weapon systems or programs and contractors associated with those weapon systems/programs.

TOPIC: (Use a brief topic (one or two lines) that accurately describes the content of the lesson.)

LESSON LEARNED: (One or two sentences stating the single most important finding. It must show & "cause and effect" relationship.)

PROBLEM: (A concise statement (preferably no longer than one or two sentences) describing what went wrong. If writing a positive lesson, enter "NONE.")

DISCUSSION: (Describe the situation, giving a complete, concise account of the findings as they relate to the specific situation, procedure or design. This account usually consists of one to three paragraphs.

RECOMMENDED ACTION: (This part of the lesson learned must provide the reader with a course of action and tell who should take what action (program manager, contracting officer, etc.). Show the program phase (when) (Conceptual Exploration & Definition, Engineering & Manufacturing Development, etc., if it is an acquisition or logistics related lesson) in which this lesson should be applied. This block should answer the questions "WHO, WHAT, WHEN .")

NOTES: If acronyms are used, be sure to spell them out the first time they are used.

If the Lesson Learned statement does not show a cause and effect relationship or if the Recommended Action statement does not answer the questions 'who, what and when,' the validator will rewrite those portions of the lesson to conform to this format.

We requested our legal department to review the Air Force Lessons Learned Program for the need to comply with the Arms Export Control Act. Our consultations with them and our experience has demonstrated that the data contained in the data base does not meet the- criteria or intent of the Act.

In order to broaden the base of availability of the program to our customers, each validator/writer is responsible to ensure that no Classified or For Official Use Only data is included im their lessons Learned submissions. The validator/writer of potential lessons must ensure that the proposed lesson(s) can not matrix with other data to allow an unauthorized disclosure of sensitive data. The US Government assumes no liability for direct patent infringement, or contributory patent infringement, or the misuse of technical data.

The US Government does not warrant the adequacy, currency, or completeness of the technical data. The-US Government assumes no liability for loss, damage, or injury resulting from manufacture, or use for any purpose or any product, article, system, or material involving reliance of any or all technical data furnished in response to the request for technical data.

The US Government does not sponsor nor promote any companies or products mentioned in the database.

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Appendix VI
Functional Categories

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APPENDIX VI
FUNCTIONAL CATEGORIES

One or more functional category(s) should be assigned to each lesson learned prepared for electronic dissemination. The functional category(s) indicate the general subject area(s) of the lesson learned and facilitate indexing and accessing lessons learned information and analysis of related lessons. The functional categories that have been selected for the DOE Lessons Learned Program may be expanded or reduced, as necessary, to meet the needs of each individual organization.

The lessons learned functional categories are consistent with the categories established under the new DOE Directives Classification System. These categories are based on criteria developed for the Malcolm Baldridge Award. The Malcolm Baldridge Award recognizes U.S. companies that excel in quality management and quality achievement. The Award was initiated on August 20, 1987, when the President signed Public Law 100-107, the Malcolm Baldridge National Quality Improvement Act.

The Malcolm Baldridge Award is presented annually to up to six companies. The exact criteria used to evaluate the applicants have been refined each year, with the trend toward requiring more detailed information in fewer, but more important, areas. Many companies view the Malcolm Baldridge criteria as a useful diagnostic tools for evaluating the effectiveness of their management practices.

The application of the Malcolm Baldridge criteria to the DOE Directives Classification System supports the Department's strategic goal of improving its management practices. This goal is included in the DOE strategic plan and is part of a 1995 performance agreement signed between the President and the Secretary of Energy.

The old DOE Directives Classification System was based on a 1977 Department of Transportation model that contained 51 main categories. The new model contains 5 main categories. These categories cover key areas of DOE business and provide a consistent framework for categorizing DOE activities. Some of the categories also include subcategories that support a lower level of detail. The lessons learned functional categories are consistent with the Malcolm Baldridge criteria at top levels. The lower levels have been altered slightly to address lessons learned categories that were not covered in the Directives Classification System.

To avoid the burden of using two separate classification systems, it is recommended that sites develop systems that include the DOE functional categories provided below. Attached is the most recent version of the DOE directives classification system and a cross-walk of old DOE Orders to the new classification system. However, because this classification system is still evolving, it is important to obtain the most current list from DOE's Office of Human Resources and Administration when developing lessons learned programs and to keep functional categories current as the categories/subcategories change.

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DIRECTIVES CLASSIFICATION SYSTEM

100 LEADERSHIP/MANAGEMENT PLANNING

110 Organization and structure. Includes directives on authorities, functions, and internal relationships.

120 Planning. Includes process for determining how best to do work, including strategic planning, institutional and program planning, implementation planning, and economic analysis and forecasting. This category does not include performance measurement, goal setting, and development of objectives.

- 120 General
- 121 Strategic Planning
- 122 Institutional Planning
- 123 Economic Forecasting
- 124 Implementation Planning

130 Budget. Includes the financial budgeting process. Staffing budgets are covered under the Human Resources area.

- 130 General
- 131 Field Budget Process
- 132 Headquarters Consolidation Process
- 133 OMB Budget Process
- 134 Congressional Budget Review
- 135 Budget Execution
- 136 Allotments and Reprogramming

140 External Relationships. Includes overall processes for public relations, congressional relations, intergovernmental affairs and agreements.

- 140 General
- 141 Public Relations
- 142 International Relations
- 143 Congressional and Domestic Intergovernmental Affairs

150 Emergency Management and Planning. Includes succession planning and planning for operational emergencies.

- 150 General
- 151 Public Affairs in Emergencies
- 152 Governmental Emergencies
- 153 Operational, Energy, and External Emergencies

200 INFORMATION AND ANALYSIS

210 Performance Measures and Analysis. Includes establishment of contractor milestones and incentives, performance indicators, and tracking/trending.

220 Assessments. Includes all types of audits, oversight, appraisal programs, and accident investigations.

- 220 General
- 221 Inspector General Relations
- 222 GAO Assessments
- 223 Special Program Assessments
- 224 Accident Investigation
- 225 Audits and Appraisals

230 Reporting. Includes all cross-cutting reporting programs such as occurrence reporting. Reporting requirements tied to a single area such as budgeting are covered under that category.

- 230 General
- 231 Safety and Health Reporting Requirements
- 232 Occurrence Reporting
- 233 Interagency Reporting Requirements

240 Records Management. Includes forms management, records disposition, and records management.

- 240 General
- 241 Records Management
- 242 Forms Management

250 Standardization. Includes all aspects of how DOE issues policy, rules, directives, other requirements, technical standards, and formal guidance both internally and to contractors; and how exemptions are processed.

- 250 General
- 251 Policies, Orders, Notices, Manuals, and Guides (DOE Directives)
- 252 DOE Standards
- 253 Procedures

300 HUMAN RESOURCES

310 Human Resources Planning and Management. Includes staffing, planning, and budgeting; EEO; and affirmative action programs.

- 310 General
- 311 EEO
- 312 Staffing Budgeting

320 Federal Employment. Includes employee recruitment, selection, placement, pay-setting, and reductions in force for various types of employment.

- 320 General
- 321 Employment

322 Pay Administration and Hours of Duty
323 Promotion
324 Priority Placement
325 Position Classification
326 Employee Suitability and Position Sensitivity
327 Employment Reductions in Senior Executive Service

330 Federal Employee Performance and Recognition. Includes performance appraisals, awards, disciplinary actions, and removals for poor performance or cause.

330 General
331 Performance Appraisal
332 Incentive Awards
333 Work Force Discipline

340 Federal Employee Well-being and Satisfaction. Includes insurance and retirement, employee counseling and medical programs, drug testing, employee participation campaigns, labor relations, grievances, and appeals.

340 General
341 Leave Administration
342 Grievances
343 Substance Abuse and Employee Assistance
344 Parking

350 Contractor Resources Program. Covers management of contractor personnel policies and programs in all areas including employment, education and training for federal and contractor employees, performance and recognition, and well-being and satisfaction.

350 General
351 Pension and Insurance Programs
352 Equal Employment Opportunity
353 Reductions in Employment
354 Federal Labor Standards
355 Reports

360 Employee Education and Training. Includes education and training activities for DOE and contractor employees.

360 General
361 Federal and Contractor Employee Training

400 WORK PROCESSES

401 General

410 Management. Includes major management systems such as project management, configuration management, program management, quality assurance and total quality management, and commitment tracking.

- 410 General
- 411 Assignments and Responsibilities
- 412 Management Systems
- 413 Program Management
- 414 Quality Management

420 Facility Authorization. Includes safety analysis, technical safety requirements, unreviewed safety questions, and other issues related to the authorization basis of nuclear and non-nuclear facilities.

- 420 General
- 421 Safety Analysis
- 423 Technical Safety Requirements
- 424 Unreviewed Safety Questions

430 Life Cycle Facility Operations. Includes design/engineering, construction, maintenance, operations, waste management, decontamination and decommissioning, and environmental restorations.

- 430 General
- 431 Design/Engineering
- 432 Construction
- 433 Maintenance
- 434 Operations
- 435 Waste Management/D&D/ER

440 Worker Protection. Includes OSHA, aviation safety, radiation protection for workers, and other safety programs that relate to the protection of workers and others entering DOE sites.

- 440 General
- 441 Radiation Protection
- 442 OSH-type Issues

450 Protection of the Public and Environment. Includes various programs for ensuring public health and safety protection of the environment.

- 450 General
- 451 National Environmental Policy Act

460 Packaging and Transportation. Includes transportation of hazardous and non-hazardous goods and materials, except for household goods.

- 460 General
- 461 Packaging and Transportation

470 Safeguards and Security. Includes physical and personnel security, information security, security classification, and nuclear materials protection and accountability.

470 General
471 Information Security
472 Personnel Security
472 Physical Security
473 Material Control and Accountability

480 Work for Others and Technology Transfer. Includes work performed for other government agencies and private industry, and programs for transferring technology to the private sector.

480 General
481 Technology Transfer
482 Work for Others

500 BUSINESS AND SUPPORT SERVICES

510 Legal. Includes Freedom of Information Act (FOIA) and Privacy Act, and any directives related to legal and patent/copyright processes.

510 General
511 Hearings and Appeals
512 Data Integrity Board
513 FOIA/Privacy Act
514 Participation in Political Activities

520 Finance. Includes special methods of financing programs.

520 General
521 Financial Incentives Program
522 Pricing of DOE Materials and Services

530 Accounting. Includes all types of accounting except accounting for special nuclear materials.

530 General
531 Transfer of Contracts Between Department Elements
532 Interagency Sharing of Costs
533 Employee Indebtedness
534 Accounting
535 Time and Attendance Reporting

540 Procurement and Grants Management. Includes contractual arrangements for procurement of goods and services, and for grants to organizations. It does not include procurement of utilities, laundry, and other similar commercial services, or procurement of ADP and telecommunications equipment.

540 General
541 Reporting Systems
542 Contracting Officials and Conflicts of Interest
543 Competitive Requirements in Contracting
544 Indirect Cost Rate Responsibilities
545 Priorities and Allocations Program
546 Funds-Out Interagency Agreements
547 Civil Rights Compliance in Federally Assisted Programs

550 Travel and Transportation. Includes policies and reimbursement procedures for local travel, temporary duty travel, permanent change of station, and transportation of household goods. Also includes motor pool management.

550 General
551 Travel Policy and Procedures
552 Foreign Travel Authorization
553 Travel Charge Card Program

560 Telecommunications and Data Systems. Includes procurement and management of telecommunications, telephone services, ADP equipment, software, maintenance, and services.

560 General
561 Telecommunications
562 Management of Computer Systems
563 Information Technology
564 Telephone Systems
565 Unclassified Computer Security Program

570 Administrative Services. Includes mail, file, office space management, reproduction, printing, library services, and general office services.

570 General
571 Scientific and Technical Information Management
572 Audiovisual and Exhibits Management
573 Mail Management
574 Library Services

580 Property Management. Includes personal and real property management, acquisition, and disposition.

580 General

DIRECTIVES CLASSIFICATION SYSTEM / DOE ORDER CROSS-WALK

100 LEADERSHIP/MANAGEMENT PLANNING

110 Organization and Structure. Includes directives on authorities, functions, and internal relationships.

P 110.1	SEN-19A-92	Department of Energy Executive Committee
P 110.2	SEN-36-92	Senior Nuclear Manager's Group
O 111.1	1100.6A	Departmental Organization Control System
O 112.1	1100.4	Organization and Functions - Board of Contract Appeals
O 113.1	2030.3	Federalism Guidelines

120 Planning. Includes processes for determining how best to do work, including strategic planning, institutional and program planning, and economic analysis and forecasting. This category does not include performance measurement, goal setting, and development of objectives.

P 121.1	SEN-25A-91	Strategic Planning Initiative
O 122.1	5000.1B	Institutional Planning of Multi program Laboratories
O 123.1	5900.1A	Energy Information Collection, Analysis and Dissemination

130 Budget. Includes the financial budgeting process. Staffing budgets are covered under the Human Resources area.

O 131.1	5100.3	Field Budget Process
O 132.1	5100.4	Internal Review Budget Process
O 133.1	5100.5	Office of Management and Budget - Budget Process
O 134.1	5100.6A	Congressional Budget Review
O 135.1	5100.11A	Budget Execution - Office of Management and Budget Apportionment and Treasury Warrant Process
O 135.2	5100.12A	Budget Execution - Department of Energy Base Table
O 135.3	5100.13A	Budget Execution - Rescissions and Deferrals
O 135.4	5500.6B	Shutdown of Departmental Operations Upon Failure by Congress to Enact Appropriations
O 136.1	5100.14A	Allotment and Approved Funding Program Process
O 136.2	5160.1B	Reprogramming, Restructuring, and Appropriation Transfer Procedures

140 External Relationships. Includes overall processes for public relations, Congressional relations, Intergovernmental affairs and agreements.

P 141.1	P 1210.1	Guidance on Implementation of the Department's Public Participation Policy
P 142.1	SEN-17-90	Coordination of Global Climate Change Activities
O 142.1	1240.2B	Unclassified Visits and Assignments by Foreign Nationals
N 142.1-1	N 1240.2	Unclassified Foreign National Visits and Assignments
N 142.1-2	N 1240.3	Extension of DOE N 1240.2
O 142.2	1270.2B	Safeguards Agreement with the IAEA

O 143.1	1220.1A	Congressional and Intergovernmental Affairs
O 143.2	1230.2	American Indian Tribal Government Policy
O 143.3	2100.12A	Payment for Special Burdens and in Lieu of Taxes

150 Emergency Management and Planning. Includes succession planning and planning for operational emergencies.

O 151.1	5500.1B	Emergency Management System
O 151.2	5500.11	Power Marketing Administration Emergency Management Program
O 152.1	5500.4A	Public Affairs Policy and Planning Requirements for Emergencies
O 152.2	5500.5A	Public Affairs Policy and Planning Requirements for a Fuel Supply Disruption Emergency
O 153.2	5500.10A	Emergency Planning, Preparedness, and Response to Continuity of Government Emergencies (Will include 5500.9A.)
O 154.1	5500.3B	Comprehensive Emergency Management Program (Will include 5500.2B, 5500.3A, 5500.7B, and 5500.8A.)
O 154.2	5530.1A	Accident Response Group
O 154.3	5530.2	Nuclear Emergency Search Team
O 154.4	5530.3	Radiological Assistance Program
O 154.5	5530.4	Aerial Measuring System
O 154.6	5530.5	Federal Radiological Monitoring and Assessment Center

200 INFORMATION AND ANALYSIS

210 Performance Measures and Analysis. Includes establishment of contractor milestones and incentives, performance indicators, and tracking/trending.

O 210.1	Performance Indicators and Analysis of Operational Information

220 Assessments. Includes all types of audits, oversight, appraisal programs, and accident investigations.

O 221.1	250	DOE Assessments
O 221.2	2321.1B	Auditing of Programs and Operations
O 221.3	5000.2B	Multi program Laboratory Appraisals
O 222.1	1000.3B	Internal Control Systems
O 222.2	2030.4B	Reporting Fraud, Waste, and Abuse to the Office of Inspector General
N 222.2-1	N 2030.7C	Reporting Fraud, Waste, and Abuse
O 222.3	2320.1C	Cooperation with the Office of Inspector General
O 222.4	2320.2B	Establishment of Departmental Position on Inspector General Reports
O 223.1	2200.13	Oversight of Integrated Contractor Financial Management
O 223.2	2300.1B	Audit Resolution and Follow-up
O 224.1	2340.1C	Coordination of General Accounting Office Activities
O 225.1	441	Accident Investigation
O 226.1	5480.17	Site Safety Representatives

230 Reporting. Includes all cross-cutting reporting programs such as occurrence reporting. Reporting requirements tied to a single area such as budgeting are covered under that category.

O 231.1	260	Safety and Health Reporting Requirements
O 232.1	261	Occurrence Reporting
O 233.1	1323.2B	Interagency Reporting Requirements

240 Records Management. Includes forms management, records disposition, and records management.

O 241.1	1324.5B	Records Management Program
O 241.2	1324.2A	Records Disposition
O 242.1	1322.2C	Forms Management

250 Standardization. Includes all aspects of how DOE issues policy, rules, directives, other requirements, technical standards, and formal guidance both internally and to contractors; and how exemptions are processed.

P 251.1	SEN-0-89	Secretary of Energy Notices
O 251.1	281	DOE Directives System
M 251.1-1	281	DOE Directives Manual
N 251.1-1	N 1321.146	Cancellation of Directives
N 251.1-2	N 1321.147	Cancellation of Directives
O 252.1	280	DOE Technical Standards Program

300 HUMAN RESOURCES

310 Human Resources Planning and Management. Includes staffing planning and budgeting, EEO, and affirmative action programs.

P 311.1	1600.2B	Secretary's Commitment to Equal Opportunity
P 311.2	1600.3	Policy on Sexual Harassment
P 311.3	SEN-38-92	Policy on the Prevention and Eradication of Sexual Harassment in the Workplace
O 311.1	1130.4	Federal Women's Program Advisory Councils
O 311.2	1130.5	Hispanic Employment Program Advisory Councils
O 311.3	1600.1A	Federal Women's Program
O 311.4	1600.4	Hispanic Employment Program
O 311.5	1600.5	System for Processing Complaints of Discrimination
O 311.6	3300.2A	Affirmative Action Program for Handicapped Persons
O 311.7	3330.1A	Federal Equal Opportunity Recruitment Program

320 Federal Employment. Includes employee recruitment, selection, placement, pay-setting, and reductions-in-force for various types of employment.

O 321.1	3300.3	Employment
O 321.2	3304.1A	Employment of Experts and Consultants
O 321.3	3305.1	Presidential, Supergrade, and Schedule C Positions

O 322.1	3550.1A	Pay Administration and Hours of Duty
O 323.1	3335.1C	Merit Promotion
O 323.2	3410.2A	Upward Mobility Program
O 324.1	3330.2	Priority Placement and Consideration
O 325.1	3511.1A	Position Classification
O 326.1	3731.1	Suitability, Position Sensitivity Designations, and Related Personnel Matters
O 327.1	3350.1	Furlough in the Senior Executive Service
O 327.2	3351.2	Reduction in Force in the Senior Executive Service

330 Federal Employee Performance and Recognition. Includes performance appraisals, awards, disciplinary actions, and removals for poor performance or cause.

O 331.1	3430.3A	Departmental Performance Appraisal System
O 332.1	3450.1B	Incentive Awards
O 333.1	3750.1	Work Force Discipline

340 Federal Employee Well-Being and Satisfaction. Includes insurance and retirement, employee counseling and medical programs, drug testing, employee participation campaigns, labor relations, grievances, and appeals.

O 341.1	3630.1B	Leave Administration
O 341.2	3630.2	Voluntary Leave Transfer Program
O 342.1	3771.1	Grievance Policy and Procedures
O 343.1	3792.1A	Employee Assistance Program
O 343.2	3792.3	Drug-Free Federal Workplace Testing Implementation Program
O 344.1	3900.1B	Parking

350 Contractor Human Resource Programs. Covers management of contractor personnel policies and programs in all areas including employment, performance and recognition, and well-being and satisfaction.

O 351.1	3220.1A	Management of Contractor Personnel Policies and Programs
O 352.1	3830.1	Policies and Procedures for Pension Programs Under Operating and On-site Service Contractors
O 352.2	3890.1A	Contractor Insurance and Other Health Benefit Programs
O 353.1	3410.1B	Federal and Contractor Employee Training
O 354.1	3220.2A	Equal Opportunity in Operating and On-site Service Contractor Facilities
O 355.1	3309.1A	Reductions in Contractor Employment
O 356.1	3220.6A	Federal Labor Standards
O 357.1	3220.4A	Contractor Personnel and Industrial Relations Reports

360 Employee Education and Training. Includes education and training activities for DOE and contractor employees.

O 361.1	3410.1B	Federal and Contractor Employee Training

400 WORK PROCESSES

410 Management. Includes major management systems such as project management, configuration management, program management, quality assurance and total quality management, and commitment tracking.

M 411.1	N 1321.141	Manual of Functions, Assignments, and Responsibilities for Nuclear Safety
O 412.1	5700.2D	Cost Estimating, Analysis, and Standardization
O 412.2	5700.7C	Work Authorization System
P 413.1	SEN-14-89	Clean Coal Technology Demonstration Program Implementation Arrangements
O 413.1	5000.4A	Laboratory Directed Research and Development
O 414.1	5600.1	Management of DOE Weapon Program and Weapon Complex
O 414.2	5610.13	Joint Department of Energy/Department of Defense Nuclear Weapon System Safety, Security, and Control Activities
O 415.1	5660.1B	Management of Nuclear Materials
O 416.1	5700.6C	Quality Assurance

420 Facility Authorization. Includes safety analysis, technical safety requirements, unreviewed safety questions, and other issues related to the authorization basis of nuclear and non-nuclear facilities.

P 420.1	SEN-35-91	Nuclear Safety Policy
O 420.1	5480.25	Safety of Accelerator Facilities
O 421.1	5610.10	Nuclear Explosive and Weapon Safety Program
O 421.2	5610.11	Nuclear Explosive Safety
O 425.1	440	Startup and Restart of Nuclear Facilities

430 Life-Cycle Facility Operations. Includes design/engineering, construction, maintenance, operations, waste management, decontamination and decommissioning, and environmental restoration.

O 430.1	4000.XX	Life Cycle Asset Management
O 431.1	5480.30	Reactor/Non-Reactor Design Criteria
P 435.1	SEN-37-92	Waste Minimization Crosscut Plan Implementation
O 435.1	5820.2A	Waste Management

440 Worker Protection. Includes OSHA, aviation safety, radiation protection for workers, and other safety programs that relate to the protection of workers and others entering DOE sites.

P 440.1	1300.3	Policy on the Protection of Human Subjects
O 440.1	470	Worker Protection
O 440.2	471	Aviation
N 441.1	N 5400.9	Sealed Radioactive Source Accountability
N 441.2	N 5400.13	Sealed Radioactive Source Accountability (Extension of DOE N 5400.9)
N 441.3	N 5480.11	Extension of Radiological Control Manual, Revision 1
P 442.1	SEN-39-92	DOE Occupational Safety and Health Incentives Program
O 442.1	3790.1B	Federal Employee Occupational Safety and Health Program

O 442.2	3791.2A	Federal Employee Motor Vehicle Safety Program

450 Protection of the Public and Environment. Includes various programs for ensuring public health and safety and protection of the environment.

P 450.1	SEN-22-90	DOE Policy on Signatures of RCRA Permit Applications
O 450.1	490	General Environmental Protection Program
O 451.1	491	National Environmental Policy Act Compliance Program

460 Packaging and Transportation. Includes transportation of hazardous and non-hazardous goods and materials, except for household goods.

O 460.1	4120	Packaging and Transportation Safety
O 460.2	1540.1A	Materials Transportation and Traffic Management
O 460.3	1540.2	Hazardous Material Packaging for Transport - Administrative Procedures
O 460.4	1540.3A	Base Technology for Radioactive Material Transportation Packaging Systems
O 460.5	5610.12	Packaging and Offsite Transportation of Nuclear Components and Special Assemblies Associated with Nuclear Explosives
O 460.6	5610.14	Transportation Safeguards System Program Operations

470 Safeguards and Security. Includes physical and personnel security, information security, security classification, and nuclear materials protection and accountability.

O 470.1	5630.11C	Safeguards and Security Program
O 470.2	5630.12A	Safeguards and Security Inspection and Assessment Program
O 471.1	5610.2	Control of Weapon Data
O 471.2	5630.8A	Safeguarding of Naval Nuclear Propulsion Information
O 471.3	5639.1	Information Security Program
O 471.4	5650.4	Unclassified Controlled Nuclear Information
O 471.5	5650.2B	Identification of Classified Information
O 472.1	5631.2D	Personnel Security Program
O 473.1	5632.1C	Protection and Control of Safeguards and Security Interests
M 473.1	M5632.1C-1	Manual for Protection and Control of Safeguards and Security Interests
O 473.2	5632.7A	Protective Force Program
M 473.2	M5632.7-1	Firearms Qualifications Courses Manual
O 474.1	5633.3B	Control and Accountability of Nuclear Materials

480 Work for Others and Technology Transfer. Includes work performed for other government agencies and private industry, and programs for transferring technology to the private sector.

P 480.1	SEN-30A-92	Staying on the Course for Technology Transfer at the Department of Energy
O 480.1	5800.1A	Research and Development Laboratory Technology Transfer Programs
O 481.1	4300.2C	Non-Department of Energy Funded Work (Work for Others)

500 BUSINESS AND SUPPORT SERVICES

510 Legal. Includes FOIA and Privacy Act, and any directives related to legal and patent/copyright processes.

O 510.1	1100.3	Office of Hearings and Appeals
O 511.1	1130.8A	Data Integrity Board
O 512.1	1700.1	Freedom of Information Program
O 512.2	1800.1A	Privacy Act
O 513.1	3733.1	Employee Participation in Political Activities

520 Finance. Includes special methods of financing programs.

P 520.1	SEN-34-91	Implementation of the Chief Financial Office Act of 1990
O 521.1	5700.5A	Policy and Management Procedures for Financial Incentives Program
O 522.1	2110.1A	Pricing of Departmental Materials and Services

530 Accounting.

O 530.1	2100.3A	Transfer of Contracts Between Departmental Elements
O 531.1	2100.8A	Cost Accounting, Cost Recovery, and Interagency Sharing of Information Technology Facilities
O 532.1	2200.2B	Collection from Current & Former Employees for Indebtedness to the United States
O 532.2	2200.11	Processing Garnishment Orders for Child Support and/or Alimony
O 533.1	2200.4	Accounting Overview
O 533.2	2200.5B	Fund Accounting
O 533.3	2200.6A	Financial Accounting
O 533.4	2200.7	Cost Accounting
O 533.5	2200.8B	Accounting Systems, Organizations, and Reporting
O 533.6	2200.9B	Miscellaneous Accounting
O 533.7	2200.10A	Accounts, Codes, and Illustrative Entries
O 534.1	3600.1B	Time and Attendance Reporting

540 Procurement and Grants Management.

O 540.1	1331.1D	Procurement and Assistance Data System
O 540.2	1331.2B	Departmental Business Instrument Numbering System
O 540.3	1332.2	Uniform Reporting System for Federal Assistance (Grants and Cooperative Agreements)
O 541.1	4200.4A	Selection, Appointment, and Termination of Appointment of Contracting Officers
O 541.2	4210.1C	Designation of Source Selection Officials
O 541.3	4220.4	Organizational Conflict of Interest Processing Procedures
O 542.1	4200.1C	Competition in Contracting
O 542.2	4210.9A	Unsolicited Proposals

O 542.3	4250.1A	Small Business/Labor Surplus Area Set- Aside and 8(a) Program Review Procedures
O 543.1	4210.7B	Indirect Cost Rate Responsibilities
O 544.1	5560.1A	Priorities and Allocations Program
O 545.1	1270.1	Funds-Out Interagency Agreements
O 546.1	1600.6A	Civil Rights Compliance in Federally Assisted Programs

550 Travel and Transportation. Includes transportation of non-hazardous goods and materials, motor pool management, and travel policies and reimbursement procedures.

O 550.1	1500.2A	Travel Policy and Procedures
O 551.1	1500.3	Foreign Travel Authorization
O 552.1	1500.4A	Travel Charge Card Program

560 Telecommunications and Data Systems. Includes procurement and management of telecommunications, telephone services, ADP equipment, software, maintenance, and services.

O 561.1	5300.1C	Telecommunications
O 561.2	5300.2D	Telecommunications: Emission Security (TEMPEST)
O 561.3	5300.3D	Telecommunications: Communications Security
O 561.4	5300.4D	Telecommunications: Protected Distribution Systems
O 562.1	1330.1D	Computer Software Management
O 562.2	1360.1B	Acquisition and Management of Computing Resources
O 562.3	1360.6A	Automatic Data Processing Equipment/Data Systems
O 562.4	1450.1C	Acquisition, Utilization, and Administration of Teleprocessing Services
O 563.1	1360.3C	Information Technology Standards
O 563.2	1360.8A	Analyses of Benefits and Costs for Information Technology Resources Initiatives
O 564.1	1450.3A	Call Control/Verification Programs and Authorized Use of Government Telephone Systems
O 564.2	1450.4	Consensual Listening-In to or Recording Telephone/Radio Conversations
O 565.1	1360.2B	Unclassified Computer Security Program

570 Administrative Services. Includes mail, file, office space management, reproduction, printing, library services, and general office services.

571.1	1430.1D	Scientific and Technical Information Management
571.2	1340.1B	Management of Public Communications Publications and Scientific, Technical, and Engineering Publications
572.0	1350.1	Audiovisual & Exhibits Management
573.0	1410.2	Mail Management
574.0	1430.4A	Library Services

580 Property Management. Includes personal and real property management, acquisition, and disposition.

Appendix VII
Examples of Electronically Shared Lessons Learned

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APPENDIX VII
EXAMPLES OF ELECTRONICALLY SHARED LESSONS LEARNED

Appendix VII includes five examples of lessons learned that have been posted on the DOE Lessons Learned List Server. These examples include one red (urgent) lesson learned requiring immediate attention; two yellow (caution) lessons learned requiring timely (but not urgent) attention; one green lesson learned providing information on a good work practice; and one blue lesson learned providing useful information that does not fit into any of the earlier categories. These categories are fully explained in the DOE Lessons Learned Technical Standard, available through the Office of Scientific and Technical Information, Oak Ridge, Tennessee.

EXAMPLE I: RED LESSONS LEARNED

Title: Roll-Up Door Component Fails

Identifier: 1995-SR-WSRC-LL-0003

Date: 5-4-95

Originator: WSRC, Operations Oversight & Compliance Site Lessons Learned Coordinator

Contact: J. W. McEvoy, WSRC, 803-644-5696

Name of Authorized Derivative Classifier: Gorman C. Ridgely

Name of Reviewing Official: Gorman C. Ridgely

Priority Descriptor: Red/Urgent

Functional Category: Occupational Safety and Health

Keyword: Door, Roll-Up, Near-Miss, Locking Pin, Safety

References: SR–WSRC-CMD-1995-0001

Lesson Learned Statement:
The following Lesson Learned is issued to provide preliminary information on the failure of a component for a standard type roll-up door. The component, a 25 pound tension wheel, detached from the top of the door and fell from a height of 15 feet, breached an office ceiling, and landed in an office trash can about 8 feet from three personnel.

Preventive Maintenance (PM) should be completed on a routine basis for roll-up doors. The PM program should include detailed inspections of the door, and of the mechanical and electrical components of the drive mechanism.

Discussion of Activities:
On April 10, 1995, a construction laborer was lowering a steel roll-up door when the tension wheel on the roll-up door assembly broke off without warning. The tension wheel, which weighs 25 pounds, fell 15 feet, broke through an adjacent office ceiling, and landed in a trash can sitting next to a chair in the office. The office was occupied by three employees; however, the personnel were about eight feet away from where the wheel landed.

Analysis:
A construction safety investigation revealed that the shaft that holds the tension wheel in place had been inadvertently cut by mechanical action between the shaft and a metal end cover plate. A locking pin that goes through the tension wheel and the shaft was missing. This condition allowed the shaft, which should be stationary, to rotate. The rotation of the shaft allowed the end cover plate to act as a saw on the shaft and cut through it. Routine preventive maintenance had not been performed on the door or the drive mechanism.

All roll-up doors in this area are being rigorously inspected and identified deficiencies are being corrected. Initial inspections of other doors have identified other serious vulnerabilities. The Site Lessons Learned Group is investigating and has brought this issue to management's attention.

Recommended Actions:
The Site Lessons Learned Group is working with the Senior Management Maintenance Council to address site-wide concerns and will issue either a Directive or Bulletin to all Divisions defining the necessary corrective actions to ensure personnel safety.

The investigation of this occurrence is continuing. Further information will be made available when the investigation is complete.

EXAMPLE II: YELLOW LESSON LEARNED

Title: Polycarbonate Bottle Failure

Identifier: 1995-RL-PNL-0001

Date: April 26, 1995

Originator: Westinghouse Hanford Co.

Contact: Roger A. Pollari, (509)376-4188 e-mail: RA_Pollari@PNL.gov

Name of Authorized Derivative Classifier: Terry Vail, (509)373-2092

Name of Reviewing Official: J. C. Bickford, (509)373-7664

Priority Descriptor: Yellow/Caution

Functional Category: 4.2 Worker Protection Objectives

Keywords: Naphthalene, aromatic hydrocarbon, polycarbonate, packaging, polymer, thermoplastic

References: None

Lesson Learned Statement:
Although polycarbonate is a high density, extremely tough and impact-resistant thermoplastic, that has an added feature of being transparent, it has explicit limitations in how it can be used. It is not recommended as a container for naphthalene.

This incident serves to illustrate the need for consulting proper references and/or experts to make sure of the compatibility of all materials and chemicals associated with a project; even the compatibility between a product and its proposed container.

Discussion of Activities:
A Ready SafeTM liquid scintillation cocktail with naphthalene mixture was prepared at Pacific Northwest Laboratories for a customer on February 8, 1995. The mixture was put into a polycarbonate 1-liter bottle and placed in the same box in which the Ready SafeTM cocktail start material was originally received. The package was then placed near the door of the lab to await customer pickup.

On February 9, 1995, staff members discovered that the polycarbonate 1-liter bottle had split open and some of the naphthalene/Ready SafeTM mixture had leaked onto the floor.

After receiving input from a number of sources, appropriate safety precautions and regulations were followed and the material was removed from the floor.

Analysis:
The presence of the naphthalene mixture was determined to be the probable cause of this incident for two reasons. First, as an aromatic hydrocarbon, naphthalene will chemically react with some polymers. Second, as naphthalene sublimes it will build up a small amount of pressure within a closed container. The combination of increasing pressure and weakened polycarbonate resulted in the bottle splitting open.

Recommended Actions: N/A

EXAMPLE III: YELLOW LESSON LEARNED

Title: Heat Expansion May Cause Electrical Leads to Slip Off Aluminum Termination Lugs

Identifier: 1995-OH-WVNS-0001

Date: May 23, 1995

Originator: West Valley Nuclear Services Co., Inc. (WVNS)

Contact: Meg Hoffman, Operations Support (716)942-4166

NAME OF AUTHORIZED DERIVATIVE CLASSIFIER: N/A

Name of Reviewing Official: N/A

Priority Descriptor: Yellow/Caution

Functional Category: 4.0 Work Processes

Keywords: Material Compatibility, Electrical, Termination Lugs, Heat Expansion

Reference: OH-WV-WVNS-CF-1995-0010

Lesson Learned Description:
Material compatibility is of the utmost importance in equipment operation. Although aluminum termination lugs are acceptable per the National Electric Code, they may not be adequate in all equipment applications.

Discussion:
During a routine weekly switching of exhaust blowers in the WVNS Head End Ventilation (HEV) system, one of the two primary electric motor driven exhaust blowers failed to restart. The system automatically returned to the backup blower and continued to operate. Troubleshooting of the system revealed that one of the electrical leads had slipped off the aluminum termination lugs to the motor, due to heat expansion/thermal cycling.

Analysis:
The exhaust blower motors generate a large amount of heat during operation. This causes heat expansion/thermal cycling and can cause the electrical leads to slip off the termination lugs. WVNS Electrical Engineering personnel stated in the occurrence investigation meeting that termination lugs used in this type of application should be made of copper to prevent heat expansion to the greatest extent possible, even though aluminum termination lugs are acceptable for installation and use per the National Electric Code.

Recommended Actions:
WVNS Operations and Maintenance personnel upgraded the affected motor blowers with copper termination lugs, connectors, capacitors and motor leads. In addition, termination lugs and connections on similar equipment in other site facilities were inspected for similar situations.

Follow-up Actions:
Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report, please notify Meg Hoffman, WVNS Operations Support at (716)942-4166 or by electronic mail at hoffman@tis. inel.gov of any action taken as a result of this report, or of any technical inconsistencies you find. Your feedback is important and appreciated.

EXAMPLE IV: GREEN LESSON LEARNED

Title: Centralized Consolidation/Recycling Center

Identifier: 1995-RL-WHC-0002

Date: May 11, 1995

Originator: Westinghouse Hanford Co.

Contact: Lynn St. Georges; (509)376-4652 [phone], (509)376-2816 [FAX], lynn_t_st_georges@rl.gov [e-mail] or John Bickford; (509)373-7664 [phone], (509)373-6120 [FAX], John_C_Bickford@rl.gov [e-mail]

Name of Authorized Derivative Classifier: Terry Vail, (509)373-2092

Name of Reviewing Official: J. C. Bickford, (509)373-7664

Priority Descriptor: Green/Good Work Practice

Functional Category: 435 Waste Management/D&D/ER

Keywords: Hazardous waste, consolidation center, recycling

References: CENTRALIZED CONSOLIDATION/RECYCLING CENTER, WHC-EP-0863, by L. T. St. Georges and A. D. Poor

Lesson Learned Statement:
A centralized consolidation facility for "nuisance" hazardous wastes can eliminate many satellite accumulation areas, reduce the number of hazardous waste containers generated, and significantly reduce operating expenses.

Discussion of Activities:
There are approximately 175 separate locations on the Hanford Site where dangerous waste is accumulated in hundreds of containers according to compatibility. Materials that are designated as waste can be kept out of the waste stream by establishing collection points for these materials and wastes and then transporting them to a centralized consolidation/recycling center (hereinafter referred to as the consolidation center). Once there the materials are prepared for offsite recycling or consolidated for disposal.

Removing batteries, partially full aerosol cans, and DOP light ballasts ("nuisance" wastes) from the traditional waste management approach would eliminate 89 satellite accumulation areas from the Hanford Site (43 for batteries, 33 for aerosols, and 13 for DOP ballasts). Eliminating these 89 satellite accumulation areas would reduce by hundreds the total number of containers shipped offsite as hazardous waste (due to lack of consolidation at the Hanford Site's TSD Facility).

Lead-acid batteries are excluded because they already are collected and sent offsite for recycling. Items with radiological contamination are not considered. Other waste streams will continue to be evaluated as candidates for the consolidation center, including both regulated and non-regulated waste streams.

Examples include shop rags, fluorescent light tubes, and incandescent lamps. In most cases, offsite recycling will occur as an alternative to disposal.

Analysis:
The actions described in this Good Work Practice are consistent with reinventing government, the U.S. Environmental Protection Agency's (EPA) draft Universal Waste Rules for these "nuisance" and common waste streams, The Waste Minimization National Plan (EPA530-R-94-045, November 1994), Federal Executive Orders, and Washington State Law (RCW 70.105). They are endorsed by the Washington State Department of Ecology.

Recommended Actions:
DOE Sites with multiple facilities generating their own waste steams should work with their state regulators to implement a similar system.

EXAMPLE V: BLUE LESSON LEARNED

Title: Lessons Learned from Y-12 Plant Power Outage

Identifier: L-1995-OR-MMESY12-0301

Date: 5/5/95

Originator: Martin Marietta Energy Systems, Inc.; Y-12 Plant (E. C. Hunt)

Contact: J. C. Bell (615)576-8011

Name of Authorized Derivative Classifier:

Name of Reviewing Official:

Priority Descriptor: Blue/Information

Functional Category: 4.1–Operations

Keywords: Electrical, Outage, Switching, High Voltage

References: "Type C Investigation of Y-12 Plant Electrical Power Failure, November 11, 1994", Prepared by Oak Ridge Y-12 Plant, January 20, 1995.

Facilities Management Organization Standing Order 047-11-94, "Electrical System Operation Compensatory Measures".

"Off-Shift Emergency Switching compensatory Directive", Issued November 18, 1994

Lesson Learned:
Electrical switching operations can be performed with a higher degree of safety and with a reduction in the potential for power outages and damage to equipment by adhering to the principles of conduct of operations. This increase in Safety and reliability can be achieved by implementing:

1. adequate identification and control of all applied personnel protective grounds,

2. formal transfer of control for system equipment,

3. an assessment of equipment readiness,

4. procedures to define the roles and responsibilities of personnel, and

5. a system to ensure communications among all participants.

Discussion:
On Friday, November 11, 1994, members of the Y-12 Plant Electrical and Electronics Maintenance Department were performing an approved switching operation on the 161-kilovolt (kV) Distribution System when the system faulted, resulting in the loss of all electrical power to the Y-12 Plant. Two sets of ground cables, installed as personnel protective equipment (PPE), had been left attached to Transformer 599. As the switching sequence progressed, the primary switch on the transformer was closed and the electrical system was tripped in the Elza I switchyard resulting in a total loss of normal AC power to the plant.

Analysis:
The purpose of the planned 161-kV electrical switching operation performed on Friday, November 11, 1994 was to (1) phase lines Y-12-1 and Y-12-2; (2) re-establish the normal power supply configuration for the plant; and (3) re-energize a 50-MVA (megavolt amperage) transformer in preparation for it being placed back in service.

NOTE: The transformer had been out of service for energy conservation since August 23, 1994, and a High Voltage Hold Off Order had been issued on September 22, 1994 for oil reclamation. Two sets of personnel protective grounding clusters were applied to the primary and secondary of the transformer at this time.

On October 14, the final test of the transformer oil confirmed that it was satisfactory for use and the oil reclamation effort was shut down. The grounds were still in place as the electrical switching operations were being performed on November 11. These grounds went unnoticed by the field personnel performing the switching. Also, the electrical dispatcher failed to notice that the "grounds applied" box was checked on the high voltage tag order indicating that two sets of grounds were applied. When the primary circuit switcher feeding the transformer with grounds was closed, the entire Y-12 Plant was de-energized as both 161 kV lines feeding the plant were tripped at the Elza I primary switchyard. Also, one of the voltage regulating transformers in the Elza I switchyard received internal damage to the windings due to the high current surge generated by the fault.

An investigation team was convened to perform a Type C Investigation in accordance with Department of Energy Order 5484.1 requirements. The Team identified the following as probable causes for the incident: inadequacies in planning, job control and communication, administrative controls including procedures, and human factors issues.

Recommended Actions:
Several compensatory measures have been initiated by the Y-12 maintenance organization and the Power Operations and Maintenance Department:

1. A standing order was issued on compensatory measures for high-voltage switching, tagging, use of grounds, etc. This order includes measures to require:

a. a review of all high voltage switching orders by the Y-12 Electrical Dispatcher, the originator, and the Field Switching Supervisor;

b. review of the switching order by the Field Switching Supervisor with the high voltage qualified electricians who will perform the actual switching activities;

c. field verification by the Switching Supervisor of the condition of the equipment prior to and immediately following each switching activity;

d. an overtag be provided by the Electrical Dispatcher to the Field Switching Supervisor and to the Operations Supervisor, Maintenance Supervisor, Engineer, Service Contract Coordinator, or other appropriate party responsible for equipment/system activities;

e. a "flag" to be hung on the power system status board indicating when personal protective grounds are installed on the high voltage distribution system; and

f. the words "Grounds Applied," along with the number of ground sets installed, to be added by the Field Switching Supervisor on each High Voltage Absolute Hold-Off Tag installed for that tag order under which the grounds were applied.

2. A directive was issued describing off-shift emergency switching operations. This directive states that any emergency switching required during the off-shift hours will be performed only after call-in of an authorized field switching supervisor and one of three designated managers.

3. An "All-Hands" meeting was conducted for all Power Operations and Maintenance Department (department) personnel to cover the incident and to review the new requirements established by the new standing order and directive.

4. The department conducted a review of all existing high voltage tag orders to identify all previously installed system grounds.

5. The Contract Mentor assigned to the department conducted an assessment of Conduct of Facilities Operations as related to the power system.

Follow-up Action:
Information in this report is accurate to the best of our knowledge. As a means of measuring the effectiveness of this report please notify Carol Bell at (615)576-8011 or by electronic mail at belljc@ornl.gov of any action taken as a result of this report or of any technical inaccuracies you find. Your feedback is important and appreciated.

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Appendix VIII
Lessons Learned Transmittal Documents

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APPENDIX VIII
LESSONS LEARNED TRANSMITTAL DOCUMENTS

For internal dissemination of lessons learned information, organizations may use electronic and/or non-electronic methods. This appendix provides examples of newsletters, bulletins, and other types of publications that are used to disseminate lessons learned information. This appendix contains:

- Westinghouse Savannah River Company, SRS Lessons Learned Bulletin,Oversight and Compliance Integration Section Bulletin, ESH-061-95-0028, Westinghouse Savannah River Company, dated February 1, 1995, Volume 4, No. 1.
- Westinghouse Savannah River Company, SRS Lessons Learned Digest, Oversight and Compliance Integration Section Bulletin, ESH-OCI-950043, Vol. 3, No. 2, dated February 1995.
- Westinghouse Savannah River Company, Lessons Learned Newsletter, Site Lessons Learned Program's Digest of Nuclear Industry Information, ESH-OCI-950120, Vol. 7, No. 8, dated week ending April 14,

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APPENDIX VIII
LESSONS LEARNED TRANSMITTAL DOCUMENTS
(Description of Site Lessons Learned Program Transmittals)

Appendix VIII-B provides examples of Savannah River Site Lessons Learned Program transmittal documents. Three types of transmittal documents are provided:

- Westinghouse Savannah River Company, SRS Lessons Learned Bulletin
- Westinghouse Savannah River Company, SRS Lessons Learned Digest
- Westinghouse Savannah River Company Lessons Learned Newsletter

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Westinghouse Savannah River Company ESH-OCI-95-0028

SRS LESSONS LEARNED BULLETIN

Oversight and Compliance Integration Section Bulletin
Vol. 4, No. 1February 1, 1995

This bulletin is issued by OCIS to alert SRS personnel to important SRS safety and performance degradations which are recurring or have a high significance. **DIVISION LESSONS LEARNED COORDINATORS ARE EVALUATING THE NEED FOR CORRECTIVE ACTIONS AND TRACKING THEIR SUBSEQUENT IMPLEMENTATION.** The bulletin is also disseminated to WSRC level 5 managers and above and DOE-SR management to enhance lessons learned awareness and training.

CRANE BOOM BRAKE FAILURE

On November 28, 1994 at 0715, a Crane Subcontractor started a crane (Figure 1) being used for construction of a new facility in H Area. During a routine morning checkout procedure, the boom brake system apparently malfunctioned and would not hold the boom. The boom lowered to the ground causing significant damage to the boom and the jib and minor damage to some plumbing supplies in the area (Figure 2). Although no personnel injuries occurred, the potential for serious injury existed because the boom struck the ground approximately 8 feet from (1) an occupied Port-O-Let, and (2) a 480 volt power source (Figure 3).

The construction area was very congested and the operator correctly determined that the specific area he used for the testing would be the safest. Although the construction area was barricaded as required by the Employee Safety Manual, Manual 8Q, there were no means in place to prevent construction personnel from entering the direct area where the boom checkout was taking place. Barricades for crane boom checkout areas are not currently addressed in either the Employee Safety Manual or the Site Hoisting and Rigging Manual, WSRC-TM-90-7.

Investigations by the subcontractors involved indicate the cause of the occurrence to be wet brakes; however, further investigation by WSRC is continuing to determine if other causes may have contributed to the occurrence. A WSRC Root Cause Analysis is in progress and final corrective actions will be issued following its completion.

The crane involved was a conventional 90 ton capacity, rubber tired, "Lorain," friction brake operating crane with a 130' boom and a 30' jib. The crane had been through the vendor's shop for a safety check prior to being sent to SRS. The facility construction work is being performed by a subcontractor who hired another subcontractor to perform the crane work.

The routine morning checkout of the crane consisted of a functional check of all hoisting mechanisms including the hoist lines, boom hoist, brakes, and clutches. This checkout is always done regardless of the weather conditions; however, it helps dry out the equipment if moisture is present. The crane had been secured for the Thanksgiving weekend holiday (November 24-27) and rain and cold temperatures during that period caused an anticipated moisture buildup in the crane braking equipment. The crane operator successfully raised and lowered the hoist lines three times and the boom twice before the failure occurred. There is no standard number of times required to exercise the equipment, it is left to the operator's best judgement.

For more information, contact J.E. Aggas at 803-644-5963.

Immediate actions to correct this problem included replacing the conventional friction brake type crane with one that operates on hydraulics. The hydraulic type of crane cannot have the same type of failure that occurred with the friction type crane. In addition, the subcontractor modified their Safety Plan to require a qualified flagman to be used during all crane operations. This is to include normal work and any checkout required.

LESSONS LEARNED

All SRS personnel must be alert to potential safety hazards in their work areas or areas that they visit. This is particularly important for personnel working in or visiting construction areas. Use technical inquisitiveness throughout your work day to help ensure that adequate safety defense-in-depth exists.

Crane operators should check all structures near their test area, where personnel may not be visible from the crane controls, to ensure that the areas are clear of personnel, or that personnel are aware of the crane operations and adequate safety precautions have been taken. The WSRC TM-90-7 (SRS Hoisting and Rigging Manual) provides guidance relevant to the proper operations requirements for Mobile Cranes. A revision to this manual is being prepared to emphasize the importance of maintaining the area under the boom clear of personnel during checkout activities, as well as, normal operations.

Personnel working in the vicinity of cranes should be alert to crane movements and take measures to avoid being below the crane boom. It is a safety restriction/requirement that the crane operator ensures that no live loads travel over any personnel at any time.

The WSRC Employee Safety Manual 8Q, Procedure 9, Barricades, does not specifically require that crane boom swing areas be barricaded to prevent pedestrian traffic. It does specifically require the swing radius of the rear of a rotating crane to have barricades whenever an operator is at the controls and work is in progress (This barricade was present at the time of this occurrence). The procedure also requires a warning barricade in any area where construction or maintenance work is in progress and control of pedestrian traffic is necessary. Facility managers or construction managers should evaluate the use of barricades for crane operations and checkouts, and ensure barricades are always placed when determined to be necessary.

Although not a problem in this particular occurrence, it should be emphasized that WSRC Subcontract Technical Representatives (STRs) must know the safety requirements that apply to their work and ensure the subcontractors know and follow those requirements. Note: For Mobile Crane operations STRs should refer to guidance as provided by the WSRC-TM-90-7 Manual, the Area Rigging Authority, and Safety personnel.

ACKNOWLEDGMENT

The Site Lessons Learned Program appreciates the assistance of Mike Berry, Site Rigging Authority, Mark Szymanski, Subcontract Technical Representative, and Mark Mahoney, H Tank Farm Waste Removal Operations Manager, in preparing this Bulletin.

For more information, contact J.E. Aggas at 803-644-5963.

Westinghouse Savannah River Company ESH-OCI-950043

SRS LESSONS LEARNED DIGEST

Oversight and Compliance Integration Section Bulletin

Vol. 3, No. 2 Issue No. 25 February 1995

This digest is issued by OCIS to: 1) serve as a general training resource for enhancing job performance by increasing personnel awareness of the process and personnel safety lessons (positive and negative) that fellow SRS employees have learned, and 2) provide a vehicle to all SRS employees for the sharing of lessons they learned on the job at SRS. NO RESPONSE IS REQUIRED BY THIS DIGEST.

PROCEDURE WALKDOWN DETECTS VALVE LABELING ERROR

On November 11, 1994, an ITP Tank Operator walked down a special procedure prior to performing it to ensure appropriate components could be located and all the procedure steps were accurate, clear, and could be executed. During the course of the walkdown, the operator detected a discrepancy between the Process and Instrument Drawings and two valves in the Tank 40 Gang Valve House. Subsequently, the Day Shift Manager compared the field installation to the system drawings and determined that the labels on the two valves were reversed. The valve labeling was subsequently corrected.

A lockout involving the two valves, which was in place at the time of the discovery, was determined to be incorrect because of the previous misidentification of the two valves. The person performing the lockout had placed the locks correctly based on the valve labeling at the time of the lockout. Similarly, independent verification of the lockout also relied on the valve labeling.

Manual 2S, Procedure 1.4, Paragraph C, specifies that procedure walkdown is the preferred method to validate new or revised procedures. The intent of the walkdown is to identify and resolve potential problems with the procedure. In this occurrence, the walkdown detected a labeling error on two valves. As a result of the procedure walkdown, potential safety and process difficulties (including a lockout in progress at the time of the occurrence) resulting from the incorrect valve identification were eliminated.

LESSONS LEARNED

- New and revised procedures should be validated by walkdowns prior to their use unless ALARA, safety considerations, facility status, or equipment inaccessibility make walkdowns impracticable. Manual 2S, Procedure 1.4, Paragraph C

- Walkdown should also be considered for existing, approved procedures if they are infrequently used, personnel performing the procedures are unfamiliar with the evolution being performed by the procedure, or the procedure is complex.

For more information, contact R.E. Painter at 803-644-5706.

INADEQUATE LIGHTNING PROTECTION

The Defense Nuclear Facilities Safety Board (DNFSB) and a Fire Hazards Analysis (FHA) identified lightning protection concerns for F Canyon and the FB-Line. To address the concerns the Fire Protection Analysis Group of the Safety Engineering Department completed an engineering study of the lightning protection equipment and systems installed on the structures of F Canyon, FB-Line, F-Area Fan house and exhaust stack, and the canyon exhaust fan diesel generator building. The study compared the existing installed equipment and designs to the requirements and installation practices provided in the National Fire Protection Association Standard 780, Lightning Protection Code.

The results of the study concluded that equipment and components of the lightning protection system for the FB-Line were incomplete, poorly maintained, improperly installed, or missing. Therefore, the facilities of FB-Line are more vulnerable to adverse lightning events due to these deficiencies. Some general deficiencies included the following:

- Structures and equipment on the canyon roof with no lightning protection
- Equipment installed on the roof without basic grounding or bonding to other roof-top equipment
- Ground conductors improperly installed
- No equipotential bonding of nearby metallic components or equipment
- Ground conductors cut or missing; no connections to ground
- Components on drawings that are missing or installed differently from the design, without "as built" changes
- Lightning down conductors not properly installed to ensure shortest path to ground
- Equipment installed in places of high lightning potential with little or no concern for lightning protection for equipment or personnel

Several of the identified deficiencies have the potential to cause an unacceptable level of risk to the facilities or personnel. One example includes the lack of adequate grounding and down conductors for the communication tower on top of the FB-Line elevator/stair tower. A lightning strike to this tower has no direct path to ground to dissipate the lightning stroke current and could sideflash to the small enclosure on the tower, to the guard rail on the tower roof, or to the interior steel stair structure. This uncontrolled flow of electricity increases the potential to damage the structure and endanger facility personnel.

Because the risk to the facility and personnel might have been greater than previously recognized, an unreviewed safety question (USQ) screening was performed for the FB-Line facilities to determine if safety margins were less than those assumed in the Safety Analysis Report (SAR). The screening detected no unreviewed safety questions, and corrective or compensating actions were not required.

Other facilities may have concerns that their lightning protection is not adequate or may not satisfy the requirements of their SAR. **Contact M. F. Perks (952-8068) or D. E. McAfee (952-8058), Fire Protection Analysis, for more information or to schedule an evaluation of existing lightning protection systems.**

LESSONS LEARNED

- Facilities may be damaged and personnel endangered by inadequate lightning protection. Each facility should ensure that their lightning protection meets the requirements of NFPA 780.

For more information, contact R.E. Painter at 803-644-5706.

- SAR requirements may not be met if lightning protection is inadequate or not installed as designed.

EXCAVATION DIFFICULTIES

On July 22, 1994, an excavator installing a new fiber optic telephone cable in C Area struck and severed a single phase of a 13.8 kV power line with a backhoe. The presence of the line was known, and the excavator had hand dug the area to expose the red dye concrete marking the location of buried electrical cable. One phase of the power line was located by hand digging on one side of the concrete. The backhoe operator assumed that the exposed cable was the only interference and began excavation. In reality, each of the three 13.8 kV phases was routed in a separate cable. Fortunately, the cable had been de-energized by the Power Department to support this work, and no injuries occurred.

> The Work Clearance Permit for the excavation required that an area three feet on either side of the concrete be hand dug. Hand digging was completed only on one side. The excavator was not a holder on the lockout for this job, which is a violation of the Manual 8Q, Procedure 32, Hazardous Energy Control.

This occurrence illustrates the greatest concern of excavation activities: what lies underground where digging is to occur? Every reasonable effort must be expended to determine what lies underground before excavation is begun. Improper excavations can endanger personnel safety, interrupt services and communications, impair operations, and result in significant costs to effect repairs.

A survey of occurrence reports issued since January 1, 1991, revealed that excavation activities have inadvertently cut four power lines, six signal cables, and ten water lines. An example of each follows:

- An excavator broke a 6-inch water line near the 183-K water plant while digging to obtain fill dirt with a backhoe on October 28, 1991. All domestic, filtered, service clarified, and deionized water was secured in Building 105-K, and a 5000-gallon water tanker was brought into the area for backup fire protection. Investigation revealed that the equipment operator was digging below grade without a spotter or authorization to obtain fill dirt in this manner.

- On September 30, 1993, the fire alarm system for 607-41T, Sanitary Treatment Facility, was interrupted when the conduit containing the 24 volt signal wires was damaged during excavation. The cause of the event was attributed to a failure of current prints to include the 24 volt fire alarm system in the TNX area.

- Two energized underground 13.8 kV power cables were damaged during soil boring in K Area on August 16, 1990. Delays in actions to repair and protect the damaged cables from moisture intrusion resulted in estimated replacement costs exceeding one million dollars and the generation of an Off-Normal Occurrence Report on January 7, 1991. Some of the causes of this occurrence include the following:

  - Existing Safety Manual procedures did not adequately delineate specific requirements for excavation/drilling
  - Print/drawing reviews were less than adequate
  - Cables were not detected by ground penetrating radar

- Verbal communications between the excavator and facility personnel were inadequate

For more information, contact R.E. Painter at 803-644-5706.

In addition to problems encountered cutting cables and pipes, excavation activities can pose other hazards:

- On September 28, 1994, excavation to install a new communications system in the F-Tank Farm inadvertently uncovered the F-H Inter Area Transfer Lines. Fortunately, no transfers were in progress (reducing potential exposure), and the lines were not cut by the excavation.

- At ITP on July 15, 1991, a construction employee fell into an excavation and bruised several ribs.

- On January 31, 1995, a partial trench cave-in occurred during installation of telephone lines at SRTC. A worker, whose left leg was struck by falling dirt, received bruises on his knee and was assigned to light duty following the accident.

To facilitate proper excavation techniques, Manual 8Q, Procedure 34, Excavations and Trenches, has been revised. The new revision greatly expands terms and definitions related to excavations and specifies in increased detail the minimum safety requirements necessary to perform excavations. All personnel performing excavations and trenching activities on the SRS must use this procedure, including construction, vendors, subcontractors, consultants, and site support groups such as E&CS or SRTC.

LESSONS LEARNED

- All personnel involved with excavation activities should be aware of the potential hazards associated with excavation at SRS.

- All personnel performing excavations at SRS must comply with the minimum safety requirements specified in the Employee Safety Manual 8Q, Procedure 34.

- Personnel utilizing subcontract personnel to perform excavations must ensure that those personnel follow Manual 8Q, Procedure 34. Normally this is the responsibility of a Subcontract Technical Representative. The Subcontract Safety Team in the Occupational Safety & Hygiene (OSH) Department is responsible for safety oversight of all subcontract employees at WSRC. **Contact your area safety engineer or Reuben Raysor, Manager, Subcontract Safety Team at 644-5663 for resolutions of concerns about subcontractor safety.**

- Personnel planning excavation work must realize that prints have not been adequately controlled in the past and may not reflect all buried power lines, signal cables, or water lines. Other methods, such as ground penetrating radar, should be considered, along with adequate print/drawing studies, if any uncertainty exists.

- Personnel performing excavations around electrical power lines must realize that multiphase electrical sources may use a separate cable to conduct each phase.

PROPER FORKLIFT OPERATION NECESSARY TO PREVENT DAMAGE, OPERATIONAL DIFFICULTIES

Forklift problems are not new to SRS nor the rest of the DOE complex. The October 1993 SRS Lessons Learned Digest documented forklift difficulties at SRS, but recent occurrences at SRS and other locations within the complex illustrate that forklift problems continue.

- While attempting to move a large shipping container inside Building 704-B with a forklift on April 29, 1994, a fire sprinkler head was struck by the container, and water spray initiated from the damaged sprinkler head. The spray wet two personnel at the scene, but no injuries occurred. The initiation of the water spray sounded a fire alarm, and the facility was evacuated.

  Investigation revealed that the ceiling provided 8' 10" clearance at the entrance to the building, but reduced to 7' 11" at approximately 20 inches into the room. Additionally, the sprinkler, with guard, protruded about four inches down from the ceiling. The forklift driver misjudged the clearances available.

- An investigation of a Victoreen Area Monitor Packet (VAMP) alarm near HDB-1 in the H-Tank Farm on June 29, 1994, revealed that the alarm was initiated when a B-25 radioactive waste box was moved near the monitor by a forklift truck.

- Two employees at an Oak Ridge facility attempted to relocate materials from a storage room to a different location on September 9, 1993. The protective overhead guard of the forklift struck the concrete lentil of the doorway, and the forklift became wedged in place. No injuries occurred, but the impact caused a 24-foot long crack in the block wall mortar joint above the doorway.

  Investigation revealed that two types of forklift were used in the facility. The forklift involved in this occurrence is 3 inches taller that the other type. Additionally, this doorway is shorter than other doors in the facility. No height warning signs were posted on either the forklift or the doorway to alert operators of clearance restrictions.

- While relocating pallets of waste drums on October 1, 1993, a Hanford employee backed a forklift into a building beam causing damage to the beam. Investigation revealed that the forklift operator did not have a clear field of vision because the forklift inspection sheet, which was posted in the rear side window of the forklift, obscured the view of the beam.

LESSONS LEARNED

- Forklift operators should remain alert and aware of their surroundings at all times while operating forklifts or other heavy equipment. This is particularly true when backing the equipment. Operators should ensure that clearances are adequate throughout the intended path of travel with the forklift. Pay particular attention to protrusions from walls and ceilings.

- Personnel in the vicinity of operating forklifts must be vigilant because of possible restricted vision of the forklift operators.

For more information, contact R.E. Painter at 803-644-5706.

- Personnel should be aware of differences between types of forklifts. Slight differences in height, width, or length of the forklift can cause significant clearance problems.

For more information, contact R.E. Painter at 803-644-5706.

- Do not place objects, such as inspection stickers, on forklifts in such a manner that visibility from the forklift is obscured.

- Forklifts must not be unloaded at locations that will interfere with passageways, evacuation routes, or safety and monitoring equipment. Personnel directing the placement of loads should be aware of possible effects the load may have on that location (initiating alarms, for example) or that the location may have on the load (damage caused by the presence of water, for example).

Westinghouse Savannah River Company ESH-OCI-950120

LESSONS LEARNED NEWSLETTER

Site Lessons Learned Program's Digest of Nuclear Industry Information

Vol. 7, No. 8 Week Ending April 14, 1995

This newsletter is developed and issued by the Site Lessons Learned Program Group of the Oversight & Compliance Integration Section for the purpose of informing SRS personnel of pertinent general information, activities, and good practices associated with the DOE and commercial nuclear industries. It is deemed important that SRS personnel remain cognizant of industry issues and the continuing change in public and regulatory expectations. **NO RESPONSE IS REQUIRED BY THIS NEWSLETTER.**

IN THIS WEEKS NEWSLETTER:

LANL DEVELOPS PLUTONIUM RECOVERY TECHNIQUE
PREFABRICATED HUTS IMPROVE WASTE MANAGEMENT
STATES, EPA DRAFT PLAN FOR REDUCING OVERSIGHT
CRACKED TUBES CLOSE REACTOR INDEFINITELY
NRC APPROVES DECOMMISSIONING PLAN FOR RANCHO SECO
FFCACT PROPOSED SITE TREATMENT PLANS
HEAT STRESS MANAGEMENT
WORKER PROTECTION ORDER
THE NUCLEAR EXCHANGE - RADIATION PROTECTION
ITALIAN SCIENTISTS CLAIM COLD FUSION BREAKTHROUGH
UTILITIES TO PURSUE MESCARLO MRS

GENERAL NUCLEAR INFORMATION

(The following publications are in the SRTC Library)

- **MATERIAL PROCESSING**

LANL DEVELOPS PLUTONIUM RECOVERY TECHNIQUE

Weapons Complex Monitor - March 23, 1995

Los Alamos National Laboratory (LANL) scientists have developed and tested a new technology they say can ***recover plutonium from nuclear weapon components without generating large quantities of waste.*** The Hydride Dehydride Recycle Process is being touted as an alternative to traditional acid leachate techniques that produced large quantities of mixed waste. The hydride-dehydride technology takes advantage of plutonium's affinity for chemically bonding with hydrogen in a two-step process that, in prototype tests at Los Alamos, has been shown to offer an essentially waste-free option.

HELP THE SRS RECYCLE EFFORT -- REMOVE STAPLE AND FRONT PAGE, RECYCLE WHITE PAPER

For information regarding the Lessons Learned Newsletter, contact J.H. Gilmore at 644-5573
To pose a question on the Nuclear Network, contact R.E. Painter at 644-5706

The recovery process is initiated by placing a plutonium-containing weapon component in the upper portion of a vacuum chamber called the cold zone. An attached furnace tube with a resistive heating element is located directly below the nuclear component, a part of the device called the hot zone. Hydrogen gas, supplied by a uranium hydride storage bed, is emitted into the vacuum chamber. The hydrogen gas hydrides some of the plutonium from the weapon component. The plutonium hydride then falls into the hot crucible, thus initiating the release of hydrogen gas - the dehydriding part of the operation. The hydrogen gas released from the hydride is available to hydride more of the plutonium located in the cold zone, and the recycle reaction continues, cycling until the plutonium is completely extracted from the weapon component. Melting and subsequent cooling of the plutonium powder formed in the lower chamber produces a solid plutonium metal product that is ready for storage.

The hydride-dehydride technology, which is already in regular use at Los Alamos for limited component destruction, generates far less waste than the old aqueous processing techniques. The old technique generated 400 kilograms of mixed waste per pit compared to zero for the new technology; 200 liters of caustic and acidic waste compared to zero. The new technology also requires less glove box space, less time, and results in lower average worker radiation exposure.

- **WASTE**

PREFABRICATED HUTS IMPROVE WASTE MANAGEMENT

The Safety & Health Connection - Spring 1995

Westinghouse Savannah River Company (WSRC) is saving money and improving waste management by using prefabricated radiological containment structures. ***The huts are much less expensive than the structures built onsite.*** Supported by external frames, the new constructions offer improved structural integrity and reduce the potential spread of contamination. The containment structures are complete with airlocks, floors, walls, and roofs. They are prefabricated with flame-resistant, compactable nylon reinforced plastic, or other DOE-approved Material. A lightweight, reusable external support frame, which can be scanned for radionuclides, is used. The prefabricated units are stronger and more capable of withstanding wind and water damage than their predecessors.

The huts are more easily and safely packaged for disposal to reduce overall waste. After a job is completed, the hut is cut free of its support frame and collapses. Internal air is removed by the same exhausting blower that maintained negative air pressure during operation, preventing a release of radiological contaminants during disassembly. The external frame can be removed from the area and stored for reuse. All parts of the structure, except the support frames, can be incinerated. The use of the radiological containment structures has yielded no external contamination during approximately 200 operations and cost savings of over $7 million.

- **ENVIRONMENT**

STATES, EPA DRAFT PLAN FOR REDUCING OVERSIGHT

Inside E.P.A. - March 31, 1995

EPA and state officials are developing plans to significantly scale back federal oversight of state environmental programs, ***creating a new set of goals upon which states' achievements and ability to administer programs will be judged.*** The agency plans to unveil the new oversight procedures as a major agreement with state environmental commissioners at a state-EPA meeting in May, and states would be required to develop workplans reflecting the new goals by 1997.

The plans call for something similar to the memoranda of agreement which headquarters is developing with regional offices to set enforcement targets. The agreements with states would be based on three tiers of goals: national goals, such as protecting water bodies or limiting air emissions; program-specific goals, such as minimum procedural requirements for assuring drinking water quality; and state-specific goals, such as protecting a particular resource or ecosystem. EPA is trying to focus the agency's oversight on environmental impacts instead of bureaucratic procedures, and as such, the oversight reform effort will retain for the agency those environmental projects that inherently require federal control.

- **REACTORS**

CRACKED TUBES CLOSE REACTOR INDEFINITELY

ENR - April 3, 1995

Maine Yankee officials have decided to keep the 23-year-old nuclear power station closed indefinitely because of defects discovered in the pressurized water reactor's steam generator tubes. During a refueling in January, officials found 250 cracked pipes. Additional sample tests using a high-tech probe indicated that up to ***50% of the 17,000 tubes may be faulty.*** Solutions include adding zinc to the water, sleeving the pipes, or replacing the generators, at a cost of $110 million to $150 million. There are 71 other pressurized water reactors in the U. S. The NRC has issued a notice about Maine Yankee's problems to other licensees.

REGULATORY POLICY AND DECISIONS

NRC APPROVES DECOMMISSIONING PLAN FOR RANCHO SECO

Nuclear Energy Overview - April 3, 1995

Decommissioning activities at Rancho Seco can proceed following the NRC's recent approval of the cleanup plan. Based on the plan, ***the decommissioning process is expected to cost $344 million, plus $50 million more for restoration of the site.*** Spent fuel management at the site is estimated to cost an additional $15 million, and removal of the spent fuel to a dry cask storage system is expected to begin in April. Construction of the storage facility has already begun. The decommissioning plan would place the plant in safe storage for less than 20 years, then decontaminate and dismantle it for unrestricted use of the site.

FFCACT PROPOSED SITE TREATMENT PLANS

Defense Programs Health, Safety, and Environment Status Report - March 1995

To satisfy requirements of the Federal Facility Compliance Act (FFCAct), ***Proposed Site Treatment Plans (PSTPs) are being prepared by impacted DOE sites for the treatment of mixed waste.*** The PSTPs will be released to each site's regulator on April 6, 1995, and Notice will appear in the Federal Register for comments from the public.

DOE has prepared a total of 37 PSTPs for 40 sites located in 20 states. Once the PSTPs are released, each DOE site will begin negotiations with their state or EPA Regional Office regulator to work towards an agreement to approve the Site Treatment Plans (STPs). By October 5, 1995, each site must have a consent order in place, signed by both DOE and the site's regulator stating the "path forward" in complying with the STPs and listing enforceable milestones and target dates.

SAFETY ISSUES

HEAT STRESS MANAGEMENT

Safety/Industrial Hygiene Department

It is that time of year that we should begin thinking about heat stress on-the-job as well as during our leisure activities. Personnel who will be working in hot environments should be familiar with Heat Stress Management Program that is outlined in 4Q-IH-502. ***Management is to ensure that heat stress exposures to their employees are minimized.*** Affected supervision must be trained in the recognizing the early signs and symptoms of heat stress related disorders, predisposing health conditions, and where applicable, administering aid when heat stress related disorders occur. For additional information, contact your local Industrial Hygienist.

WORKER PROTECTION ORDER

Defense Programs Health, Safety, and Environment Status Report - March 1995

Several new developments have occurred in the development of draft DOE Order 5483.OSH, "Occupational Safety and Health Programs for Contractor Employees." The Office of the Assistant Secretary for Environment, Safety, and Health (EH) ***plans to condense all orders pertaining to worker protection into a single DOE Order 470, "Worker Protection Management."*** The DOE Occupational Safety and Health Coordination Committee, established by EH to develop DOE Order 5483.OSH, reviewed Draft DOE Order 470 and provided constructive comments to EH. The committee developed a consensus list of mandatory Occupational Safety and Health standards for DOE operations.

DOE Order 470 will require DOE and its contractors to assure worker protection with a program that integrates necessary components of occupational safety, industrial hygiene, occupational medicine, construction safety, radiological safety, explosives safety, and firearms safety. Central to program management are the core elements of management commitment, employee involvement, worksite analysis, hazard abatement and control, and safety and health training. The Order identifies mandatory standards. Implementation guides are expected to provide guidance in many programmatic areas. EH will forward the Order to the Office of the Assistant Secretary for Human Resources on March 31, 1995, to begin the formal concurrence process.

GOOD PRACTICES / LESSONS LEARNED

THE NUCLEAR EXCHANGE - RADIATION PROTECTION

The Nuclear Professional - Winter 1995

Challenge: To provide a safe, effective way for workers dressed in protective clothing to carry hand tools, while at the same time reducing the volume of low-level radioactive waste.

Response: ***A reusable tool pouch designed to be worn on the waist of workers dressed in protective clothing was developed.*** The pouch frees workers' hands for safer climbing on ladders and scaffolding, and provides convenient access for small tools, cameras, and many other items. The idea evolved after observing makeshift tool sacks workers were constructing from plastic bags and tape. The handmade sacks cost job time to make and added to low-level waste volumes when discarded. After a search of material catalogs failed to find a suitable replacement for the hand-made sacks, design of the pouch was handled in-house.

The resulting product is a 12" by 12" pouch made of strong nylon fabric, with a "see-through" window for easy viewing of tools. The nylon material is washable and durable for repeated use, and can be incinerated for volume reduction when worn out. The pouches come in magenta for radiological personnel and in yellow for all other workers.

MEETINGS, TRAINING, SEMINARS

April 28 - May 5, 1995 - 54th Annual American Occupational Health Conference; Las Vegas, NV; Contact: 708-228-6850, ext. 195

May 2 - 4, 1995 - Process Safety Management; Las Vegas, NV; Contact: Cam Holbrook (PNL) - 509-372-4178

May 7 - 10, 1995 - Nuclear Energy Assembly; Washington, DC; Contact: Sharon Salter - 202-739-8026

NOTES OF INTEREST

ITALIAN SCIENTISTS CLAIM COLD FUSION BREAKTHROUGH

Reuters - March 29, 1995

Italian physicists have detected what they believe may be ***evidence of nuclear "cold fusion" in experiments with hydrogen and nickel***, according to the news agency AGI. It quoted a member of the team, Professor Sergio Focardi of the University of Bologna, as saying that 15 grams of nickel and one gram of hydrogen produced 30 to 40 watts of energy, sufficient to power a light bulb, for around three months. Focardi said

about 100 kilowatt hours of energy had been produced so far in the experiments, a quantity that ruled out a chemical reaction as the source of the power, AGI said.

AGI said the Italian experiments were being carried out by physicists from the universities of Bologna, Siena, and Cagliari and quoted Focardi as saying in an interview, "We have the certainty that the system we are experimenting with produces energy through a process that is perfectly replicable and controllable. Measures based on controlling the external temperature of the system prove without a shadow of doubt that energy is emitted from this system." He added: "We have observed neutrons and gamma rays, which are fortunately few and can easily be eliminated. The presence of this radiation is proof that nuclear reactions are occurring, but they cannot be explained with current knowledge of physics."

UTILITIES TO PURSUE MESCARLO MRS

Nuclear Waste News - March 23, 1995

It looks like a high-level waste storage facility will be built on the Mescalero Apache reservation in New Mexico. Following a yes vote by their tribe, ***lead utility Northern States Power has decided there is enough interest to proceed with a private Monitored Retrievable Storage (MRS) facility.*** The consortium of utilities has decided to proceed in forming a partnership with the Mescaleros. A letter of intent on the interim storage facility is expected sometime in early May and it is hoped the MRS will receive a NRC license by 1996. To meet this ambitious goal, the group will be conducting site surveys, environmental impact statements, and any other studies needed to fulfill NRC requirements.

Appendix IX
Corrective Actions Tracking

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APPENDIX IX
CORRECTIVE ACTIONS TRACKING

The DOE Lessons Learned Technical Standard encourages organizations to document and track required response actions that result from lessons learned. This appendix provides examples of corrective actions tracking material that may be useful for organizations that have not implemented a lessons learned corrective action process. The documents in this appendix include figures and tables from the Savannah River Site Lessons Learned Program, Semi-Annual Report. This section of the semi-annual report covers:

- The number of lesson learned items reviewed,
- The status of material reviewed,
- The Program's transmittal hierarchy,
- Lessons learned document sources,
- Statistics for transmittals and responses,
- Corrective action tracking tables, and
- Response statistics.

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FIGURE 1
SITE LESSONS LEARNED PROGRAM
7/1/94 - 12/31/94

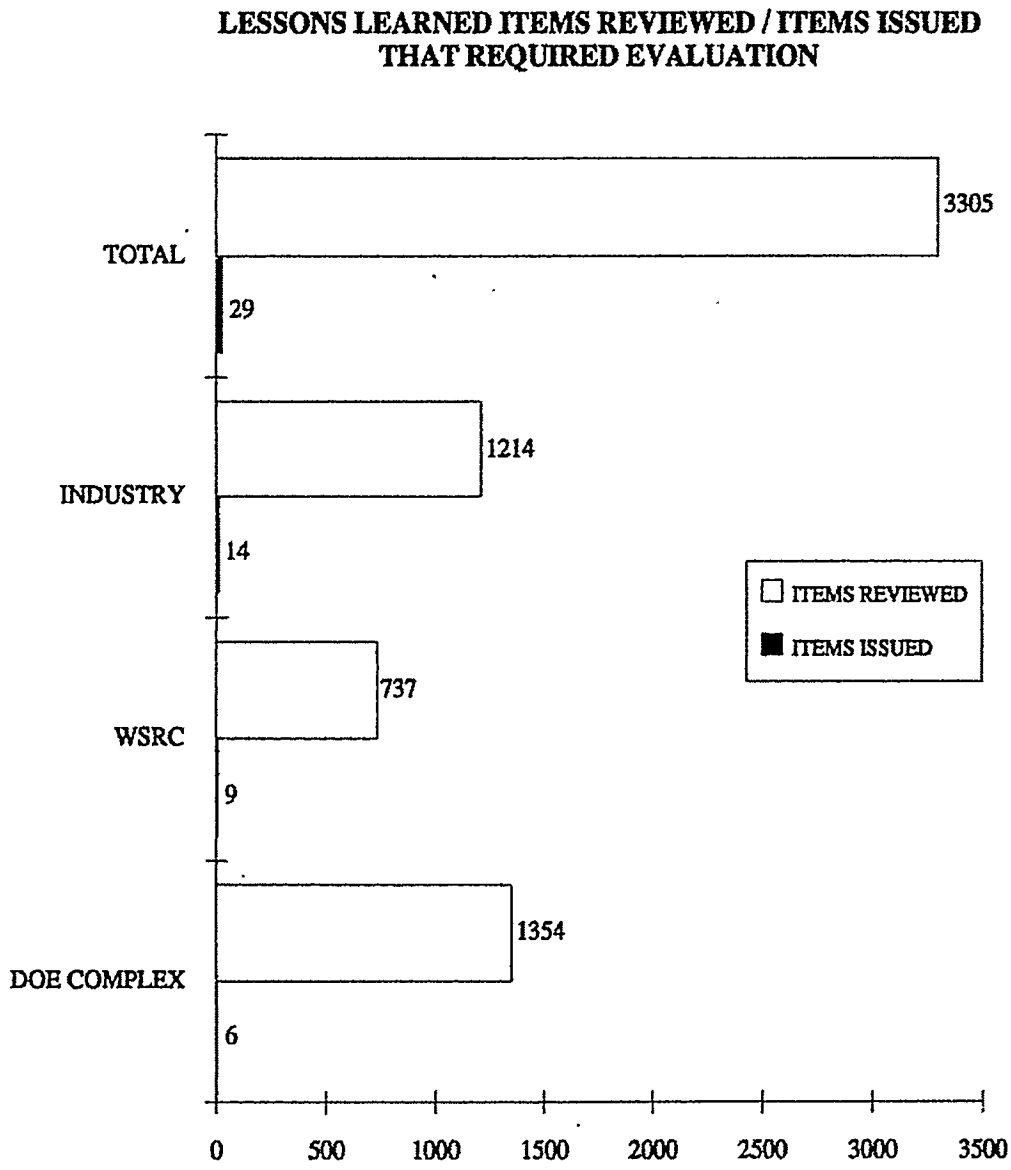

FIGURE 2
STATUS OF LESSONS LEARNED MATERIAL REVIEWED DURING JULY 1 - DECEMBER 31, 1994

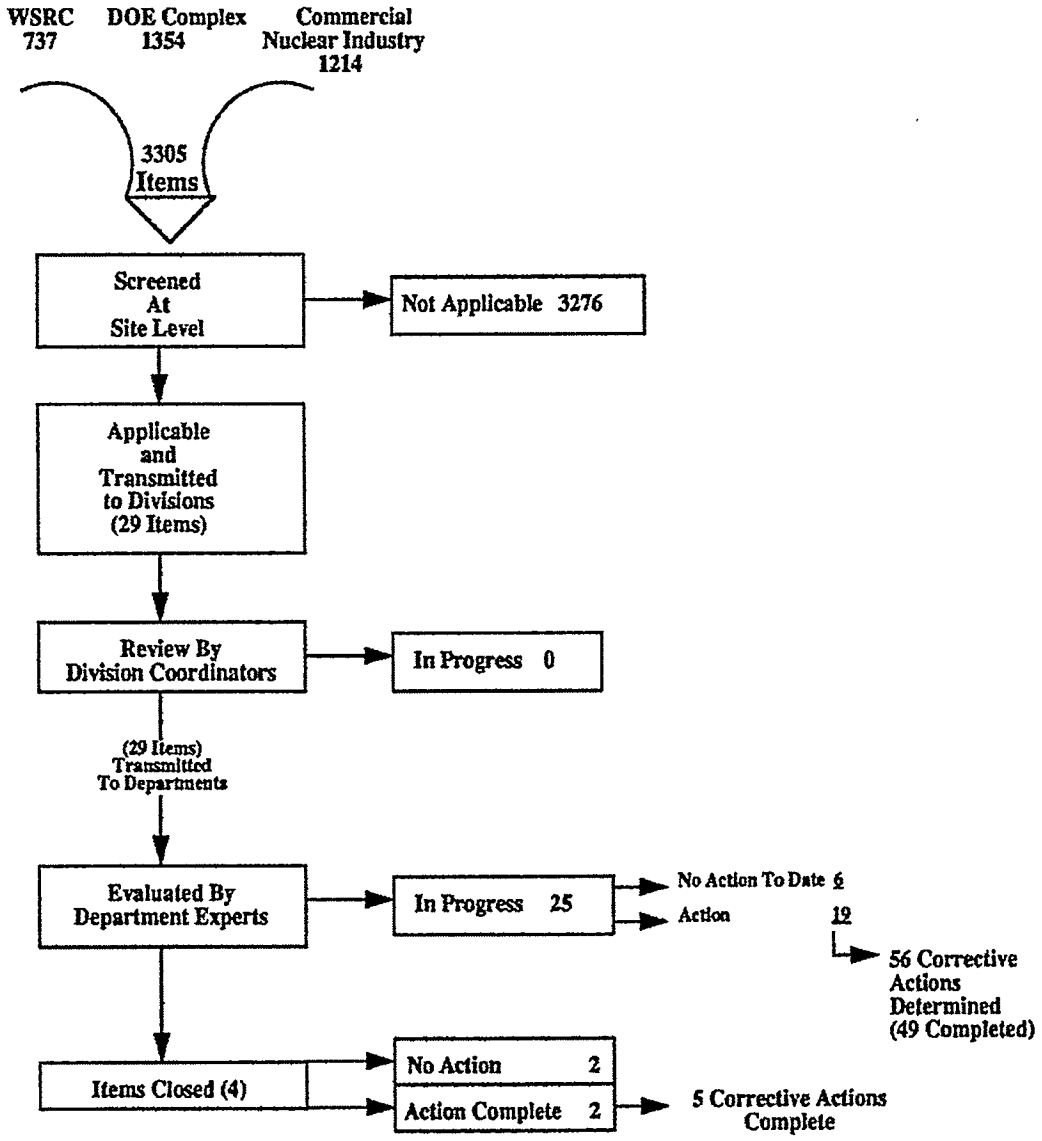

FIGURE 2A
STATUS OF LESSONS LEARNED MATERIAL REVIEWED DURING JANUARY 1 - DECEMBER 31, 1994

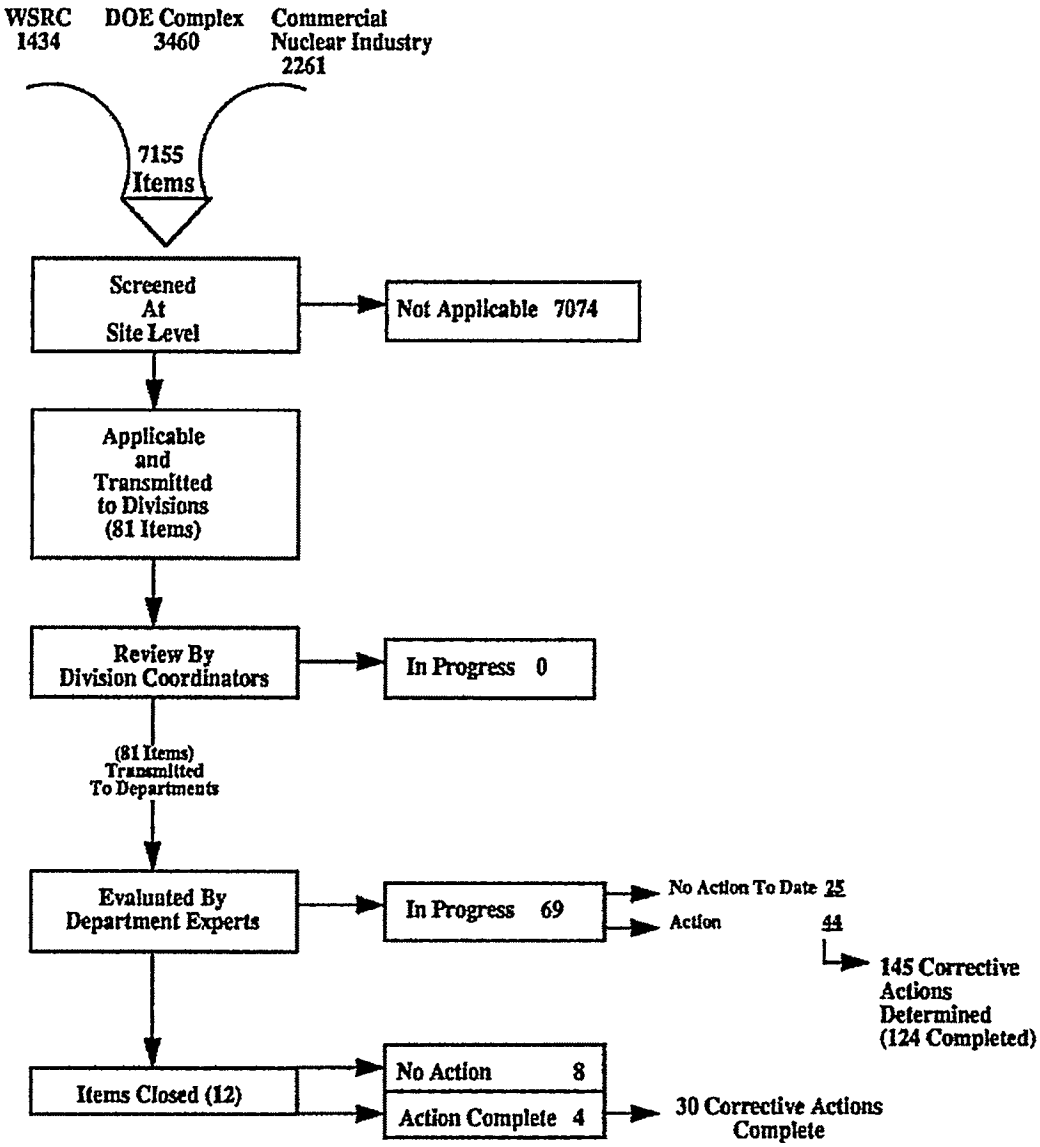

TABLE 2
SITE LESSONS LEARNED PROGRAM TRANSMITTAL HIERARCHY

Transmittal	Sent To For Evaluation/Action	Transmitted July through December 1994	Purpose
Directive	Vice Presidents	0	implement specific sitewide actions
Bulletin	Division Coordinators	3	evaluate, correct recurring or high significance degradations at SRS
Notification	Division Coordinators	7	evaluate, correct significant items with potential wide spread applicability
Special Information Notice	Selected Division Coordinators	0	provide helpful informational sources for selected activities, reviewers evaluate the need for corrective actions
Digest	Level 5 managers and above	6	general training, vehicle for sharing
Newsletter	Issued via All-in-1 to ~700 managers (also on Videotext)	25	relating current general industry issues and expectations

TABLE 3
SITE LESSONS LEARNED PROGRAM
LESSONS LEARNED DOCUMENT SOURCES (1/1/94 - 12/31/94)

TOTAL REVIEWED

		1-1-94 to 6-30-94	7-1-94 to 12-31-94
INDUSTRY	Nuclear Network Topics	870	1026
	Significant Operating Experience Report	0	2
	Significant Event Report	4	8
	Information Notice	31	41
	Bulletin	2	1
	Generic Letter	5	3
	SECY Letter	142	112
	Rule or Proposed Rule	18	21
DOE COMPLEX	Safety Note	5	9
	Safety Notice	1	4
	Safety Bulletin	0	0
	The Safety Connection	17	13
	Occupational Safety Observer	25	28
	ONS Weekly Summary	195	188
	ORPS	1173	1112
WSRC	ORPS	708	620
	ORR	0	8
	WSRC Independent Inputs	103	109

APPLICABILITY COMPARISON

July to December 1994

SOURCE	DOE COMPLEX	INDUSTRY	WSRC	TOTAL	% of TOTAL
NUMBER REVIEWED	1354	1214	737	3305	
% of total reviewed	41%	37%	22%		
NUMBER APPLICABLE	6	14	9	29	1%
% of total applicable	21%	48%	31%		

January to June 1994

SOURCE	DOE COMPLEX	INDUSTRY	WSRC	TOTAL	% of TOTAL
NUMBER REVIEWED	1416	1072	811	3299	
% of total reviewed	43%	32%	25%		
NUMBER APPLICABLE	10	17	18	45	1%
% of total applicable	22%	38%	40%		

TABLE 4
SITE LESSONS LEARNED STATISTICS FOR TRANSMITTALS AND RESPONSES
(Transmittals Issued July 1 to December 31, 1994)

DIVISION	NMPD	HLW	SW&ER	SRTC	RD	Site Services
# of Items Transmitted to the DLLC	26	26	21	23	25	24
Items not responded to by 1/31	0	0	0	0	0	0
Items under going evaluation by Division Contacts	5	18	7	8	6	10
Items Closed	21 (81%)	8 (31%)	14 (67%)	15 (65%)	19 (76%)	14 (58%)
Items Determined Not Applicable by the DLLC	5	2	1	3	3	0
Items Closed by Division Contacts	16	6	13	12	16	14
# of Items Transmitted to Division Contacts by 1/31	21	24	20	20	22	24
Items with No Corrective Actions determined by 1/31 *	11	22	17	14	19	7
Items with Corrective Actions determined by 1/31	10	2	3	6	3	17
Items with Corrective Actions closed	9	1	3	6	3	15
Items with Corrective Actions overdue	0	0	0	0	0	0

DIVISION	E & CSD	ESH & QA	SS & ES	I Oversight	Admin & Log	Other Staff **
# of Items Transmitted to the DLLC	19	11	12	3	12	3
Items not responded to by 1/31	0	0	0	0	0	0
Items under going evaluation by Division Contacts	2	3	4	0	0	0
Items Closed	17 (89%)	8 (73%)	8 (67%)	3 (100%)	12 (100%)	3 (100%)
Items Determined Not Applicable by the DLLC	11	5	3	2	1	2
Items Closed by Division Contacts	6	3	5	1	11	1
# of Items Transmitted to Division Contacts by 1/31	8	6	9	1	11	1
Items with No Corrective Actions determined by 1/31 *	6	6	9	1	3	1
Items with Corrective Actions determined by 1/31	2	0	0	0	8	0
Items with Corrective Actions closed	2	0	0	0	8	0
Items with Corrective Actions overdue	0	0	0	0	0	0

* For open items, this statistic may change and increase corrective actions at a later date.

** Other Staff is an average of the responses from the Staff Organizations of HR, CFOD, ED and OT&A

TABLE 5
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS
(For Transmittals Issued July to December 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-10-1	Pump Removal Seismic Concerns	SWER	Inspected ERD facilities, no such concern existed (ERD)	COMPLETE
N-94-10-2	Vendor Torque Specification Incorrect	NMPD	Searched equipment database, no such valve found (Sep)	COMPLETE
N-94-10-3	Loose Diesel Generator Wooden Pins	ADMIN	Searched databases, no such diesel generator in records	COMPLETE
		SRTC	Walkdown performed, verified no such type of generator (773)	COMPLETE
		SRTC	Walkdown performed, verified no such type of generator (TNX)	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
N-94-10-4	MOV Thrust Calculations Incorrect	SSD	Required reading (CSWE)	COMPLETE
N-94-10-5	Diesel Generator Fuel Pump Mounting	ADMIN	Searched databases, no such diesel generator in records	COMPLETE
		SRTC	Walkdown performed, verified no such type of generator (773)	COMPLETE
		SRTC	Walkdown performed, verified no such type of generator (TNX)	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
N-94-10-6	Butterfly Valve Calculations Incorrect	ADMIN	Searched databases, no such valve on record	COMPLETE
		NMPD	Searched equipment database, no such valve found (Sep)	COMPLETE
		SWER	Inspected ERD facilities, no such valve found (ERD)	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
N-94-12-4	DC General Purpose Contactor Adjustment	SRTC	Walkdown by Cognizant Engineer, no such item found	COMPLETE
		NMPD	Searched Database, no such item found	COMPLETE
		ADMIN	Searched Database, no such item on record	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
N-94-12-6	Improper use of PVC Pipe	SSD	Required reading (ANALAB)	COMPLETE
N-94-13-1	Hot Water Filter Units Hazard	NMPD	Performed walkdown of water heaters, none found on hot side (Sep)	COMPLETE
		NMPD	Performed walkdown of water heaters, none found on hot side (Tri)	COMPLETE
		HLWD	Remove or replace incorrectly installed filters, if any (DWPF)	2/26/95
		HLWD	Remove or replace incorrectly installed filters, if any (HLW)	2/26/95
		SSD	Inspect, remove, replace hot water heater filters as applicable (SUD)	3/31/95
		RD	Inspected all RD hot water heaters, none found on hot side	COMPLETE
		EPD	Water Filter Units Inspected, all SAT (Construction)	COMPLETE
N-94-13-3	Corrosion in Large Vertical Pumps	SSD	Required reading (CSWE)	COMPLETE
N-94-13-4	Cold Weather Diesel Generator Operations	NMPD	Fuel Oil Piping walked down, determined to be protected	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
N-94-13-5	Defective Magnetic Reversing Controllers	ADMIN	Database search performed, none of this type item on record	COMPLETE
		NMPD	Database search performed, none of this type item found	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE

TABLE 5
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS (CONTINUED)
(For Transmittals Issued July to December 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-14-1	Sterilizer Pressure Relief Valves	SRTC	Inspections completed, problems with autoclaves corrected (773)	COMPLETE
		SRTC	Walkdown performed, no such valves found (TNX)	COMPLETE
		ADMIN	All departments to determine if any are on order or in stock	1/31/95
		SSD	Required reading (CSWE)	COMPLETE
		NMPD	Training to be provided to all FPEs	1/30/95
N-94-14-2	Diesel Generator Defects	ADMIN	All departments to determine if any are on order or in stock	1/31/95
		SSD	Required reading (CSWE)	COMPLETE
N-94-14-3	Scaffolding Vendor Safety Alert	SRTC	Placed item on prohibited procurement list.	COMPLETE
N-94-15-2	Vacuum Breaker Vendor Safety Alert	ADMIN	Search indicated that this does not apply to breakers in stock	COMPLETE
N-94-15-3	Pipe Sealant Causes Alarm Failure	RD	Required reading (FS)	COMPLETE
		NMPD	Required reading (Sep)	COMPLETE
		SSD	Place rotameters on a monthly check and PM schedule (772-D)	2/1/95
		SSD	Required reading (CSWE)	COMPLETE
N-94-15-4	Turbine Pumps Overspeed Trip Failure	SSD	Required reading (CSWE)	COMPLETE
B-94-09	Recurring Bad Practice Causes Hazards	EPD	Technical Alert Bulletin on electrical safety (Construction)	COMPLETE
		SRTC	Electrical Safety Task Team items fixed (773)	COMPLETE
		SRTC	Electrical Safety Task Team generic items fixed (TNX)	COMPLETE
		SSD	Required reading (ANALAB)	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
B-94-10	Failure to Use Lessons Learned	NMPD	Required reading (Sep)	COMPLETE
		NMPD	Major steam system upgrade program (Trit)	COMPLETE
		SWER	Evaluation of ERD facilities performed, water hammer no concern	COMPLETE
		RD	Required reading (RHOF)	COMPLETE
		SSD	Training completed (ANALAB)	COMPLETE
B-94-11	Steam System Overpressurization	SSD	Steam safety course to be given to appropriate personnel (ANALAB)	COMPLETE
		SSD	Required reading (CSWE)	COMPLETE
		HLWD	Required reading (HLW)	COMPLETE
		NMPD	Required reading (Sep)	COMPLETE

TABLE 5A
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS
(For Transmittals Issued January to June 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-01-1	ASCO switches	EPD	Search located two ASCO 940 switches in CIF, without the defect	COMPLETE
		NMPD	Perform walkdown to locate switches and replace (Sep)	COMPLETE
		SSD	Inspect equipment and remove defective items (ANALAB)	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		ADMIN	Searched Stores data base, no such equipment found	COMPLETE
		SRTC	Performed a walkdown of all ATS locations, none found	COMPLETE
		SWER	Inspections performed at air stripper, no rectifier chips found (ER)	COMPLETE
		RD	One rectifier chip found, to be replaced	COMPLETE
N-94-01-2	Westinghouse 7300 printed circuit cards	SSD	Required Reading (CSWE)	COMPLETE
		SSD	Inspect equipment and remove defective items (ANALAB)	COMPLETE
		SWER	Inspections performed at air stripper, none of this equipment found	COMPLETE
		ADMIN	Searched Stores Database, no Westinghouse 7300 circuit cards found	COMPLETE
N-94-01-3	Velan Motor Operated Valves Failure	SWER	Inspections performed at air stripper, none of this equipment found	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SSD	Inspect for defective parts (ANALAB)	cancelled
		ADMIN	Searched Stores Database, no such VELAN valves found	COMPLETE
		NMPD	Walkdown in NMPD verified no Velan MOVs	COMPLETE
N-94-01-4	Electrical Inverter Failure Modes	SWER	Inspections performed at air stripper, none of this equipment found	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-01-5	Alpha Monitor Failure Modes	ESHQA	Required Reading (HP)	COMPLETE
		SWER	Inspections performed at air stripper, none of this equipment found	COMPLETE
N-94-01-6	Victoreen Area Monitor Packets	ESHQA	Required Reading (HP)	COMPLETE
N-94-03-1	Telemecanique E20 Style Overload Relays	ADMIN	Searched Stores Database, no such relays found	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SWER	Evaluated field equipment, no such relay found (ER)	COMPLETE
		SWER	Walkdown of facilities revealed no such relays (SW)	COMPLETE
N-94-03-2	ACM-4 Cut-off Saw causes injury	NMPD	Identified one saw, performed SMI 51 walkdown (Sep)	COMPLETE
		NMPD	Required Reading (Sep)	COMPLETE
		NMPD	Inspected all cut off saws, shields in place. (Trit)	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		RD	Out of Service saws with out shields DNO tagged (FS)	COMPLETE
N-94-03-3	GE 4.16kV Magne-Blast Circuit Breakers	SSD	Required Reading (CSWE)	COMPLETE
N-94-03-4	IBM PC with Intel Math Coprocessor	NMPD	Distribute test programs to support coordinators	COMPLETE
		EPD	Evaluated problem, made list of site wide recommendations	COMPLETE
		ESHQA	Required Reading (RC&HP)	COMPLETE
		ESHQA	Required Reading (EPD)	COMPLETE
		CPOD	Checked all personnel computers, none found	COMPLETE
		HR	Database and records searched, none found	COMPLETE
		OTA	Test program run on each computer, none found	COMPLETE
		SSES	Computer Group evaluated, issued instructions to DCSO's	COMPLETE

Note: Shaded items were reported during July through December 1994

TABLE 5A
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS (Continued)
(For Transmittals Issued January to June 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-03-5	Amersham Shipping Container	ADMIN	Searched Stores Database and found no Amersham containers	COMPLETE
		HLW	Detailed records review verified that all containers are buried	COMPLETE
N-94-03-6	Hi-Q Environmental Air Sampling Unit	ESHQA	Required Reading (RC&HP)	COMPLETE
		ADMIN	Searched Stores Database and found no Hi-Q products	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-04-1	Westinghouse DB, DHP Breaker Failure	ADMIN	Searched Stores Database, no Westinghouse DB-25 in inventory	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		NMPD	Walkdown conducted, none of this type breaker found (Trit)	COMPLETE
N-94-04-2	GE 4.16kV Magne-Blast Circuit Breakers	ADMIN	Searched Stores Database, no GE Magne-Blast in inventory	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		NMPD	Walkdown conducted, none of this type breaker found (Trit)	COMPLETE
N-94-04-3	Augat, Inc. Socket Connector Failure	ADMIN	Searched Stores Database, no such Augat, Inc. parts in inventory	COMPLETE
		SSD	Directive issued, personnel now ordering machined sockets (DC & S)	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-04-4	Square D Fractional Horsepower Motors	SSD	Required Reading (CSWE)	COMPLETE
N-94-04-5	Fire Protection System Actuation	SSD	Required Reading (F&S)	COMPLETE
N-94-04-6	Potter & Brumfield Motor Driven Relays	ADMIN	Searched Stores Database, no such motor driven relays in inventory	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		NMPD	Search of database did not locate any of these relays (Sep)	COMPLETE
		NMPD	Walkdown performed, none of this type relay found (Trit)	COMPLETE
		SWER	Walkdown of SWER facilities performed, none exist	COMPLETE
N-94-05-1	Heat Tracing Tape Misapplication	SSD	Required Reading (CSWE)	COMPLETE
		EPD	Issued Technical Alert Bulletin (Construction)	COMPLETE
		RD	A walkdown will be performed to see if condition exists. (FS)	3/30/95
		ESH&QA	Perform field checks for proper application (RC & HP)	COMPLETE
N-94-05-2	Beta Smear Counter Calibration	SSD	Inspected Planchets, no breaches found (ANALAB)	COMPLETE
N-94-05-3	Walworth Gate and Globe Valve Yokes	SSD	Required Reading (CSWE)	COMPLETE
		ADMIN	Reviewed PCS, one reported on site	COMPLETE
		NMPD	Reviewed database, no Walworth valves in NMPD	COMPLETE
		SWER	Inspected air strippers, no Walworth valves found	COMPLETE
N-94-05-4	Diesel Generator Rocker Arms Inoperable	SSD	Required Reading (CSWE)	COMPLETE
		ADMIN	Reviewed PCS database, no such engine found	COMPLETE
N-94-05-5	Victoreen Digital Rate Meter	NMPD	Verified manual is the correct one for their system	COMPLETE
N-94-06-1	Hyster Lift Truck Retrofit Kit	HLW	Two Hyster Lift Trucks identified, retrofit kits not required	COMPLETE
		SRTC	Searched equipment, no matching trucks found	COMPLETE
		SWER	One Hyster Lift Truck identified, retrofit kit not required	COMPLETE
		EPD	Searched equipment, no such trucks found (Construction)	COMPLETE

Note: Shaded items were reported during July through December 1994

TABLE 5A
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS (Continued)
(For Transmittals Issued January to June 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
N-94-07-2	Westinghouse IQ-1000 Motor Protectors	NMPD	Searched of databases and spare parts, none of these exist in NMPD	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SWER	Walkdown inspection of E-Area completed, no such protectors.	COMPLETE
N-94-07-3	Lexan Fire Hose Nozzle Failure	SSD	Required Reading (CSWE)	COMPLETE
		SSES	Random search completed, none found on site	COMPLETE
N-94-08-2	AMBAC Diesel Generator Governor	NMPD	Searched of databases and spare parts, none of these exist in NMPD	COMPLETE
		ADMIN	Searched database, none found	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-08-3	Raychem Inline Motor Splice Kits	ADMIN	Searched database, none found, none issued	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-08-4	Sealed Tank Voltage Regulators	ADMIN	Searched database, none found, none issued	COMPLETE
		HLW	Search indicated that none exist in HLW	COMPLETE
		RD	Search indicated that none exist in RD	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-08-5	Square-D Instrument potential transformer	ADMIN	Searched performed, one found, in good shape	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
N-94-08-6	Powell Flanged Gate Valves	NMPD	Searched of databases and spare parts, none of these exist in Tritium	COMPLETE
		NMPD	Perform field review, two such Powell valves found. (Sep)	COMPLETE
		SWER	Determine if any of the Powell valves are made in China (SW)	COMPLETE
		ADMIN	Search found 298 valves, walkdown showed none from China	COMPLETE
		HLW	Maintenance to perform database (MEL) search	10/95
		SRTC	Walkdown performed, no such Powell valves found	COMPLETE
		RD	Walkdown performed, no valves of this type were found	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
B-94-01	Improper Liquid Transfer	RD	Required Reading (ROD)	COMPLETE
		RD	Special Training Session (HWO)	COMPLETE
		RD	Required Reading (Rx Mat)	COMPLETE
		NMPD	Required Reading (Sep)	COMPLETE
		NMPD	Revise piping procedures to require supervisor verification (Sep)	COMPLETE
		NMPD	Include in Operator Training (Sep)	COMPLETE
		NMPD	Required Reading (Trit)	COMPLETE
		SRTC	Required Reading (TNX)	COMPLETE
		SSD	Required Reading (ANALAB)	COMPLETE
B-94-2	Improper Response to Failed M & TE	ESHQA	Required Reading (RC & HP)	COMPLETE
		RD	Required Reading (ROD)	COMPLETE
		RD	Required Reading (HWO)	COMPLETE
		NMPD	Required Reading (Sep)	COMPLETE

Note: Shaded items were reported during July through December 1994

TABLE 5A
SITE LESSONS LEARNED PROGRAM
CORRECTIVE ACTIONS (Continued)
(For Transmittals Issued January to June 1994)

ITEM #	TOPIC	DIVISION	CORRECTIVE ACTIONS	DUE DATE
B-94-3	CO Bottles Leaking Valves	ESHQA	Required Reading (HPT)	COMPLETE
		NMPD	Completed walkdown of area, no CO bottles found (Sep)	COMPLETE
		NMPD	Searched for and found two CO bottles, different kind (Tri)	COMPLETE
		HLW	Three defective cylinders located and removed from S-Area	COMPLETE
		HLW	Search MEL for valves made for use of CO in HLW	1/6/95
B-94-4	Degraded System Support Poles	ADMIN	Inspected inventory of support poles by CSWE (Stores)	COMPLETE
		HLW	H-Area completed pole inspection, results forwarded to Power Dept.	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SWER	Poles to be inspected (SW)	9/30/95
		RD	Develop PM inspection schedule to inspect poles	COMPLETE
		RD	Two degraded poles found and to be replaced	3/28/95
		SRTC	SRTC walkdown complete, defective poles located	4/1/95
		NMPD	Inspected poles, 12 to be replaced ASAP (Sep)	COMPLETE
		NMPD	Inspected poles, 2 to be replaced during steam outage (Sep)	6/30/95
B-94-5	Followup on Acid Line Failure	SRTC	Identified system pipes, to establish NDE inspection (TNX)	COMPLETE
B-94-6	Incorrect Breathing Air Piping	RD	Perform walkdown and repair as necessary (FS)	COMPLETE
		SRTC	Completed review and walkdown of Breathing Air System (773)	COMPLETE
		SSD	Required Reading (CSWE)	COMPLETE
		SSD	Walkdown completed, no changes needed (ANALAB)	COMPLETE
		NMPD	Walkdown BA system and verify Verification Records (Sep)	2/28/95
		NMPD	Walkdown HP bottle stations and verify Verification Records (Tri)	2/28/95
		HLW	Complete walkdown of Breathing Air System	1/6/95
B-94-7	Disconnect Switch Rating	SSD	Required Reading (CSWE)	COMPLETE
		SSD	Labelling and identification to be completed	2/28/95
		EPD	Determine if unfused switches are in current and past designs	COMPLETE
		SWER	Determined that switches have adequate withstand (SW)	COMPLETE
		SWER	Determined that switches have adequate withstand (ERD)	COMPLETE
B-94-8	Chemical Extended Storage	ADMIN	Check for stored chemicals with changed MSDS sheet	COMPLETE
		NMPD	Chemical Coordinators assigned to each facility (Sep)	COMPLETE
		NMPD	Required Reading (H Canyon and HB Line)	COMPLETE
		SSD	Chemicals to be checked and disposed (ANALAB)	5/31/95
		SSD	Revise procedure L2-800-11 (ANALAB)	12/31/94
		SSD	Twenty Drums to be disposed (ANALAB)	1/31/96
D-94-1	Polycarbonate Bowls	ADMIN	Removed 63 bowls from stores	COMPLETE
		HLW	Removed 26 bowls from service	COMPLETE
		EPD	Removed 45 bowls from service	COMPLETE
		SWER	Removed 2 bowls from service	COMPLETE
		NMPD	Remove 131 bowls from service	2/15/95
		SSD	Remove 178 bowls from service	COMPLETE
		SSES	Completely enclose 2 bowls	COMPLETE
		RD	Remove 307 bowls from service	5/2/95
		SRTC	Remove 123 bowls from service	12/8/95

Note: Shaded items were reported during July through December 1994

TABLE 6
DIVISION LESSONS LEARNED COORDINATOR RESPONSE STATISTICS
(Transmittals Issued July 1 to December 31, 1994)

DIVISION	NMPD	HLW	SW&ER	SRTC	RD	Site Services
Required Reports Submitted on Division Daily Occurrences, %	98%	98%	94%	100%	88%	83%
Number of 30 Day Reports required	26	26	21	23	25	24
Number of 30 Day Reports submitted	26	26	21	23	25	24
Number of 30 Day Reports submitted more than 10 days late	0	0	3	0	0	6
Average 30-Day Report response time, days	25	29	33	21	25	34
Quarterly Reports submitted (2)	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES
Quarterly Reports (2) submitted on time, (< 10 days late)	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES
Site Lessons Learned Committee Meeting Attendance, %	100%	100%	100%	100%	100%	50%
DIVISION	**R & CSD**	**ESH & QA**	**SS & ES**	**I Oversight**	**Admin & Log**	**Other Staff ***
Required Reports Submitted on Division Daily Occurrences, %	100%	100%	100%	100%	100%	100%
Number of 30 Day Reports required	19	11	12	3	12	3
Number of 30 Day Reports submitted	19	11	12	3	12	3
Number of 30 Day Reports submitted more than 10 days late	0	2	0	0	0	0
Average 30-Day Report response time, days	29	36	32	27	32	27
Quarterly Reports submitted (2)	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES
Quarterly Reports (2) submitted on time, (< 10 days late)	Oct YES Jan YES	Oct NO Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES	Oct YES Jan YES
Site Lessons Learned Committee Meeting Attendance, %	100%	100%	50%	100%	100%	100%

* Other Staff is an average of the responses from the Staff Organizations of HR, CFOD, ED and OT&A

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Appendix X
Lessons Learned Program Review

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APPENDIX X
LESSONS LEARNED PROGRAM REVIEW

Periodic reviews of lessons learned programs are a good means of measuring the effectiveness of the program and identifying areas that need improvement. This appendix provides an example of a semi-annual site lessons learned program review report. This report can be used as a guide in selecting performance measures, planning program reviews, and/or preparing program review reports.

- Westinghouse Savannah River Company, Semi-Annual Review of the Site Lessons Learned Program, July 1, 1994 - December 31, 1994.

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SEMI-ANNUAL REVIEW OF THE SITE LESSONS LEARNED PROGRAM

July 1, 1994 - December 31, 1994

EXECUTIVE SUMMARY

General

The Site Lessons Learned Program screens lessons learned information from the DOE complex, commercial nuclear industry, and SRS and transmits applicable, significant items throughout the site for detailed evaluation and development of appropriate corrective actions. This site level screening process is very cost effective because it provides the desired extensive review of lessons learned information (~7,000 items/year), while drastically reducing the review workload for WSRC Divisions and minimizing distractions to their normal operations. The program, called for by the WSRC President (Reference 1), is directed by the Site Lessons Learned Coordinator. He is supported by matrixed Division Lessons Learned Coordinators (DLLC) from each of the 15 Division and Staff organizations (Table 1) and a direct report staff of five Lessons Learned Engineers. The Site Lessons Learned Coordinator reports to the Manager of the Oversight Compliance Integration Section (OCIS).

Programmatic Improvement

During the second half of 1994 the program continued to improve as demonstrated by the following items.

- Required Division Coordinator Reports verifying review of daily Division occurrences continued to increase: 70% (Jan - Jun '93), 75% (Jul - Dec '93), 89% (Jan - Jun '94), 97% (Jul-Dec '94).

- For items issued during the period, (Total Items Closed By All Divisions/Total Items Received By All Divisions), increased from 66% (Jan-Jun '94) to 71% (Jul-Dec '94).

- For all items issued since 1/1/93, (Cumulative Division Items Fully Closed/Cumulative Division Items Received) has continued to increase from 5% (Jan-Jun '93) to 15% (Jul-Dec '93) to 24% (Jan-Jun '94) to 39% (Jul-Dec '94).

- Division lessons learned items detected by the Division Coordinator and forwarded to the Site Coordinator for review continued to increase: 39 (Jan - Jun '93), 47 (Jul - Dec '93), 80 (Jan - Jun '94), 104 (Jul-Dec '94).

- Site Lessons Learned Committee meeting attendance continued to increase: 69% (Jan - Jun '93) to 73% (Jul - Dec '93) to 82% (Jan - Jun '94) to 93% (Jul-Dec '94).

- Corrective action due dates continue to be met with a very high success rate, no corrective actions exceeded their due date during the Jul - Dec '94 Period.

- Cumulative items having complete closure by all Divisions continues to increase: 2 (Jan - Jun '93), 12 (Jul - Dec '93), 30 (Jan - Jun '94), 61 (Jul-Dec '94).

- Late transmittal response reports from Division Lessons Learned Coordinators remained low at 5%.

Other significant program parameters, such as lessons learned items screened and required Division Coordinator responses were comparable to the previous reporting periods. The number of lessons learned items transmitted to the Divisions which required formal response decreased from 40 to 29. The decrease was primarily the result of (1) increased screening knowledge of the Site Level screeners, and (2) increased use of various site committees to help with screening in specific areas (e.g., Senior Electrical Review Board). These efforts reduced screening at the Division level and allowed some Divisions to spend additional time on completing evaluation of previous Lessons Learned transmittals.

Problem Areas

The High Level Waste Management Division (HLWMD) departmental contacts have been slow in evaluating items forwarded to them by their DLLC. HLWMD is open in 21 of the 81 items issued by the Site Lessons Learned Program in 1993. One or more of the HLWMD departmental contacts have yet to perform the detailed evaluation of the lessons learned in 20 of the 21 open items. A similar trend is occurring for lessons learned issued in 1994. The HLWMD DLLC recently reported that, in an effort to restore the HLWMD Lessons Learned Program to a level with that of other site operations Divisions, a new departmental contact has been named in DWPF and increased management support for lessons learned evaluation is expected during 1995.

Screening and Dissemination

The Site Level Lessons Learned organization in the Oversight Compliance Integration Section screened 3305 lessons learned items (Figure 1) during the second half of 1994. Twenty-nine items were determined to be applicable and significant, and were transmitted to appropriate Divisions for detailed evaluation and development of appropriate corrective actions. (For the entire calendar year 1994, 6604 lessons learned items were screened, and 74 were determined to be applicable for site wide distribution.) Additionally, many other items were broadly disseminated to WSRC personnel for information and use as appropriate, via monthly Lessons Learned Digests and Weekly Newsletters.

A prioritized hierarchy of six types of transmittals is used to disseminate applicable lessons learned information (Table 2). Directives are at the top of the hierarchy and are reserved for issues for which sitewide corrective actions have been defined, and the President of WSRC directs sitewide compliance with the actions. At the direction of the Site Lessons Learned Coordinator, the Quality Assurance Department is required to verify that corrective actions associated with Directives are complete. No Directives were issued during the second half of 1994. In descending order of risk priority (occurrence probability and consequence) the following transmittals were issued during the second half of 1994: 3 Bulletins, 7 Notifications (with 1-6 items per Notification), 0 Special Information Notices, 6 Digests, and 25 Newsletters. The Digests and Newsletters discuss multiple issues and are disseminated for general information and as a possible training resource, and they do not require formal evaluation and tracking.

Evaluation, Closure, and Corrective Actions

For the second half of 1994, the entire process of detailed Division evaluation, determination of appropriate corrective actions, and implementation of corrective actions has been completed for all 15 Divisions for 4 of the 29 disseminated items (Figure 2). This includes two items that were screened to and closed by the Occupational Safety and Hygiene Department. Complete closure of an item requires all 15 Divisions to have implemented all associated corrective actions.

Sixty-one corrective actions addressing 21 disseminated items were identified during this period; however, the number of corrective actions is expected to increase. The identified corrective actions cover a range of activities including required reading, development of procedures, formal training, system walkdowns, inspections, and equipment corrections.

As shown in Figure 2A, for the entire year of 1994 a total of 71 items were transmitted to the Divisions for evaluation and implementation of appropriate corrective actions. Ten of those items have now been closed by all Divisions. Corrective actions for all of the transmittals issued in 1994 now stand at 216, with 192 of these being complete.

Program Accomplishments

The Site Lessons Learned Program produced the following major accomplishments during the second half of 1994:

- Site Lessons Learned Program personnel developed a user friendly manual, WSRC-IM-94-62, which allows identification of programmatic causes of chronic facility problems. The identification is determined via a matrix correlation of Operations Readiness Functional Area criteria (from WSRC-SCD-4) and occurrence root causes (from WSRC-IM-91-15).

- Continued DOE complex recognition of WSRC Site Lessons Learned program excellence, including telecon congratulations from DOE-HQ (EH-11) for a Digest article on low voltage electrical hazards. All WSRC Site Lessons Learned transmittals (excluding Newsletters) have been distributed throughout the DOE complex since the DOE-HQ request in December 1993.

- Issued a comprehensive 9-page Bulletin (Volume 3, No. 10, September 12, 1994) addressing 5 areas for which some SRS facilities have failed to respond adequately to previously published lessons learned. The Bulletin included extensive lessons learned in the area of condensate induced water hammer hazards.

- A joint effort by DOE-SR and WSRC Site Lessons Learned Staff was successful in helping change the proposed DOE Standard for Lessons Learned Programs. The proposed standard was very prescriptive and compliance would have required significantly greater WSRC resources than are presently expended for the program.

- Continued making progress on equipment removal in two areas, lifting equipment suspect fasteners and polycarbonate air system lubricators and moisture separators. For the lifting equipment, 36% of site lifting equipment has been inspected, 38% of the equipment that has been inspected contained suspect

fasteners, and 64% of the identified suspect fasteners have been replaced. For the polycarbonate bowls, 745 (89%) bowls have been replaced with metal bowls, or permanently removed from service. The remainder of the deficient bowls (38 SRTC, 47 Reactors, 5 NMPD) are scheduled for replacement in 1995.

- Hazardous hardware was removed or corrected including special model Powell Gate Valves, incorrectly designed Breathing Air Systems (potential component fragmentation), and autoclave pressure relief deficiencies.

- WSRC Site Lessons Learned Staff assisted the Consolidated Annual Training (CAT) instructors in the upgrading of the Lessons Learned Program portion of the annual training program for SRS.

- Experienced OCIS Lessons Learned Engineers performed rigorous screening of an extensive source of 3305 items from a wide spectrum of national nuclear facilities (DOE complex, commercial nuclear industry, and all SRS facilities). Applicable material (29 items) was provided to SRS, while precluding the need for having each of the 15 Divisions review large volumes of material.

- The 1% (29 items) of significant lessons learned information screened as applicable to SRS facilities received further evaluation by Division and Department personnel most knowledgeable in their facility processes and conditions. This produces the most effective, customized corrective actions.

  - 6 Digests and 25 Newsletters were issued (not requiring formal response to the Site Coordinator) which conveyed additional information from the 3305 items screened

- Sixty-one corrective actions were implemented or identified from material transmitted during the second half of 1994.

DISCUSSION

Introduction

This report is designed to document the status, performance, and effectiveness of the Site Lessons Learned Program by focusing on the quantitative parameters associated with the functioning of the program. Information in the Discussion section is based primarily on the program statistics for the period of July 1, 1994 through December 31, 1994.

Screening and Dissemination

Figure 1 shows that a total of 3305 lessons learned items were reviewed by the Site Lessons Learned screeners during the second half of 1994. The figure also indicates that 1214 of the items were associated with the commercial nuclear industry, 1354 with the DOE complex, and 737 with WSRC items (including Occurrence Reports, Operational Readiness Review items, etc.) For the year, 6604 lessons learned items were screened. Table 3 shows a further breakdown of the source materials that were screened during each half of 1994. Occurrence reports represent the largest contribution from DOE while the INPO Nuclear Network reports provided the highest volume from the commercial nuclear industry.

Typically the lessons learned program for a commercial nuclear plant screens a smaller volume of material (~2,000 items/year) because they do not review the DOE lessons learned information.

Providing a site level initial screening process precludes the need for having each of the Divisions review this large volume of material. The individual Division workload is reduced to handling the 1% of items found applicable to SRS facilities.

- Applicability to SRS Facilities

The Applicability Comparison at the bottom of Table 3 indicates that about 1%, or 29 items, of the material screened was found to be applicable, thus requiring a response from each assigned Division.

Although fewer WSRC inputs are screened (737) than items from either the DOE complex (1214) or commercial nuclear industry (1354), as expected, the WSRC reports yield a comparable percentage of items for transmittal throughout the site. Nine (1.2%) WSRC lessons learned items were transmitted to the Divisions, and tracked, versus fourteen (1.2%) for the commercial nuclear industry and 6 (0.4%) for the DOE complex.

The higher percentage of WSRC items transmitted occurs because WSRC facilities and organizations share a higher degree of commonality amongst themselves than with those offsite. Commonalities can include areas such as site procedures, maintenance and maintenance training, personnel training, equipment, purchasing practices, configuration management, conduct of operations, reliance on administrative controls, procedure compliance, safety culture, technical inquisitiveness, and utilization of lessons learned.

For the year 1994, 74 out of the 6604 screened items were determined to be applicable and forwarded to selected Divisions for evaluation. This is similar to 1993, when a total of 7155 items were screened, and 81 items were determined to be applicable and requiring a response from the Divisions.

- Dissemination of Lessons Learned

Table 2 describes the hierarchy of transmittals used to disseminate lessons learned information to SRS facilities. The hierarchy is based on potential risk (probability and consequence) with the Directives addressing the greatest risk followed by Bulletins, Notifications, Special Information Notices, Digests, and Newsletters. Directives define specific corrective actions that must be taken sitewide, while Bulletins and Notifications call for Divisions to make detailed applicability evaluation and subsequent development and implementation of appropriate correction action. Special Information Notices contain significant information that may require detailed evaluation and subsequent corrective actions regarding a narrow part of SRS operations, and are transmitted to only a few selected personnel with no response requirement to Site Lessons Learned. The Digests and Newsletters, are issued for general information and as possible training resources, and these transmittals require no formal evaluation, response, or tracking.

The Site Lessons Learned Program issued the following transmittals during the second half of 1994:

0 Directives - no new Directives were issued, but several Divisions completed corrective actions on Directive (94-1) during this time period.

3 Bulletins - 1) Recurring Bad Practices Produce Electrical Hazards
2) Failure to Use Lessons Learned
3) Steam System Overpressurization at SRTC

7 Notifications - Involving 25 lessons learned issues

0 Special Information Notices

6 Digests - Discussing 25 items that are occurring at SRS
25 Newsletters - Discussing events, general issues, difficulties and good practices associated with the commercial nuclear industry and DOE complex

Major Items

Five major action items were addressed by the Site Lessons Learned Program. They involved (1) a special investigation on the effects of not using the Lessons Learned Program; (2) development of a matrix linking the Self Assessment Criteria in WSRC Manual SCD-4 to the F Node of the SRS Root Cause Analysis Tree; (3) a cooperative effort with DOE-SR to revise the proposed DOE Standard for Lessons Learned Programs; (4) continued followup efforts associated with removal of suspect fasteners and polycarbonate air system lubricators and moisture separators; and (5) a continued effective working relationship with the Senior Electrical Review Board.

- The Site Lessons Learned Program issued a Bulletin that provided specific examples where lessons learned previously disseminated could have helped prevent recurring negative experiences at SRS, but did not due to failure of some facilities to properly respond to the lessons learned information. The whole purpose of the Site Lessons Learned Program is to identify and disseminate lessons learned by others so that actions can be taken to preclude recurrence at SRS. This Site Lessons Learned Bulletin pointed out five areas where some SRS personnel failed to learn from information disseminated to them. The areas discussed included: Lockout/Tagout errors continue despite issuance of four lessons learned transmittals on this subject; Improper resetting of tripped breakers and replacement of blown fuses (without investigation) continues even though a 1993 Site Lessons Learned Bulletin reported that this was in direct violation of the Conduct of Operations Manual; A condensate-induced water hammer at Hanford was the subject of two Site Lessons Learned Bulletins which included specific corrective actions developed by a specially appointed team that was approved by WSRC Senior Staff.

- To help address chronic facility occurrences, Site Lessons Learned developed the user friendly manual, WSRC-IM-94-62, which allows identification of programmatic causes of these occurrences. The manual is a matrix that correlates occurrence root causes (from the Site Manual WSRC-IM-91-15, Root Cause Incident Investigation Manual) to SCD-4 Facility Self-Assessment Criteria (programmatic

causes). Manual users can utilize the causes of recurring events to find the programmatic weaknesses which must be corrected to curtail recurrence.

- WSRC Site Lessons Learned and DOE-SR combined to provide a sustained effort to modify a proposed DOE Standard for Lessons Learned Programs. The effort played a significant role in producing important changes to the proposed standard. The initial standard proposal was too prescriptive and would have required significantly greater WSRC resources than presently expended to produce program compliance with the standard.

- Followup efforts on removal of lifting equipment suspect fasteners and polycarbonate air system lubricators and moisture separators (addressed in Site Lessons Learned transmittals from previous periods) continue.

  - Inspections of site lifting equipment has uncovered numerous items with suspect parts. Inspections have been completed on 294 (36%) pieces of lifting equipment at SRS with 518 additional inspections remaining. In the inspections completed to date, 113 pieces of equipment were found to contain suspect fasteners. Fastener replacement has been completed on 72 pieces of equipment.
  - To date 745 of 835 polycarbonate bowls identified have been removed from service or replaced with metal bowls. Six divisions are complete and the remaining three are scheduled to complete this year.

- The Site Lessons Learned Program continued an effective working relationship with the Senior Electrical Review Board (SERB), the Board:

  - Assisted the Lessons Learned Program with final disposition and closure of two 1993 transmittals involving fuses,
  - Provided guidance and concurrence for the lessons learned associated with a Bulletin about an employee drilling into a live 480 volt bus bar,
  - Used Site Lessons Learned Program materials in their electrical safety newsletter, the "Electrical Safety Express," for distribution to all site electrical personnel,
  - Provided screening guidance on several issues.

Significant Items Identified By Division Coordinators

One of the responsibilities of the Division Lessons Learned Coordinator is to notify the Site Coordinator of items occurring within his/her Division that might have a significant effect sitewide. This could be detected in any of a number of ways during the conduct of the Division Coordinator's duties, including the daily review of occurrence reports for the Division. The Site Coordinator screens the information and if deemed applicable the item could be acted upon either by inclusion in a transmittal, forwarding the item to the Site Safety Review Committee for formal review, or providing informal notification to the Site Safety Review Committee to ensure the committee was aware of the issue.

During the second half of 1994, Division Coordinators have responded well in this area by providing 104 notices to the Site Coordinator. The following items were or will be included in Site Lessons Learned transmittals:

TOPIC TRANSMITTAL

o	H-Canyon water hammer accident	Bulletin 94-10
o	Crane boom brake failure	Bulletin 95-1
o	Tubelox/Forglox scaffold materials	Notification 94-14
o	Fisher vacuum breakers	Notification 94-15
o	Rotameter failure in DWPF	Notification 94-15
o	Exposed leads from energized welding machine	Digest, 7/94
o	Employee fall, saved by safety equipment	Digest, 9/94
o	Unauthorized defeating of alarms	Digest, 9/94
o	Benzene bottle dropped and shattered	Digest, 10/94
o	Recurring inadequate control of key lock boxes	Digest, 10/94
o	Trend in procedure violations	Digest, 11/94
o	Fan lockout/tagout lessons	Digest, 11/94
o	Inadequate lightning protection system	Digest, 11/94
o	Inadequate ventilation lockout/tagout	Digest, 11/94
o	Potential inadequacies with safety analysis	Digest, 12/94
o	Inadvertent uncovering of transfer lines	Digest, 12/94
o	Off-site fork truck occurrences	Digest, 2/95
o	Mislabeled valves found during special walkdown	Digest, 2/95

Four additional items were forwarded to the SERB for disposition, while two other items were sent to the Occupational Safety and Hygiene Department for evaluation.

Status of Issues Disseminated - Requiring Response

Figure 2 indicates the Site Lessons Learned Program disseminated 29 items to the Division Lessons Learned Coordinators which required their formal response back to the Site Coordinator. Table 4 indicates that not all

items were applicable to all Divisions. Items applicable to a Division ranged from 3 items for five of the non-operations Divisions to a high of 26 for two of the operations Divisions. The number of items fully closed by each Division (evaluation and corrective action implementation completed) varies from 3 to 21. Four of the items transmitted during this period have been completely closed out by all 15 Divisions with two of these being closed by the Occupational Safety and Hygiene Department.

Normally, it is expected that closure for operations type Divisions is a more time consuming effort and will produce the majority of corrective actions. The 1994 performance of the Divisions continued to support this. A total of 19 items were transmitted to some or all of the non-operations Divisions. Of the 19 items, 12 have been closed and the 7 others await only 1 Division for closure.

- Evaluation

Table 4 shows that the detailed Division evaluation can often be completed by the Division Coordinator in the non-operations Divisions, but the complexity of the processes and facilities normally requires the Departmental experts to complete the evaluation for the operations Divisions. The Division Coordinators for HLWM, SW&ER, NMPD, E&CSD, RD, SRTC and Site Services have judged only 25 of 164 items (sum of items sent to 7 Divisions) sent to them to be not applicable (requiring no further Departmental evaluation).

- Corrective Action

During the second half of 1994, the 29 items transmitted to the Divisions have resulted in the Divisions generating 61 corrective actions associated with 21 different items. Those actions are briefly described in Table 5. Multiple corrective actions within the same Division for an item are counted as only 1 action in Table 4.

In addition, 26 more corrective actions were reported during this period for the items transmitted during the first half of 1994. The new corrective actions are those that are shaded in Table 5A. A total of 216 corrective actions have been generated for all items transmitted in 1994.

As of December 31, 1994, there were no corrective actions that had exceeded their completion due date. The corrective action that was reported late in the last Semi-Annual Review is now complete.

- Closure

On the average, the 15 Divisions have closed 71% of the items sent to them during the second half of 1994 (151 of the 214 items sent to the 15 Divisions). The operations Divisions have closed 65.9% of the collective items (108 of the 164 items sent to the operations Divisions) compared to 86.0% of the items for the non-operations Divisions (43 of the 50 items sent to the non-operations Divisions). Specific Division performance is shown in Table 4. It is expected that the more time consuming evaluations and the largest number of corrective actions will be associated with the operations Divisions. Therefore, the number of corrective actions is expected to increase as the open items are resolved.

Since program tracking was initiated, 61 of the 155 items transmitted have been closed by all Divisions. Thirty-one of those were closed during the last six month period. On the average, Divisions have closed out 86.8% (1095 of 1261 items sent to all divisions) of the transmittals assigned to them for evaluation.

Performance of Major Program Components

- Divisions Lessons Learned Coordinators

Ten Division Lessons Learned Coordinators were matrixed by each Vice President/General Manager to the Site Lessons Learned Coordinator. One Coordinator performed the duties for six different administrative Divisions. The performance of the coordinators has generally continued to improve or has remained at a high level. Tables 4 and 6 provide statistics on that performance. In most cases the lower performance areas were influenced by unusual job difficulties (e. g., personnel transfers).

- Division Coordinators review daily the reportable occurrences issued by their Division and notify the Site Coordinator if potential sitewide items are detected, or if an occurrence has high sensitivity to DOE or the public. All Division Coordinators periodically confirm that these daily reviews are being conducted. The Division Coordinators completed this review and report within specified time constraints an average of 97% of the time.

- A response from each Division Coordinator is required 30-days after receiving a Site Lessons Learned transmittal (requiring evaluation). These reports need only indicate the disposition of the item within the Division, but can contain any other appropriate status information. All 30-day reports due have been provided. Late submission of these reports remained steady at a low 5%.

- The number of overdue 30-day response reports and actual days overdue has improved, for most Divisions.

- Quarterly reports from the Divisions provide the status of all items which have not previously been closed out. All Divisions reported satisfactorily.

- All Division Coordinators are members of the Site Lessons Learned Committee (see paragraph below on Site Lessons Learned Committee) which evaluates the need to address items at the site level versus individual Division evaluations. Two meetings were held and average meeting attendance by the coordinators during this 6-month period improved from 82% to 93%.

The Division Coordinators continue to be effective in providing the Site Coordinator with timely notifications of items occurring in their Divisions that have potential for sitewide application (See Significant Items Section). NMPD (37) and HLWMD (29) were particularly good performers in this area. It is expected that the operations Divisions would dominate in this area.

- Site Lessons Learned Committee

The Site Lessons Learned Committee, chaired by the Site Lessons Learned Coordinator, is composed of Site Lessons Learned Engineers in OCIS and all Division Lessons Learned Coordinators. The committee meets to review and discuss all transmittals sent to the Division Coordinators which require Division evaluation. The purpose is to utilize synergy to identify issues which might require a sitewide action. Such issues would be referred to the Site Safety Review Committee or, in appropriate cases, to Division safety review committees.

Committee attendance for the two meetings held was good, averaging 93% of Division Coordinators in attendance. This was an increase over the last six month period (82%), and is above the goal of 90%. The synergy for a good site evaluation requires multiple disciplines and varied work experiences; therefore, a high attendance is desirable. Thirteen Divisions had 100% attendance during the second half of 1994 (NMPD, HLWM, RD, SRTC, SW&ER, E&CSD, ESH&QA, Security, Safeguards and Emergency Services,

Administration and Logistics, Operations Training & Assessment, Economic Development, Human Resources, and Chief Financial Officer Division). NMPD has attended all meetings since the initiation of the committee in March 1993. The committee has designated a number of issues for additional review by the Site Level Staff, but has recommended no issues for review by the Site Safety Review Committee. Committee members continue to provide input for productive discussions and member participation in discussions continues to increase.

- Site Safety Review Committee Participation

The Site Safety Review Committee (SSRC) provides liaison between Senior Management and the Site Lessons Learned Program, and reviews lessons learned issues transmitted to them by the Site Lessons Learned Coordinator or the Site Lessons Learned Committee. This component of the Lessons Learned Program has worked very effectively. The Site Coordinator promptly notifies the SSRC of items detected by the program 1) which may have sitewide applicability, or 2) which may be of special interest to the SSRC and other Senior Management. Items requiring formal SSRC review are followed up with a formal written request from the Site Coordinator.

No formal requests for SSRC review of a lessons learned item were requested by the Lessons Learned Program during this period.

Two issues were informally identified for the committee for their information.

Lessons learned items have been regularly addressed at the committee meetings and the Site Coordinator is a consistent participant in the discussions and presentations.

- Lessons Learned Item Tracking

To enhance the effectiveness of the Lessons Learned Program, significant, applicable items that are sent to the Division Coordinators for evaluation are tracked by the Site Coordinator through closure. Closure occurs when the Division Coordinators respond to the Site Coordinator and indicate that the Division evaluations have been completed and any designated corrective actions have been implemented.

A computer database is being used to perform tracking and reporting. Tracking of a Site Lessons Learned transmittal is initiated when the transmittal distribution of Division Coordinators is entered into the database at the time of dissemination. Division Coordinators are informed by the transmittal to provide an initial response within 30 days. The initial responses notify the Site Coordinator of any actions taken, including the names of Departmental reviewers involved in evaluation of the issue. The response information is incorporated in the database. Every quarter the Division Coordinators notify the Site Coordinator of the status of all items which have not been previously closed out. The computer tracking system informs the Site Coordinator of overdue responses and action items.

Parameters tracked by the system include item number and description, Division and Department Coordinators responsible, response and action due dates, evaluation and corrective action status, and corrective actions developed. The system is currently tracking about 20,000 total parameters associated with Lessons Learned transmittals. The system can provide quick and accurate responses to inquiries by Senior Management and the Site Safety Review Committee on corrective actions taken by specific Divisions on specified lessons learned issues. Enhancements incorporated during this time period have improved the database responsiveness to requests for information. It was used to develop the information and Tables for this report.

Appendix XI
Index of Professional and Industry Sources of Lessons Learned

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APPENDIX XI
INDEX OF PROFESSIONAL AND INDUSTRY SOURCES OF LESSONS LEARNED

There are many organizations external to DOE that are involved in similar work processes or operations, are confronted with similar problems, or have developed applicable innovations or good work practices. Many of these organizations produce publications, workshops, videos, and other material that contain valuable lessons learned. This index includes information on a number of organizations that produce information that is useful to DOE. The index includes organizational descriptions, highlights of learning material, and contact information.

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AMERICAN CHEMICAL SOCIETY (ACS

Organization Description
ACS is a not-for-profit scientific and educational association of professional chemical scientists. It offers a broad range of publications, meetings and other activities to promote scientific interest and inquiry.

Learning Materials
The American Chemical Society Publications Catalogue provides a listing of ACS publications and videos in the following areas:

Agricultural
Analytical
Biochemistry
Environmental / Health / Safety
Industrial & Applied
Organic / Inorganic / Organometallic
Physical / Colloid / Surface
Polymers / Polymeric Materials

Contact Information

American Chemical Society
Distribution Office, Dept.555,
P.O. Box 57136, West End Station, N.W.
Washington, D.C. 22037

Phone: (800) 227-5558
Fax: (202) 872-6067

AMERICAN FOREST AND PAPER ASSOCIATION (AFPA)

Organization Description
Formerly the National Forest Products Association, the AFPA promotes best building practices and wood product use.

Learning Materials
Technical publications include construction cost savers series, technical report series, and wood construction data series.

Contact Information
Forest and Paper Association
Attention: Publications Department
1250 Connecticut Ave., N.W., Suite 200
Washington, D.C. 20036

AMERICAN GLOVEBOX SOCIETY (AGS)

Organization Description
AGS provides information to the glovebox engineering profession through publications and an annual conference. The definition of a "glovebox" includes enclosures or barriers with and without gloves that service the nuclear, biomedical, pharmaceutical, semiconductor, microelectronic, and other industries where confinement or separation from the biosphere using differential pressure is required.

Learning Materials
AGS publishes *The Enclosure* and holds an annual conference.

Contact Information
The Enclosure
American Glovebox Society
2150 W. 29th Ave., Suite 310
Denver, Colorado 80211

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS (AIChE)

Organization Description
AIChE provides leadership in advancing the chemical engineering profession as its meets the needs of society. Each year AIChE holds two national meetings and one annual meeting. AIChE also produces two monthly publications, offers continuing education, sponsors research, conducts government and public outreach activities, provides employment services, offers technical publications, and publishes five periodicals.

Learning Materials
The AIChE publications catalogue provides a listing and description of publications in the following areas:

Environmental
Equipment Testing
Education
Bioengineering
Energy
Pollution Control
Safety
CCPS
Physical Property Data

Specific offerings include a monthly magazine, *Chemical Engineering Progress* and a monthly newspaper, the *AIChExtra*. Periodicals include the *AIChE Journal, International Chemical Engineering, Biotechnology Progress, Environmental Progress,* and *Process Safety Progress.*

Contact Information
AIChExpress Service Center
American Institute of Chemical Engineers
345 East 47th St,
New York, NY 10017-2395

Phone: (800) 242-4363
Fax: (212) 705-8400

AMERICAN INDUSTRIAL HYGIENE ASSOCIATION (AIHA)

Organization Description
AIHA is an organization of professionals dedicated to the occupational and environmental health of workers, their families, and the community.

Learning Materials
AIHA periodicals include the *American Industrial Hygiene Association Journal*, and *The Synergist*. Additional AIHA publications are listed in the AIHA Publications and Information Catalogue in areas such as:

Exposure Assessment
Environmental Quality
Ergonomics
Sampling / Instruction
Risk Identification / Control
Protective Clothing / Equipment
Computers / Communication

Contact Information
AIHA, Attn. Publication Orders
P.O. Box 27632
Richmond, VA 23261-7632

For Membership:
AIHA, Attn: Support Services
2700 Prosperity Avenue, Suite 250
Fairfax, VA 22031

Phone: (703) 849-8888
Fax: (703) 207-3561

AIR & WASTE MANAGEMENT ASSOCIATION

Organization Description
The Air & Waste Management Association is a nonprofit, technical and educational organization with 14,000 members in more than 50 countries. The Association represents many disciplines: physical and social sciences, health, law, engineering, and management. Exchange is fostered through technical, educational and policy programs, technical exhibitions, publications, videotapes, a peer review journal, and educational manuals.

Learning Materials
The Journal of the Air & Waste Management Association is published monthly. Additional Air & Waste Management Association publications are listed in the Association's Catalogue of Products and Services. Publications are available in the following areas:

Air Toxics
Rules & Regulations
Measurement Techniques & Innovations
Hazardous Waste Treatment
Solid Waste Combustion & Management

Contact Information
Membership Secretary
Air & Waste Management Association
P.O. Box 2861
Pittsburgh, PA 15230

Phone: (412) 232-3444
Fax: (412) 232-3450

AMERICAN PETROLEUM INSTITUTE (API)

Organization Description
The American Petroleum Institute was established in 1919 and was the first national trade association in the United States to encompass all branches of the petroleum industry.

Learning Materials
Publications, including health and environmental topics, are described in the API Publications Catalogue.

Contact Information
American Petroleum Institute
Publications and Distribution Section
1220 L St, NW
Washington, D.C. 20005

Phone: (202) 682-8375
Fax: (202) 692-4776

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

Organization Description
ASME is a major technical and educational organization representing engineers in the United States. ASME is one of the largest technical publishers in the world. ASME also holds over 30 technical conferences annually and sets many industrial and manufacturing standards.

Learning Materials
ASME has published more than 600 books, 18 quarterly transaction journals, and more than 500 codes and standards. These publications are listed in the ASME Publications Catalogue.

Contact Information
American Society of Mechanical Engineers
22 Law Drive, Box 2900
Fairfield, New Jersey 07007-2900

Phone: (800) 843-2763
Fax: (201) 882-1717

NATIONAL BOARD OF BOILER AND PRESSURE VESSEL INSPECTORS

Organization Description
The National Board of Boiler and Pressure Vessel Inspectors is an organization of chief inspectors charged with protecting lives and property. Much of the Board's work focuses on educating, training, and keeping the industry informed.

Learning Materials
Publications and seminars are listed in the Board's Publications and Seminars Catalogue.

Contact Information
The National Board of Boiler and Pressure Vessel Inspectors
Order Department
1055 Crupper Avenue
Columbus, OH 43229-1183

Phone: (614) 888--8320, Ext. 219
Fax: (614) 847-1828

AMERICAN SOCIETY OF SAFETY ENGINEERS (ASSE)

Organization Description
ASSE focuses on safety-related training, education, and networking. ASSE conducts national seminars in areas such as safety and health management, the environment, risk management, and construction safety and facility management.

Learning Materials
Books, films, training materials, proceedings, safety standards, directories and references are listed in the ASSE Publications Catalogue. Information is available in areas such as:

Accident Investigation
Construction Safety
Electrical Safety
Employee Training
Engineering & Design
Fall Protection
Fire Protection
Hazard Control
Industrial Ventilation & Hygiene
Occupational Safety & Health
Risk Control

Contact Information
ASSE-Dept. F.,
1800 East Oakton
Des Plaines, IL 60018-2187

Phone: (708) 692-4121, Ext. 18
Fax: (708) 296-3769

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

Organization Description
From the work of 132 technical standards-writing committees, ASTM publishes standard specs, tests, practices, guides, and definitions for materials, products, systems, and services. ASTM also publishes books containing reports on state-of-the-art testing techniques and their possible applications.

Learning Materials
ASTM technical publications are available in areas such as:

Analytical Techniques & Measurements
Biomedical Engineering
Construction Materials & Engineering
Electrical and Optical Materials
Environment & Safety, Fuels & Lubricants

Contact Information
American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103-1187

Phone: (215) 299-5585
Fax: (215) 977-9679

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS, CENTER FOR CHEMICAL PROCESS SAFETY (CCPS)

Organization Description
CCPS was established in 1985 as a Directorate of the American Institute of Chemical Engineers to focus on engineering practices that will help prevent or mitigate catastrophic process safety accidents.

Learning Materials
CCPS produces publications, and conducts seminars, training courses and research. Books, videotaped training courses, guidelines and proceedings are available.

Contact Information
Department G, Publications Sales Department
American Institute of Chemical Engineers
345 East 47 Street
New York, NY 10017

Phone: (212) 705- 7657
Fax: (212) 752-3294

CHEMICAL MANUFACTURERS ASSOCIATION (CMA)

Organization Description
CMA was founded in 1872. CMA develops and implements policies, programs, and services that benefit the industry and the public. Many of the Association's activities are related to protecting the environment and safeguarding employee and public health from potential problems associated with chemicals.

Learning Materials
CMA offers a user's guide to scientific findings, how-to manuals, workshops, meetings and audio/visuals. Information is available in areas such as:

Environment
Health & Safety
Federal Government Regulations

Contact Information
CMA Publications Fulfillment
2501 M Street, NW
Washington, D.C. 20037

Phone: (202) 887-1100

COMPRESSED GAS ASSOCIATION (CGA)

Organization Description
CGA, established in 1913, is dedicated to developing and promoting safety standards and safe practices in the industrial gas industry. More than two-hundred member companies from around the world work together to develop technical specifications, safety standards, and training and educational materials to promote compliance with these regulations and standards.

Learning Materials
Audiovisuals, publications, guides, handbooks and safety bulletins are available.

Contact Information
CGA Publications
1725 Jefferson Davis Highway, Suite 1004
Arlington, VA 22202-4102

Phone: (703) 412- 0900, Ext. 799
Fax: (703) 412-0218

FACTORY MUTUAL ENGINEERING AND RESEARCH (FME&R)

Organization Description
FME&R is a world leader in property loss control. Directed by Allendale Insurance and Arkwright and Protection Mutual Insurance, FME&R's primary objective is to help insureds protect from damage by fire, wind, explosion, boiler, pressure vessel and equipment accidents. FME&R conducts more than than 100 loss prevention and control seminars annually, drawing on more than 160 years of property loss expertise. FME&R also produces a wide range of training material.

Learning Materials
FME&R provides up-to-date seminars, booklets, videotapes, learning kits and other resourceas designed by training experts to help educate employees on how to do the right things to protect property from fire, severe weather conditions, or electrical or mechanical equipment breakdowns.

Contact Information
1151 Boston Providence Turnpike
Norwood, MA 02062

Phone: (617) 762-4300

FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

Organization Description
FEMA is a government agency responsible for preparing for and responding to emergencies.

Learning Materials
FEMA produces a variety of emergency management publications including topics such as emergency preparedness and response.

Contact Information
Federal Emergency Management Agency
P.O. Box 70274
Washington, D.C. 20024

THE FERTILIZER INSTITUTE

Organization Description
The Fertilizer Institute is a trade association representing the chemical fertilizer industry. The Institute holds several conferences each year.

Learning Materials
The Fertilizer Institute offers reports, publications, and audio-visual packages.

Contact Information
The Fertilizer Institute
501 Second Street, NE
Washington, D.C. 20002

Phone: (202) 675-8250

HAZARDOUS MATERIALS ADVISORY COUNCIL (HMAC)

Organization Description
HMAC is an international, non-profit membership organization representing shippers of varying size, carriers of all modes, container manufacturers and reconditioners, as well as emergency response and waste clean-up companies. HMAC is devoted to promoting safety in the domestic and international transportation and handling of hazardous materials, substances, and wastes. HMAC works closely with national and international governments and agencies as well as numerous other organizations to ensure that the views of industry are fully considered as new policies and regulations are formulated.

Learning Materials
HMAC provides a wide range of information services to its members including the *Courier* newsletter, *Federal Register Extract Service*, and authoritative seminars and conferences. HMAC also offers a range of training programs related to hazardous materials.

Contact Information
Hazardous Materials Advisory Council
Department 79222
Baltimore, MD 21279-0222

Phone: (202) 289-4550
Fax: (202) 728-1459

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. (IEEE)

Organization Description
IEEE, founded in 1884, is a worldwide technical professional society devoted to advancing the theory and application of electrical engineering, electronics and computing. IEEE serves over 320,000 electrical engineers, scientists and other professionals in over 150 countries. IEEE currently has 37 technical Societies and Councils, each devoted to a specific technical area.

Learning Materials
IEEE offers a monthly newsletter, an award-winning magazine, books, conference proceedings, periodicals, self-study courses, standards, and videos.

Contact Information
IEEE Customer Service
445 Hoes Lane
P.O. Box 1331
Piscataway, NJ 08855-1331

Phone: (800) 678- IEEE
Fax: (908) 981-9667

INDUSTRIAL RISK INSURERS

Organization Description
Industrial Risk Insurers, an association of some three dozen insurance companies, underwrites HPR (highly protected risk) properties in more than 70 countries.

Learning Materials
IRI produces a number of publications including:

The IRI Sentinel, a quarterly publication of loss prevention information.
OVERVIEW, a total management program for loss prevention and control. This program is described in a 100-page Manual and Forms Packet.
IRInformation, a comprehensive 3-volume set of loss prevention guidelines.
RSVP (Restore Shut Valves Promptly), an impairment handling program that includes a booklet, file folder, shut-off tags, riser labels, wallet card, etc.
The IRI Index of publications, slide presentations, films and videotapes.

Contact Information
IRI
400 Market St.
Philadelphia, Penn. 19106

Phone: (215) 925-5050
Fax: (215) 925-5549

NATIONAL ASSOCIATION OF CORROSION ENGINEERS (NACE)

Organization Description
NACE was established to educate its members about corrosion, materials performance and protection. NACE members work to find better ways of addressing safety, life of materials, and designs for corrosion prevention and control.

Learning Materials
NACE offers seminars, short courses, annual conferences, regional and section meetings, education programs, and publications.

Contact Information
NACE
Membership Services Department
P.O. Box 218340
Houston, TX 77218-8340

Phone: (713) 492-0535, Ext. 81
Fax: (713) 579-6694

NATIONAL ASSOCIATION OF MANUFACTURERS (NAM)

Organization Description
NAM is a national lobbying organization dedicated to manufacturers. NAM lobbies Congress, facilitates peer interaction, offers information services, and organizes grassroots events.

Learning Materials
NAM offers publications in areas such as industrial relations, legislative analysis and resources and environment.

Contact Information
NAM Publications Coordinator
1331 Pennsylvania Avenue, NW
Suite 1500 - North Tower
Washington, D.C. 20004-1703

Phone: (800) 637-3005
Fax: (202) 637-3005

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

Organization Description
NFPA is a non-profit organization committed to safeguarding people and property from fire through technical guidelines in codes and standards and educational activities. NFPA has over 60,000 members in fields such as fire service, government, architecture, engineering, health care, industry, education, transportation, business, and research.

Learning Materials
NFPA sponsors programs, seminars, and workshops for specialized training. NFPA also publishes *National Fire Codes*, encompassing over 280 NFPA codes and standards, and has developed a "Learn Not to Burn" program as an educational tool.

Contact Information
National Fire Protection Association
One Batterymarch Park, P.O. Box 9101
Quincy, MA 02269

Phone: (617) 770-3000

NATIONAL INSTITUTE FOR CHEMICAL STUDIES (NICS)

Organization Description
NICS is a non-profit organization formed in 1985 to bridge the information gap between industry, plants and government. NICS studies how well industry and public agencies manage risks to health, safety and the environment. Through various programs and publications, the Institute works to involve citizens in risk management.

Learning Materials
NICS has a toll free service to help citizens locate credible environmental information sources (800) 282-2796. In addition, NICS offers publications on topics such as pollution prevention, hazardous materials transportation, and emergency response.

Contact Information
National Institute for Chemical Studies
2300 MacCorkle Ave., S.E.
Charleston, WV 25304

Phone: (304) 346-6264 or (800) 282-2796
Fax: (304) 346-6349

NATIONAL SAFETY COUNCIL (NSC)

Organization Description
NSC was established in 1913 to protect life and promote health through safety awareness. NSC provides a comprehensive source of safety and health information and programs.

Learning Materials
NSC offers periodicals, training programs, publications, posters and software packages in areas such as:

- Safety & Health Management
- Compliance & Reporting
- Safe Workplace Conditions
- Employee Training

Contact Information
Central Region Office:

National Safety Council
P.O. Box 558
Itasca, IL 60143-0558

Phone: (800) 621-7619
Fax: (708) 285-0797

Western Region Office:

National Safety Council
303 Twin Dolphin Drive, Suite 520
Redwood City, CA 94065-1409

Phone: (800) 848-5588
Fax: (415) 508-8831

Northeastern Region Office:

National Safety Council
251 Salina Meadows parkway
Syracuse, NY 13212-4510

Phone (800) 432-5251
Fax: (315) 453-7932

Southeastern Region Office:

National Safety Council
3300 NE Expressway, Suite 7A
Atlanta, GA 30341-3941

U.S. GOVERNMENT PRINTING OFFICE (GPO)

Organization Description
GPO prints and acts as a central clearinghouse for government documents.

Learning Materials
GPO has more than 300 subject bibliographies covering topics in areas such as business, education, health, science, environment and defense. The GPO Sales Publications Reference File (PRF) contains more than 16,000 books, maps, posters, and reports.

Contact Information:
For a copy of the GPO catalogue:
Superintendent of Documents
U.S. Government Printing Office
Washington, D.C. 20402

The GPO Sales Publications Reference File is also available for online searches through the DIALOG Information Retrieval System.

U.S. NUCLEAR REGULATORY COMMISSION (NRC)

Organization Description
NRC's mission is to ensure that non-military uses of nuclear materials in the United States -- as in the operation of nuclear power plants -- are carried out with proper regard for the protection of public health and safety, of the environment, and of national security. NRC licenses nuclear reactor operations and possession and use of nuclear materials, including the transportation and disposal of nuclear materials and wastes; the safeguarding of nuclear materials and facilities from theft, damage, and sabotage; and inspection and enforcement activities.

Learning Materials
Available NRC information includes:

Formal Regulatory Issuances (Orders, Opinions & Decisions
Rules & Regulations
Regulatory Guides
Generic Letters, Bulletins, and Information Notices
National Codes & Standards
NRC Reports
Safety Research Data
News Releases & Speeches
Procurement & Contract Documentation

Contact Information
There are multiple ways of obtaining NRC information:

NRC's main Public Document Room is located at:
2120 L Street, N.W.,
Washington, D.C. 20555

Title 10, Chapter 1 of the *U.S. Code of Federal Regulations* (CFR), includes the regulations under which NRC conducts its licensing and regulatory activities.

Notices concerning proposed changes to rules and regulations can be received automatically by writing to:

Division of Information Support Services
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

For details about how to be placed on the NRC mailing list for Generic Letters, Bulletins & Information Notices, write DISS (above) or phone (202) 275-2060 or 275-2171.

For news releases and speeches or for general inquiries write:

NRC Public Affairs
Washington, DC 20555
Phone: (301) 415-8200

SOCIETY OF THE PLASTICS INDUSTRY (SPI)

Organization Description
SPI is a large trade association with many operating units, chapters, and committees that serve as the voice of the plastics industry. SPI cores services include:

- Federal & State Government Relations
- Technical & Regulatory Services
- Communications Programs
- Information Services
- Statistics
- Trade Shows/Conferences

Learning Materials
SPI offers an array of publications related to the plastics industry. SPI also offers conferences, exhibits, and education programs.

Contact Information
Society of the Plastics Industry
P.O. Box 753
Waldorf, MD 20604

Phone: (800) 541-0736 or (202) 371-5200
Fax: (202) 371-1022

SYSTEM SAFETY SOCIETY (SSS)

Organization Description
SSS is a non-profit organization of professionals dedicated to the safety of systems, products and services. The objectives of SSS include: to advance the Systems Safety state-of-the-art, contribute to an understanding of Systems Safety, disseminate newly developed knowledge about System Safety, and to establish standards for the Systems Safety discipline.

Learning Materials
SSS publishes the *Hazard Prevention Journal*, and offers proceeding from international conferences, a *Systems Safety Handbook* and additional publications.

Contact Information
System Safety Society
5 Export Drive, Suite A
Sterling, VA 22170

Phone: (703) 450-0310
Fax: (703) 450-1745

TECHNICAL ASSOCIATION OF PULP AND PAPER INDUSTRY (TAPPI)

Organization Description
TAPPI is committed to the technical advancement of paper and related industries. TAPPI provides educational materials and serves as a world-wide forum for exchange of technical information and research.

Learning Materials
TAPPI offers instructional videos for training programs, publications, and conference proceedings related to the pulp and paper industry.

Contact Information
TAPPI Service Line
Phone: (800) 332-8686 or (404) 446-1400
Fax: (404) 446-6947

Appendix XII
Applicable Training Documents

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APPENDIX XII
APPLICABLE TRAINING DOCUMENTS

Appendix XII contains a list of references that includes Department of Energy Orders, standards, handbooks, and specifications that provide guidance for developing training programs. This list was reproduced from HR-33's *Professional Development of Federal Technical Personnel*, Appendix A.

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Applicable Training Documents

The following Department of Energy standards, handbooks, and specifications include guidance for developing training programs.

1. ANSI/ANS 8.20 - 1991, American National Standard, NUCLEAR CRITICALITY SAFETY TRAINING.

2. ANSI/ANS 15.4 - 1988, SELECTION AND TRAINING OF PERSONNEL FOR RESEARCH REACTORS.

3. ANSI/ANS 3.1 1993, American National Standard for SELECTION, QUALIFICATION, AND TRAINING OF PERSONNEL FOR NUCLEAR POWER PLANTS.

4. Code of Federal Regulations, Title 10, part 830, NUCLEAR SAFETY MANAGEMENT.

5. Code of Federal Regulations, Title 10, Part 835, RADIATION PROTECTION FOR OCCUPATIONAL WORKERS.

6. DOE/EH-0256T, DOE RADIOLOGICAL CONTROL MANUAL.

7. DOE-HDBK - XXXX-94, DOE GUIDELINE, Guide to Good Practices for Alternative Systematic Approaches to Training.

8. DOE-HDBK- XXXX-94, DOE HANDBOOK, Training Program Handbook: A systematic Approach to Training (Note: This is a revision of the previously issued TAP 2 manual).

9. DOE Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 93-3 and 92-7, "IMPROVING THE TECHNICAL CAPABILITY IN DEFENSE NUCLEAR FACILITIES PROGRAMS AND TRAINING QUALIFICATION."

10. DOE/NE-0101T, DOE TRAINING ACCREDITATION PROGRAM, TAP 1, Training Program Manual, July 1991.

11. DOE/NE-0102T, DOE TRAINING ACCREDITATION PROGRAM, TAP 2, Performance-Based Training Manual, July 1991.

12. DOE-NE-STD-1001-91, DOE GUIDELINE, Guide to Good Practices for Training and Qualification of Instructors.

13. DOE Order 1324.2A, RECORDS DISPOSITION

14. DOE Order 3410.1B, TRAINING.

15. DOE Order 4700.1, PROJECT MANAGEMENT SYSTEM.

16. DOE Order 5480.6, SAFETY OF DEPARTMENT OF ENERGY OWNED NUCLEAR REACTORS.

17. DOE Order 5480.18A, ACCREDITATION OF PERFORMANCE-BASED TRAINING FOR CATEGORY A REACTORS AND NUCLEAR FACILITIES. (Note: Revising for issue as DOE Order 5480.18B.)

18. DOE Order 5480.19, CONDUCT OF OPERATIONS REQUIREMENTS FOR DOE FACILITIES.

19. DOE Order 5480.20A, PERSONNEL SELECTION, QUALIFICATION, TRAINING, AND STAFFING REQUIREMENTS AT DOE REACTOR AND NON-REACTOR NUCLEAR FACILITIES.

20. DOE Order 5480.22, TECHNICAL SAFETY REQUIREMENTS.

21. DOE Order 5480.23, NUCLEAR SAFETY ANALYSIS REPORTS.

22. DOE Order 5700.6C QUALITY ASSURANCE.

23. DOE-STD-1005-92, DOE GUIDELINE, Guide to Good Practices for Developing Learning Objectives.

24. DOE-STD-1006-92, DOE GUIDELINE, Guide to Good Practices: Evaluation Instrument Samples.

25. DOE-STD-1007-92, DOE GUIDELINE, Guide to Good Practices for Teamwork Training and Diagnostic Skills Development.

26. DOE-STD-1008-92, DOE STANDARD, Guide to Good Practices for Training Technical Staff and Managers.

27. DOE-STD-1009-92, DOE GUIDELINE, Guide to Good Practices for the Development of Test Items.

28. DOE-STD-1010-92, DOE GUIDELINE, Guide to Good Practices for Incorporating Operating Experience.

29. DOE-STD-1011-92, DOE GUIDELINE, Guide to Good Practices for Design, Development, and Implementation of Examinations.

30. DOE-STD-1012-92, DOE GUIDELINE, Guide to Good Practices for on-the-Job Training.

31. DOE-STD-1058-93, DOE STANDARD, Guide to Good Practices for Developing and Conducting Case Studies.

32. DOE-STD-1056-93, DOE STANDARD, Guide to Good Practices for Line and Training Manager Activities Related to Training.

33. DOE-STD-1060-93, DOE STANDARD, Guide to Good Practices for Continuing Training.

34. DOE-STD-1063-93, DOE STANDARD, Establishing and Maintaining A Facility Representative Program at DOE Nuclear Facilities.

35. DOE-STD-XXXX-94, DOE GUIDELINE, Guide to Good Practices for Table Top Analysis.

36. DOE-STD-XXXX-94, DOE STANDARD, Guide to Good Practices for Oral Examinations.

37. DOE-STD-XXXX-94, DOE GUIDELINE, Guide to Good Practices for Training Program Evaluation and Corrective Action.

38. DOE-STD-XXXX-94, DOE STANDARD, Guideline for Evaluation of Nuclear Facility Training Programs.

39. DOE-STD-XXXX-94, DOE STANDARD, Training Accreditation Program Manual: Requirements and Guidelines, (Note: This is a revision and combination of the previously issued TAP 1 and TAP 3 manuals.)

40. DOE/NE-0103T, DOE TRAINING ACCREDITATION PROGRAM, TAP 3, Training Program Support Manual, July 1991.

41. DOE-TSL- (current edition), DOE TECHNICAL STANDARDS LIST.

42. INSTRUCTOR COMPETENCIES, International Board of Standards for Training, Performance, and Instruction, Altschuler, Melvoin & Glasser, 30 South Wacker Drive, Chicago, IL, 60606.

43. MIL-STD-1379D, Military Standard, MILITARY TRAINING PROGRAMS, Department of Defense, December 5, 1990.

44. TG17-1993, MANAGEMENT OF NUCLEAR-RELATED TRAINING RECORDS, Nuclear Information and records Management Association (NIRMA), Inc., New York, NY.

Copies of department standards, handbooks, and specification are available for Government employees, and Department contractors, and laboratories from the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, Tennessee, 37831, (615) 576-8401, FAX (615) 576-2865. Others may obtain copies of these documents from the National Technical Information Service, 5285 Port Royal Rd., Springfield, Virginia 22161, (703) 487-4636, (800) 336-4700 (rush orders), FAX (703) 321-8547.

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Appendix XIII
Frequently Asked Questions About the DOE Lessons Learned List Service

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APPENDIX XIII
FREQUENTLY ASKED QUESTIONS ABOUT THE DOE LESSONS LEARNED LIST SERVICE

1. What is the DOE Lessons Learned List Service?

The DOE Lessons Learned List Service is the preliminary lessons learned dissemination tool for the Department of Energy Lessons Learned Program.

2 How does the DOE Lessons Learned List Service work?

The DOE Lessons Learned List Service is an automated, electronic mail messaging system that automatically distributes via E-mail preliminary lessons learned posted by subscribers. The lessons learned are distributed within minutes after they are posted to the system.

3. Why was the DOE Lesson Learned List Service created?

The DOE Lessons Learned List Service was created to increase the efficiency of lessons learned communications and to fulfill the need for a DOE Lessons Learned List Service as cited in the DOE Lessons Learned Standard.

4. What is the purpose of the DOE Lessons Learned List Service?

The purpose of the DOE Lessons Learned List Service is to facilitate the rapid transfer of urgent or important messages to key individuals. For lessons learned, the list service communicates urgent lessons learned to the Lessons Learned Coordinators and other key individuals.

5. Who can be a subscriber of the DOE Lessons Learned List Service?

The DOE Lessons Learned List Service is available only to DOE employees, contractors, and subcontractors.

Bill McQuiston is the only person that can approve a ".com" address for subscription on the DOE Lessons Learned List Service. He can be contacted at "mcw@tis.inel.gov."

6. How do I become a subscriber of the DOE Lessons Learned List Service?

To subscribe to the DOE Lessons Learned List Service, send a message to listmanager@lanl.gov" and type the following information in the body of the message:

```
subscribe doe_ll_listserv
end
```

A message will be sent to the list owner notifying him of your request for subscription. He will send a message to the computer program, "listmanager@lanl.gov", approving your subscription.

7. How do I get help using the DOE Lessons Learned List Service?

Preliminary lessons learned are posted to the DOE Lessons Learned List Service. A preliminary lesson learned is an adverse work practice or experience discovered during a preliminary investigation that is captured and shared to avoid recurrence. This type of lesson learned contains information that should be shared immediately throughout the DOE complex. A preliminary lesson learned can also be a "good work practice" or innovative approach that is captured and shared to promote efficiency of operations.

8. What type of information is posted to the DOE Lessons Learned List Service?

Preliminary lessons learned are posted to the DOE Lessons Learned List Service. A preliminary lesson learned is an adverse work practice or experience discovered during a preliminary investigation that is captured and shared to avoid recurrence. This type of lesson learned contains information that should be shared immediately throughout the DOE Complex. A preliminary lesson learned can also be a "good work practice" or innovative approach that is captured and shared to promote more efficient operations.

9. What is the format for the Preliminary Lessons Learned posted to the DOE Lessons Learned List Service?

The Lessons Learned Template provided in Appendix B of the DOE Lessons Learned Standard should be used as the format for information posted to the DOE Lessons Learned List Service. The template requires the following information:

- Title
- Identifier
- Date
- Originator
- Contact
- Name of ADC
- Name of Reviewing Official
- Priority Descriptor
- Functional Category(s)
- Keywords
- References
- Lessons Learned Statement
- Discussion of Activities
- Analysis
- Recommended Actions

Each of these items is defined in the DOE Lesson Learned Standard.

10. Are there any special precautions in posting Preliminary Lessons Learned to the DOE Lessons Learned List Service?

Always ensure that any lesson learned posted to the list service has been reviewed by an authorized derivative classifier prior to submission. Ensure that no Sensitive Unclassified or Classified material is posted to the list service.

11. How do I get a listing and a copy of the lessons learned posted to the DOE Lessons Learned List Service?

Any subscriber can get copies of all lessons learned posted to date. To accomplish this task, perform the following steps:

1. Send an E-mail message to "listmanager@lanl.gov" with the following command:

   index doe_ll_listserv
   end

2. The listmanager will send an E-mail message with the names of all files archived by the list service.

3. Decide which files you want and submit the following commands to "listmanager@lanl.gov" in an E-mail message:

   get doe_ll_listserv filename
   get doe_ll_listserv filename
   end

4. The listmanager will send an E-mail message with the text of each file requested in step 3.

The list manager automatically archives all messages for each month and places them in a file named "doe_ll_listserv.YYMM where YY is the last two digits of the year and MM is the two digits of the month. If you wanted to obtain the lessons learned for November and December 1994, you would send the following commands to the list manager:

get doe_ll_listserv doe_ll_listserv.9411
get doe_ll_listserv doe_ll_listserv.9412
end

12. How do I post a lesson learned to the DOE Lessons Learned List Service?

Investigate and develop the preliminary lesson learned using the template format provided in the DOE Lessons Learned Standard. Coordinate the preliminary lesson learned with your site Lessons Learned Coordinator.

Create a new message in your E-mail program.

In the TO block, enter "doe_ll_listserv@lanl.gov."

In the SUBJECT block, enter the required information according to the format listed in question 9.

Send or mail the message. Everything else is taken care of automatically.

13. What other commands are available from the list manager?

Several useful commands can be sent to the list manager (listmanager@lanl.gov) for the list service.

"listmanager@lanl.gov" is a computer program, so you must follow the command format exactly. Type the command on the first line of the body of your message. Always end the command, or command list if you submit more than one command, with an "end" statement so that the program does not try to interpret your signature as another command.

All commands must be sent to "listmanager@lanl.gov."

To subscribe to the list:

```
subscribe doe_ll_listserv
end
```

To unsubscribe to the list:

```
unsubscribe doe_ll_listserv
end
```

To list all recipients on the list:

```
who doe_ll_listserv
end
```

To obtain a description of the purpose of the list:

```
info doe_ll_listserv
end
```

To obtain a listing of the archived files:

```
index doe_ll_listserv
end
```

To obtain a file from the list:

```
get doe_ll_listserv filename
```

To submit more than one command in a command list:

```
who doe_ll_listserv
info doe_ll_listserv
end
```

14. Who is responsible for the maintenance of the DOE Lessons Learned List Service?

Bill McQuiston, the leader of the Lessons Learned Process Improvement Team, Dissemination Subteam, is responsible for the operation of the DOE Lessons Learned List Service. For information about the policies and procedures of the DOE Lessons Learned List Service, contact Bill at the following E-mail address "mcw@tis.inel.gov." Bill also approves subscribers with an E-mail address domain other than "gov."

15. Who is responsible for the maintenance of the DOE Lessons Learned List Service?

Meredith Gerke, Los Alamo National Laboratory, is responsible for the maintenance of the DOE Lessons Learned List Service. She sends the authorization messages for approving the subscription of all subscribers. She also monitors the content of material posted to the list service. Contact Meredith at E-mail address "mgl@lanl.gov."

16. If I have read all of the questions in this FAQ and still need help, how can I get additional help?

If you still have questions about the DOE Lessons Learned List Service, "doe_ll_listserv@lanl.gov," or if you have trouble getting the listserv to do what you want, contact Meredith Gerke, the listowner, at 'mgl@lanl.gov.'

Also, you can call Meredith Gerke (505) 667-0598, Rick Goodell at (806) 477-4009, or Bill McQuiston at (208) 526-7373.

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CONCLUDING MATERIAL

leview Activity:

)OE	Field Offices
)P	AL
:H	CH
:M	ID
JE	NV
JS	OR
RW	RL
:R	SF
AD	SR
:E	Fernald

National Laboratories
- BNL
- LLNL
- LANL
- PNL
- Sandia

Area Offices
- Amarillo Area Office
- Kirtland Area Office
- Princeton Area Office
- Rocky Flats Area Office

Preparing Activity:

DOE Lessons Learned Process Improvement Team, Documentation Sub-team

Project Number:

6910-0050

DE F 1300.3
1-94)

U.S. DEPARTMENT OF ENERGY

DOCUMENT IMPROVEMENT PROPOSAL

(Instructions on Reverse)

OMB Control No.
1910-0900
OMB Burden Disclosure
Statement on Reverse

Document Number	2. Document Title

). Name of Submitting Organization	4. Type of Organization *(Mark one)*
). Address *(Street, City, Zip Code)*	☐ Vendor ☐ User ☐ Manufacturer ☐ Other (Specify: _____)

Problem Areas (Attach extra sheets as needed.)

a. Paragraph Number and Wording

b. Recommended Wording

c. Reason/Rationale for Recommendation

Remarks

a. Name of Submitter *(Last, First, MI)*	7b. Work Telephone Number *(Include Area Code)*
c. Mailing Address *(Street, City, State, Zip Code)*	8. Date of Submission

OMB Control No.
1910-0900

INSTRUCTIONS: In a continuing effort to improve the U.S. Department of Energy (DOE) Technical Standards, this form is provided for use in submitting comments and suggestions for improvements. All users of DOE Technical Standards are invited to provide suggestions. This form may be detached, folded along the lines indicated, taped along the loose edge (DO NOT STAPLE) mailed to the address indicated or faxed to (615) 574-0382.

1. The submitter of this form must complete blocks 1 through 8.
2. The Technical Standards Program Office (TSPO) will forward this form to the Preparing Activity. The Preparing Activity will reply to the submitter within 30 calendar days of receipt from the TSPO.

NOTE: This form may not be used to request copies of documents, nor to request waivers, deviations, or clarification of specification requirements on current contractors. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

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U.S. Department of Energy Technical Standards Program Office
c/o Performance Assurance Project Office
P.O. Box 2009, Bldg. 9201-3
Oak Ridge, Tennessee 37831-8065