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OPERATIONAL READINESS AND OPERATIONAL READINESS REVIEW PROGRAM PLAN

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EG&G MOUND APPLIED TECHNOLOGIES

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EG&G MOUND APPLIED TECHNOLOGIES

OPERATIONAL READINESS AND
OPERATIONAL READINESS REVIEW
PROGRAM PLAN

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Date: 10/15/92

Vice President, Performance Assurance

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SECTION: OPERATIONAL READINESS/OPERATIONAL READINESS REVIEWS

TITLE: I. OR/ORR PROGRAM DESCRIPTION

PURPOSE

The purpose of this program and set of procedures is to describe Mound's plan to conduct and document Operational Readiness (OR) and Operational Readiness Reviews (ORR).

The OR process provides a formal, auditable methodology for obtaining operational readiness of Category 1, Category 2, and Category 3 hazard facilities, systems, processes, or operations. This effort and subsequent review must, at a minimum, consider environmental, safety, health, technical, operational, programmatic and administrative activities. The ORR is used as a contractor line management tool for making initial start and restart decisions. It is the intent of this policy to establish the requirements for Mound OR and ORR projects.

SCOPE

This program applies to all Mound operations requiring startup or restart authorization.

Subject to written exception/direction of the cognizant area office, DOE-AL Field Office, or DOE Headquarters, ORRs shall be performed under any of the following circumstances:

1. New
  - Initial start of a new activity.
  - Initiation of a major new process or operation.
2. Modification or Addition
  - Modifications to an existing facility or to a major system, process or operation, which potentially effects operational readiness.
3. Restart
  - Restart of a facility, major system, or major process after an outage of such duration as to have a potential impact on operational readiness.
  - Restart of a facility, major system, or major process subsequent to a shutdown for cause (significant disruption, accident, emergency, etc.).
  - Upon resolution of an "unreviewed safety question".
4. Other
  - Imposition of ORR requirements by the DOE.

Two graded classes of review (ORR) are included:

- * Level 1 ORR (ORR1) involves a complete Mound independent team review of the operational readiness activities. This team is chartered and reports to the affected Department Head. The review team's activities would normally be evaluated by a graded DOE Operational Readiness Evaluation (ORE) Team.

- * Level 2 ORR (ORR2) involves an internal line management review through the affected Department Head. The readiness would normally be assessed through a graded DOE ORE Team.

PROGRAM OBJECTIVE

Mound's objective is to operate or conduct all activities at or below the acceptable level of risk to the public, employees, environment, government property, and production capabilities. ORRs shall be performed and documented to ensure that these facilities, systems, operations, and processes as designed, have control measures in place consistent with safety, health, and environmental documentation, and will be operated by trained and qualified personnel using approved operating procedures.

EXTENT OF APPLICABILITY

A. Application

1. Mound operations are defined as those activities where Mound has assumed Environmental, Safety and Health (ES&H) responsibility, regardless of whether or not there is a facility involved. These activities can be determined by the contract provisions. Applicable DOE Orders include 5610.10, 5610.11, and 5610.13.
2. This procedure is limited to those Mound operations that involve hazards classed as either Category 1, 2, or 3. (Category 4 hazard operations require baseline conduct of operations ES&H reviews.) A preliminary hazard screening using the Mound Hazard Class Determination form (Appendix A) should be used to assess the hazard class of the facility process or operation. Applicable DOE Orders for hazard definitions are DOE 5480.23 and DOE/AL 5481.1b.

Category 1 Hazard (High). The hazard analysis shows the potential for significant offsite consequences.

Category 2 Hazard (Moderate). The hazard analysis shows the potential for significant on site consequences.

Category 3 Hazard (Low). The hazard analysis shows the potential for only significant localized consequences.

Category 4 Hazard (Standard Industrial Hazard/None). If the hazard is determined to pose no potential offsite, on site, or localized consequences, then the hazard source is a routine hazard. (Reference, PLG, Consensus Method for Hazard Classification for DOE Safety Analysis Guidance, August 27, 1991.)

B. Exclusions

1. Operations having hazards only of a type and magnitude routinely encountered and/or accepted by the general public.
2. The nuclear explosive safety of weapon designs and associated handling of assembled weapons.
3. Construction-related work activities.

REFERENCES See Appendix B.

DEFINITIONS AND ACRONYMS See Appendix C.

BACKGROUND

- A. The purpose of the OR effort is to establish that facilities, systems and processes can be operated safely, will perform as designed, will be operated by trained and competent personnel, that adequate consideration has been given to all hazards, and that operation will not create undue risk to employees, the public, or the environment. Most importantly, items that reduce the risk or control hazardous materials or processes are identified along with pertinent specifications.
- B. ORRs are initiated when the OR Team reports that the readiness effort (physical work, documentation, procedure closures, training, operator qualifications, etc.) is in advanced stage of completion. An independent ORR team compiles a list of all required items identified in safety analysis, safety analysis reports, technical safety appraisals, accident investigations, and corrective actions to identify everything that is required to operate at acceptable risk levels. The team then looks for these items, verifying that they are in place, can be used as required, and that there are no recognizable hazards that have not been addressed. Only after all critical-for-startup or critical-for-restart items are in place and operators are trained and qualified can an activity be declared ready. If an item is not in place, the review flags that item for immediate attention.
- C. Once an ORR is completed the activity is declared operationally ready by submitting a Readiness to Proceed Memorandum. This memorandum initiates the DOE approval process, leading to an Authorization to Proceed. The DOE shall independently verify the

contractor's ORR through an ORE. Since the level of DOE involvement is subject to various external factors, Mound policy is to perform as rigorous a review as warranted to assure, cost effectively, the readiness of the activity.

RESPONSIBILITIES

a. Line Organization

- (1) Prepare the facility so that it will be operated safely in accordance with applicable DOE orders, Mound policy and procedures, and within the authorization basis or envelope of safety. Guidelines for preparing for an ORR should be used for this purpose (OR/ORR Procedure I, Contractor Operational Readiness).
- (2) Propose the levels of ORR and startup approval required based on criteria in this document and obtain the appropriate Department Head and Dayton Area Office (DAO) concurrence.
- (3) Request the responsible Department Head appoint an ORR Chairman and charter a team when the facility is ready as described in (1) above. (The line organization will submit a proposed charter with this request.)

b. ES&H Department

- (1) Provide independent review support to insure that a facility or process complies with ES&H standards. (Reference MD-10374.)

c. Responsible Department Head

- (1) Assure overall quality of the OR/ORR process.
- (2) By use of the line organization recommendation, the facility status, and ORR criteria, establish if an ORR is needed and what level of approval is required. Formally notify DAO of the intent to perform an ORR.
- (3) Appoint and charter an ORR chairman and team (OR/ORR Procedure II, Contractor Operational Readiness Review).
- (4) Approve the ORR team plan. (Provide DOE DAO with information copies.)
- (5) Review the results of the ORR and submit a "Memorandum to Proceed" with a copy of the Final ORR Report to DAO. Memorandum initiates the DOE approval process and requests a DOE verification (Operational Readiness Evaluation)..

- (6) Support the administrative requirements of the DOE-ORE team if required.
- (7) Approve the start-up upon receipt of the DOE Authorization to Proceed Memorandum.
- (8) Assure needed support for corrective actions.

d. ORR Team

- (1) Write an ORR plan (OR/ORR Procedure II).
- (2) Obtain affected Department Head approval of plan.
- (3) Review plan with DAO, resolve any comments, and issue plan.
- (4) Conduct the review based on the directions given in the ORR procedure upon obtaining DAO approval of plan.
- (5) Validate findings with the line organization.
- (6) Write and submit the ORR reports.

* Interim Finding Report is the initial document which contains a comprehensive listing of all the ORR findings categorized per "A" or "B".

Category A findings are those involving deficiencies in systems, components, and structures, failure of which could significantly impact the safety of workers or others present in the operations area, the plant population, the public, or the environment. These findings must be resolved and closed prior to startup of the proposed operations.

Category B findings are those that have only minor safety impacts or which are not safety related. Category B findings do not necessarily have to be resolved prior to startup, but an approved action plan and schedule for resolution of these findings must be available then.

* Summary Management Report is an interim report that contains the validated category A and B findings, the corrective action plan, and a description of the methods used to track their closeout.

* Final Report closes the ORR process by combining the Summary Management Report, the Category A and B action plans, and the resolution of Category A Findings.

e. Manager OR Implementation

- (1) Provide technical support for operational readiness and operational readiness reviews.
- (2) Serve as Mound focal point and liaison for DOE ORR communication.

CRITERIA FOR THE NEED FOR AN ORR

The matrix in Figure 1 describes the level of ORR needed. All ORRs will require a DOE Authorization to Proceed Memorandum for start-up.

I. New Facilities, Systems, Operations Or Processes

These are facilities, systems, etc., which may not be covered by an existing SAR or a DOE accepted substitute for a SAR (i.e. a safety assessment or risk analysis). These projects will require the development of the SAR or SAR substitute before an ORR can be performed.

- Risk Analysis approved by Mound Line Management, ES&H Management, and DOE DAO.
- Safety Assessment (SA) with Operational Safety Requirements (OSR) approved by DOE AL.
- Technical Safety Requirements (TSR) approved by DOE AL (possibly DOE Headquarters).
- SAR approved by DOE AL (possibly DOE Headquarters).

The level of Mound ORR for a NEW FACILITY is based upon Category hazard determination.

II. Modifications Or Additions To Facilities, Systems, Operations Or Processes

An ORR is required if modifications or additions affect the operational readiness of a facility or major system, process, or operation. The primary factors that determine this effect are:

- The hazard level created by the modification/addition is new or different from the approved operation.
- The changes required are not covered under the existing SAR or approved safety documentation.

The level of ORR for a MODIFICATION/ADDITION is determined by the hazard level, ORR1 for high/moderate, ORR2 for low, and baseline conduct of operation review for standard industrial hazard (SIH)/none.

III. Restart Of Facilities Systems, Operations Or Processes

A restart of an operation after shutdown for safety reasons is covered by SEN 16B-91 and by Mound Policy and Procedure 9342, Work Curtailment/Restart. A shutdown is defined as a cessation of operation which is formally documented by the authority taking this action. A temporary cessation or limiting of operations by the operating group to resolve a safety question or to adjust the process will not require an ORR unless accompanied by a formal written shutdown notice.

The level of ORR for a RESTART Project would be based upon the hazard determination or according to the authority responsible for shutdown (i.e. Any DOE shutdown would automatically require an ORR1).

ORR1/ORR2 DECISION MATRIX

OR PROJECT	HAZARD CATEGORY		
	CATEGORY 1	CATEGORY 2	CATEGORY 3
NEW FACILITY MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 ORE *
MODS/ADDITIONS MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 ORE *
RESTART MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 * ORE *

ORR2 * = Any DOE Shutdown of a Category 3 will require an ORR1 level review.

ORE * = DOE Graded Review.

ORR1 A complete Mound independent team review of operational readiness activities.

ORR2 An operating management review through the responsible Mound Department Head.

Figure 1. ORR1/ORR2 Decision Matrix

DATE: 10/07/92

SECTION: OPERATIONAL READINESS/OPERATIONAL READINESS REVIEWS

TITLE: II. CONTRACTOR LINE MANAGEMENT READINESS PROCEDURE

PURPOSE

The purpose of this procedure is to describe Mound's process for achieving line management, operational readiness for facilities, systems, operations, and processes.

SCOPE

This procedure applies to all Mound operations requiring startup and restart authorization.

OBJECTIVE

Mound's objective is to operate all activities at or below an acceptable level of risk to the public, employees, environment, government property, and production capabilities. The Operational Readiness (OR) process is intended to establish as rigorous and cost effective preparation as practical regardless of the subsequent verification review (i.e. Operational Readiness Review, ORR, DOE Operational Readiness Evaluation, ORE).

RESPONSIBILITIES

- o The line organization's Operational Readiness Team (OR) is responsible for preparing the facility for safe operation (not the ORR team). This preparation should proceed independently and prior to the ORR.
- o The ES&H Department is responsible for providing independent review support to insure that a facility or process complies with ES&H standards.

PROCEDURE

(Reference Figure 1, Operational Readiness Process)

OR Project Leader

1. Determine Hazard Level of project.

- o Use Mound Hazard Class Determination Form as initial assessment (Reference Appendix A).

- o Review against existing safety envelope to determine if additional documentation is required for clarification. (Safety envelope = approved DOE SAR, CSR, SA, or an RA)

- o Obtain Facility Engineering, Safety, and Oversight Committee support as necessary.

2. Submit Mound Hazard Class Determination to Manager, Radiological and Industrial Safety.

Manager, Radiological and Industrial Safety

3. Approve Hazard Class Determination. Reference DOE 5481.1b, DOE 5480.23, and "Consensus Method for Hazard Classification for DOE Safety Analysis", PLG, 8/27/91.

Category 1 (High). If a given hazard source has the potential for significant off site consequences, then the hazard source is a category 1 hazard.

Category 2 (Moderate). If the hazard source does not pose offsite consequences but has the potential for significant on site consequences, then the hazard source is a category 2 hazard.

Category 3 (Low). If the hazard source does not pose offsite or on site consequences but has the potential for significant localized consequences, then the hazard source is a category 3 hazard.

Category 4 (SIH/None). If the hazard is determined to pose no potential offsite, on site, or localized consequences, then the hazard source is a "routine hazard".

4. Inform OR team of additional safety envelope requirements.

- Risk Analysis (RA)
- Safety Assessment (SA)
- Safety Analysis Report (SAR)
- Technical Safety Requirements (TSR)

OR Project Leader

5. Propose the ORR level along with the rationale used, proposed project milestones, and estimate the date for the start of the ORR. (Figure 2, ORR1/ORR2 Decision Matrix)

ORR1 requires a complete Mound independent team review of the state of operational readiness. The review team's activities is subject to an evaluation of a DOE Operational Readiness Evaluation (ORE) Team. This level is required for Category 1 and 2 hazard classification.

ORR2 requires an internal operating management review by the responsible Department Head. The readiness is normally assessed by DOE through an evaluation by a DOE Area Office Graded ORE. This level of review is required, as a minimum, for Category 3 classifications.

(Category 4 Hazard Classification projects require the baseline readiness efforts as outlined by Mound's Conduct of Operations Procedures.)

6. Obtain concurrence from the responsible Department Head.

Concurrence for the ORR level and approval level must be formally documented.

Department Head

7. Inform DAO of the ORR level, ORR Schedule, and the proposed approval level.

OR Project Leader

8. Prepare and make available the following documentation as appropriate according to Figure 3, Operational Readiness Matrix Requirements.

- o Conduct of Operations Self-Assessment Survey. (Reference Appendix D, example.)

Survey and Mound Operations Manual, MD-10361, are available from the Mound Conduct of Operations Program Manager.

- o A MORT type system analysis of the area under review (DOE 76-45/4, SSD C-4 Revision 2).

II-3.

- o An approved "Hazard Class Determination" (Reference #3. above).

- o A project ES&H Normal Operations Readiness Check Sheet and associated documentation (Reference Appendix E.)

Checklist shall be approved by Mound's Independent Safety Review Coordinating Committee.

Documentation must include:

- Criteria of Review
- Scope of Review
- Basis of Review
- All Findings of Review
- Final approved resolutions of Findings

- o The appropriate approved safety documents.

- General Operating Procedures
- A formal Risk Assessment (RA)
- A Safety Assessment (SA)
- Operational Safety Requirements (OSR)
- Technical Safety Requirements (TSR)
- A final Safety Analysis Report (SAR)

- o Approved and documented operating and safety procedures for equipment and facility operation.

These procedures must be up to date, reflect current DOE/AL Orders, the OSR or TSR (or other approved safety envelope document), and document the requirements for configuration control of procedures, hardware and drawings.

Additionally, documented results of procedure walkthroughs must be available.

- o A quality plan for the facility and process.

In the context of operational readiness, the quality plan must describe the configuration control for maintaining the safety envelope.

- o Appropriate as-built drawings for the facility, process, and equipment. (These drawings document original design intent and are covered by Mound Drawing Control and Approval procedures.)

- o Calibration and maintenance records and manuals for the process and equipment.

Documentation of compliance with DOE 4330.4A Maintenance Management Program.

- o Documentation of personnel qualifications, training requirements, and completed training. Documentation includes evidence of personnel understanding of the general operating procedure, OSR or TSR, and LOOs.

- o Records of recent external safety reviews and corrective actions taken.

Documentation of recent normal safety reviews with corrective actions taken.

Particular emphasis should be placed on the actions resulting from any related accident investigation.

- o A documented program to verify that LOOs are met prior to any operation that requires LOO surveillance.

In addition, the following should be available:

- o The system hardware for inspection.

Design information, acceptance test records, and dry runs may be requested by the ORR and ORE.

- o Operators and key management for interviews. The attitude and knowledge of operators and management will be an important consideration in the ORR.

9. Request the Department Head approval of readiness effort.

o Submit operational readiness report summarizing effort and presenting supporting documentation (or note location of supporting documentation) to Senior Manager.

OPERATIONAL READINESS (OR)
PROCESS
PAGE 1 OF 2

Figure 1. Operational Readiness Process
II-7.

OPERATIONAL READINESS (OR)
PROCESS
PAGE 2 OF 2

Figure 1. Operational Readiness Process (Continued)
II-8.

ORR1/ORR2 DECISION MATRIX

OR PROJECT	HAZARD CATEGORY		
	CATEGORY 1	CATEGORY 2	CATEGORY 3
NEW FACILITY MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 ORE *
MODS/ADDITIONS MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 ORE *
RESTART MOUND DOE	ORR1 ORE	ORR1 ORE	ORR2 * ORE *

ORR2 * = Any DOE Shutdown of a Category 3 will require an ORR1 level review.

ORE * = DOE Graded Review.

ORR1 A complete Mound independent team review of operational readiness activities.

ORR2 An operating management review through the responsible Mound Department Head.

Figure 2. ORR1/ORR2 Decision Matrix

OPERATIONAL READINESS REQUIREMENTS
MATRIX

REQUIREMENT	HAZARD LEVEL			
	ORR1 High Cat. 1	Mod. Cat. 2	ORR2 Low Cat. 3	SIH/None Cat. 4
MORT	R	R	O	O
Hazard Class.	R	R	R	R
Conduct of Oper. Self-Assess.	R	R	R	O
ES&H Reviews	R	R	R	R
Safety Envelope (i.e. RA, SA, OSR, TSR, SAR)	R	R	R	O
Formal Procedures	R	R	R	R
Quality Plan	R	R	R	O
* As-Built Drawings	R	R	R	R
Maint. & Calib. Records	R	R	R	R
Training Document.	R	R	R	R
LCO Verification	R	R	R	N
R = Required O = Optional N = Not Required				

* Appropriate level of as-built drawings.

Figure 3. Operational Readiness Requirements Matrix
II-10.

DATE: 10/07/92

SECTION: OPERATIONAL READINESS/OPERATIONAL READINESS REVIEWS
TITLE: III. CONTRACTOR OPERATIONAL READINESS REVIEW 1 PROCEDURE

PURPOSE

The purpose of this procedure is to describe Mound's operational readiness review process.

SCOPE

This procedure covers the Mound graded level 1, HIGH or MODERATE Hazard, of operational readiness review. ORR1 involves a complete Mound independent team review of the operational readiness activities. The review team's activities would normally be evaluated by a graded DOE Operational Readiness Evaluation (ORE) Team.

ORR1 PROCEDURE (Reference Figure 1, ORR1 Process)

DOE DAO	1. Schedule DOE ORE and provide ORE Plan information.
Senior Manager	2. Review readiness documentation and facility. 3. Provide a formal briefing for appropriate Department Head. Briefly review documentation supporting readiness of project. (Reference Figure 2, Operational Readiness Requirements Matrix)
	4. Submit appropriate ORR1 documentation for Department Head approval. A request for an ORR1 chairman and team. A draft ORR1 Team Charter. (Reference example, Appendix F.) A list of potential ORR1 Chairmen.
Department Head	5. Review the request for an ORR1 from the Line Organization. 6. Issue the final ORR1 charter which includes: - Purpose of the ORR1; - Level of ORR1 approval ultimately required;

III-1.

- The specific operations to be covered;
- Proposed time frame of ORR1 completion;
- The person in the line organization who will serve as point of contact;
- Special resources required or situations to be addressed.

7. Appoint the ORR1 chairman per the following criteria:

- Be independent of the organization being reviewed;
- Have Mound training in conducting ORRs;
- Have technical familiarity with the activity to be reviewed;
- Have had experience in leading safety investigations such as an accident investigation;
- Have demonstrated leadership skills;
- Be able to devote enough time and commitment to produce a quality review in a reasonable time frame.

ORR1 Chairman

8. Determine resources required for review and recommend ORR1 team. Team criteria includes:

- Be independent of the organization being reviewed and, if possible the Operational Readiness Process for the facility in question;
- Be knowledgeable in a discipline relevant to the review such as quality, ES&H or the technology area being reviewed;
- Have time and be available to provide a quality product in a timely manner.

9. Submit team recommendations to affected Department Head.

Department Head

10. Approve ORR1 team selection.

ORR1 Chairman

11. Develop the ORR1 Plan based on the ORR1 Charter.

-Assemble team for plan development as required.

-Develop ORR1 Team MORT type logic or reference the operational readiness MORT as required.

-Document team methodology for determining Category A Findings, Category B Findings including procedure for changing finding categories.

12. Submit ORR1 Plan to affected Department Head.

-Format contents per Appendix G.

Note: The ORR1 and ORE should be scheduled relatively close in order to avoid questions related to the maintenance of declared readiness.

Department Head

13. Approve plan and send a copy to the DOE Area Office for concurrence.

DOE DAO

14. Inform Mound of ORR1 Plan concurrence.

ORR1 Team

15. Start review as near as practical to the specified dates as they appear in the ORR1 Plan.

(a) Initial Entry

* The Operational Readiness Team should prepare a detailed briefing covering the items listed in Contractor Operational Readiness Procedure, Figure 2. Operational Readiness Requirements Matrix, and any other documentation shown important by the MORT analysis. Documentation of these items should be presented to the ORR1 Team before the initial meeting to allow review.

(b) Operation Review

* Physical Review

This will involve direct verification of the specific hardware, personnel, management control, documentation and programmatic areas to be reviewed, along with additional checking within the associated areas at their logical interfaces.

For example:

- Human factor engineering considerations;
- Conformance and adequacy of design;
- Conformance with quality checks;
- Conformance with component and system operation checks;
- Susceptibility to damage;

- Conformance with calibration and maintenance requirements;
- Availability of spare parts.

As a minimum, the related interfaces of documentation and management controls include:

- Approved safety documentation coverage (SA or SAR);
- Completeness of as-built system;
- Correctness and completeness of operating procedures;
- Completeness of operation;
- Completeness of manuals and documentation for maintenance and operations;
- Environmental reviews;
- Safety and health reviews. (Reference documentation supporting ES&H Normal Operations Readiness Checksheet, Appendix E.)

NOTE:

The physical review is a final verification by the ORR1 Team that all recognizable hazards have been identified in the workplace and that the appropriate actions have been taken to protect the environment and personnel safety and health.

* Personnel Review

Examples include:

- Training and certification of operating personnel;
- Demonstrated knowledge/capability of personnel.
- Relevant Mound Job Evaluation Documents (JED's).
- Relevant personnel Job Results Analyses (JRA's).
- Relevant medical certifications.

* Administrative Systems Review

This will involve a review of pertinent administrative/control documents as well as other communications used in the management of the operation to assess the most effective administrative system. Examples include job schedules, job instructions and procedures, training plans and records, instructions to the operational personnel, and Conduct of Operations self assessment surveys.

The mechanisms/processes for elevating operating problems quickly to the highest appropriate level of management shall be evaluated. Assignment of responsibility for corrective action and for facility management generally shall be considered in the evaluation.

The most recent procedures shall be used at all locations. Review responsibility will be allocated in such a fashion as to maximize individual expertise. In the case where procedures are not available at a particular time, the team shall review them as soon as they become available, assuring adequacy before completion of the ORR or its final phase.

The system for configuration management shall be reviewed, including document and design control, operating procedures, maintenance of appropriate as-built drawings, control of procurement and acceptance of replacement parts and materials, and the processes for selecting correct replacements.

ORR1 Team

16. Document, track, and maintain a current list of all observations, required follow-up actions, and findings throughout the course of the review.

All occurrences of nonconformance or inability to verify are to be noted. Any situation where the prepared checklist or verification guide seems to be inadequate, shall initiate an effort to upgrade the checklists or guides. The same pertains to obvious errors or omission within them.

As soon as practical, discussion of the observations and findings shall take place between team members and operating personnel in trying to assess their validity and if the finding/observation is determined to be valid.

17. Coordinate the reinvestigation that may be necessary to provide a correct and consistent statement of the facts supporting the findings to be reported.

After release of the findings in draft form to the designated management representative, the line organization will be provided an opportunity to verify accuracy.

Items requiring correction shall be identified as:

"A"- findings are those involving deficiencies in systems, components, and structures, failure of which could significantly impact the safety of workers or others present in the operations area, the plant population, the public, or the environment. These findings must be resolved and closed prior to startup of the proposed operations.

"B"- findings are those that have only minor safety impacts or which are not safety related. Category B findings do not necessarily have to be resolved prior to startup, but an approved action plan and schedule for resolution of these findings must be available then.

18. Issue the ORR1 Interim Findings Report to the Operational Readiness team, management, and the Department Head.

Concurrence of all findings is expected from the entire ORR1 team. The existence of dissenting opinions or qualified sign offs is taken as an indication of incomplete facilitation or incomplete investigation and will need to be resolved.

Report format to include:

- Organization being reviewed;
- Type of review;
- References that have additional information concerning the finding, requirements, responses, or completed actions;
- Finding number;
- Date;
- Appraiser;

-Description of finding:

- * Title
- * Summary Description
- * Basis
- * Criteria
- * Related Finding
- * Actions necessary for closeout.

Operational Readiness Team

19. Develop corrective action plan for all findings.

Root Cause analyses should be used as appropriate in developing corrective action plans.

OR Project Leader and
ORR1 Chairman

20. Issue Summary Management Report to team members and Mound management, detailing the findings and corrective action plan. Format to include:

- Summary;
- Generic concerns;
- Conclusions;
- Recommendations to management;
- Listing of all validated category A findings;
- Listing of all validated category B findings;
- Category A action plan;
- Category B action plan;
- Description of methods used to track closeout of all category A/B findings.

In general, the Summary Management Report identifies the actions to be taken to ensure resolution of ORR1 findings. It is used as a basis for the Final Report, and is included as an appendix to that document.

It should be noted that the Interim Findings and Summary Management Reports may be combined depending upon the complexity of the OR Project.

OR Project Leader

21. Coordinate the OR team's implementation of the ORR1 corrective action plan.

22. Report completion of all "A" finding corrective actions to the ORR1 Chairman.

Note: "B" findings must be tracked and reported on a monthly basis until resolved.

23. Verify resolution of all "A" Findings.

24. Issue Final Report to the Department Head. Report format includes:

a. Summary

Gives the reader a broad perspective of the reports contents. It will include:

- A brief statement of the pertinent facts.
- A list of significant findings.
- A recommendation that the activity is ready to operate at an acceptable level of risk.
- A statement of justification that all Category A findings have been resolved.
- A statement that an approved plan has been provided for resolution of remaining Category B findings.

b. Introduction

States the purpose of the ORR1, summarizes the ways in which the review was expected to accomplish its purpose, and identifies team members. It is to include:

- Objectives sought;
- Scope of review;
- Period of performance of review;
- Identification of team members, individual expertise and areas of responsibilities.

c. Review Process

Prescribes the methods used to accomplish the review. This includes descriptions of how information was accumulated, recorded, correlated, verified, analyzed, and reported. It must also include the description of the methods used to gain perspective and ensure credibility, criteria used to evaluate information, and processes used to develop additional criteria.

d. Findings

Describes the findings per the Management Summary Report:

- Includes a statement on the final resolution of all Category A Findings.
- Includes a statement on the approved corrective action plan for all Category B Findings.

e. Observations

Presents information on areas that may need management attention but do not result in findings.

f. Concurrence

Contains the signatures of all team members or statements explaining nonconcurrence.

g. Appendices

Contains documents or information not appropriate for the main body of the report but in support of it. This may include:

- Team members' biographies;
- Additional sources of information;
- Findings reports;
- ORR1 charter directives, etc.

Department Head

25. Approve final report and send copies with "Memorandum to proceed" to DOE Area Office.

Memorandum states Mound's readiness for a DOE Operational Readiness Evaluation (ORE).

DOE Area Office

26. Conduct ORE.

An ORE basically has the objective of verifying the completeness of the contractor ORR1.

27. Issue ORE Interim Report on findings.

OR Project Leader

28. Develop and submit Corrective Action Plan.

Department Head

29. Approve ORE Corrective Action Plan and forward to DOE Area Office for concurrence.

DOE Area Office

30. Obtain Corrective Action Plan approval.

OR Project Leader

31. Track Corrective Actions to completion and submit final ORE Corrective Action Report.

Department Head

32. Approve final ORE Corrective Action Report and submit to DOE Area Office.

DOE Area Office

33. Verify corrective actions.

Department Head

34. Issue "Authorization to Proceed".

35. Authorize operational startup.

Figure 1. ORR1 Process
III-11.

ORR1 PROCESS
PAGE 2 OF 2

Figure 1. ORR1 Process
III-12.

OPERATIONAL READINESS REQUIREMENTS
MATRIX

REQUIREMENT	HAZARD LEVEL			
	ORR1 High Cat. 1	Mod. Cat. 2	ORR2 Low Cat. 3	SIH/None Cat. 4
MORT	R	R	O	O
Hazard Class.	R	R	R	R
Conduct of Oper. Self-Assess.	R	R	R	O
ES&H Reviews	R	R	R	R
Safety Envelope (i.e. RA, SA, OSR, TSR, SAR)	R	R	R	O
Formal Procedures	R	R	R	R
Quality Plan	R	R	R	O
* As-Built Drawings	R	R	R	R
Maint. & Calib. Records	R	R	R	R
Training Document.	R	R	R	R
LCO Verification	R	R	R	N
R = Required O = Optional N = Not Required				

* Appropriate level of as-built drawings.

Figure 2. Operational Readiness Requirements Matrix
III-13.

SECTION: OPERATIONAL READINESS/OPERATIONAL READINESS REVIEWS

TITLE: IV. CONTRACTOR OPERATIONAL READINESS REVIEW 2 PROCEDURE

PURPOSE

The purpose of this procedure is to describe Mound's operational readiness review process.

SCOPE

This procedure covers the Mound graded level 2, LOW Hazard, of operational readiness review. ORR2 involves a rigorous Mound review of the operational readiness activities through an appropriate Department Head team review. The review team's activities would normally be evaluated by a graded DOE Operational Readiness Evaluation (ORE) Team.

ORR2 PROCEDURE (Reference Figure 1, ORR2 Process)

DOE DAO

1. Schedule DOE ORE and provide ORE Plan information.

Senior Manager

2. Review readiness documentation and facility.

* Physical Review

This will involve direct verification of the specific hardware, personnel, management control, documentation and programmatic areas to be reviewed, along with additional checking within the associated areas at their logical interfaces.

For example:

- Human factor engineering considerations;
- Conformance and adequacy of design;
- Conformance with quality checks;
- Conformance with component and system operation checks;
- Susceptibility to damage;
- Conformance with calibration and maintenance requirements;
- Availability of spare parts.

As a minimum, the related interfaces of documentation and management controls include:

- Approved safety documentation coverage (SA or SAR);
- Completeness of as-built system;
- Correctness and completeness of operating procedures;
- Completeness of operation;
- Completeness of manuals and documentation for maintenance and operations;
- Environmental reviews;
- Safety and health reviews. (Reference documentation supporting ES&H Normal Operations Readiness Checksheet, Appendix E.)

* Personnel Review

Examples include:

- Training and certification of operating personnel;
- Demonstrated knowledge/capability of personnel.
- Relevant Mound Job Evaluation Documents (JED's).
- Relevant personnel Job Results Analyses (JRA's).
- Relevant medical certifications.

* Administrative Systems Review

This will involve a review of pertinent administrative/control documents as well as other communications used in the management of the operation to assess the most effective administrative system. Examples include job schedules, job instructions and procedures, training plans and records, instructions to the operational personnel, and conduct of operations self assessment surveys.

The mechanisms/processes for elevating operating problems quickly to the highest appropriate level of management shall be evaluated. Assignment of responsibility for corrective action and for facility management generally shall be considered in the evaluation.

The most recent procedures shall be used at all locations. Review responsibility will be allocated in such a fashion as to maximize individual expertise. In the case where procedures are not available at a particular time, the Senior Manager shall review them as soon as they become available, assuring adequacy before completion of the ORR.

The system for configuration management shall be reviewed, including document and design control, operating procedures, maintenance of appropriate as-built drawings, control of procurement and acceptance of replacement parts and materials, and the processes for selecting correct replacements.

Department Head

3. Select a department review team.

For example:

- Manager Operational Readiness Implementation.
- Independent technical support such as a chairman of a safety overview committee.
- ES&H representative such as the chairman of the Independent Safety Review Coordinating Committee.

Senior Manager

4. Provide a formal briefing for Department Head Team.

Briefly review the operational readiness effort and documentation that supports readiness status. (Reference Step 1.)

Review documentation supporting walkdown of procedures.

5. Conduct a facility tour for Department Head Team.

This tour is a final verification by the Department Head Team that all recognizable hazards have been identified in the workplace and that appropriate actions have been taken to protect the environment and personnel safety and health.

6. Document any findings in a formal Interim Report.

Report format to include:

- a. Summary of Review.
  - Date
  - Appraisers
  - Methodology
- b. Description of findings
  - Title
  - Summary Description
  - Basis
  - Criteria
  - Related Finding
  - Actions Necessary for Closeout

Root Cause analyses should be used as appropriate in developing corrective action plans.

Department Head

7. Approve Interim Report.

Senior Manager

8. Submit Final ORR2 Report for approval.

Final ORR2 report includes resolutions of findings resulting from Department Head facility tour.

Report format includes:

- a. Summary
  - Gives the reader a broad perspective of the reports contents. It will include:
    - A brief statement of the pertinent facts.
    - A list of significant findings.
    - A recommendation that the activity is ready to operate at an acceptable level of risk.
    - A statement of justification that all Category A findings have been resolved.
    - A statement that an approved plan has been provided for resolution of remaining Category B findings.

b. Introduction

States the purpose of the ORR2, summarizes the ways in which the review was expected to accomplish its purpose, and identifies Department Head's team members. It is to include:

- Objectives sought;
- Scope of review;
- Period of performance of review;
- Identification of Department Head Team members, individual expertise and areas of responsibilities.

c. Review Process

Prescribes the methods used to accomplish the review. This includes descriptions of how information was accumulated, recorded, correlated, verified, analyzed, and reported. It must also include the description of the methods used to gain perspective and ensure credibility, criteria used to evaluate information, and processes used to develop additional criteria.

d. Findings

Describes the findings per the Findings Report:

- Includes a statement on the final resolution of all Category A Findings.
- Includes a statement on the approved corrective action plan for all Category B Findings. ("B" findings must be tracked and reported on a monthly basis until resolved.)

e. Appendices

Contains documents or information not appropriate for the main body of the report but in support of it. This may include:

- Additional sources of information;
- Findings report; etc.

Department Head
Review Team

Department Head

9. Verify corrective actions.

10. Approve final report and send copies with "Memorandum to proceed" to DOE Area Office.

Memorandum states Mound's readiness for a graded DOE Operational Readiness Evaluation (ORE).

DOE Area Office

11. Conduct ORE.

An ORE basically has the objective of verifying the completeness of the contractor ORR.

12. Issue ORE Interim Report on findings.

OR Project Leader

13. Develop and submit Corrective Action Plan.

Department Head

14. Approve ORE Corrective Action Plan and forward to DOE Area Office for concurrence.

DOE Area Office

15. Obtain Corrective Action Plan approval.

OR Project Leader

16. Track Corrective Actions to completion and submit final ORE Corrective Action Report.

Department Head

17. Approve final ORE Corrective Action Report and submit to DOE Area Office.

DOE Area Office

18. Verify corrective actions.

19. Issue "Authorization to Proceed".

Department Head

20. Authorize operational startup.

Figure 1. ORR2 Process

ORR2 PROCESS
PAGE 2 OF 2

Figure 1. ORR2 Process

APPENDIX A

MOUND
HAZARD CLASS DETERMINATION

Date: _____

Bldg. No.: _____ Facility Name: _____ Classifiers: _____

HAZARD CLASS SUMMARY

Maximum Room Inventory, Ci or g:

Energetic Materials (   ), HT (   ) HTO (   ), TRU (   )

Hazard Class: None ☐, Low ☐, Moderate ☐, High ☐ Nuclear Facility ☐
Cat. #4 Cat. #3 Cat. #2 Cat. #1

Nuclear Facility - A facility whose operations involve radioactive materials in such form and quantity that a significant nuclear hazard potentially exists to employees or the public.

Concurrence: _____
Building Manager Senior Manager Mgr, Radiological & Industrial Safety

Appropriate Overview Concurrence:

_____ TESOC _____ TRUESOC _____ EMSOC _____ LP&EC

PART A - PRELIMINARY HAZARDS EVALUATION

Check all applicable boxes.

Energy Source Hazards - Circle the most significant energy hazards.

Electrical: capacitors, transformers, batteries, exposed conductors, high-voltage sources
Motion: pulleys, belts, gears, shears, pinch points, vehicles, mass in motion
Gravity-Mass: falling, falling objects
Pressure: confined gases, chemical reactions, stressed mechanical systems
Chemical: corrosive materials, reactive materials
Heat/Fire: electrical, steam, flames, solar, chemical reactions, combustible materials, flammable materials
Cold: cryogenic materials, walk-in freezers
Radiant: lasers, ultraviolet, infrared sources, magnetic fields, RF fields

Others: _____

- ☐ There are no energy sources of a magnitude capable of seriously injuring several facility occupants or causing injuries outside the facility. Injury may occur to a limited number of individuals within the facility due to the types of hazards associated with office work, cold shop activities, etc.

Comment: _____

Nonradioactive Material Hazards (toxic, carcinogen, pathogen, etc.)

- ☐ There are no hazardous materials of a type or magnitude capable of seriously exposing several facility occupants or causing serious exposures outside the facility. Hazardous materials are limited to typical quantities of maintenance, cleaning, and structural materials routinely encountered in offices, residences, workshops, etc.

Comment: _____

Energetic Materials - HE (UNO Class 1.X Explosive)

- ☐ If an activity in a room/lab had an MCE (Maximum Credible Event) limit up to and including 3 grams of UNO Class 1.X Explosive, it is "Standard Industrial Hazard" (SIH).

Energetic Materials - Thermite (UNO Class 4.1 Flammable Solid)

- ☐ If an activity in a room/lab has an MCE limit up to and including 500 grams of UNO Class 4.1 flammable solid, it is SIH.

Comment: _____

Ionizing Radiation Hazards

- ☐ There are no radiological areas. Radiation sources, if present, are limited to:
- those commercially available to the public and exempt from licensing requirements.
  - encapsulated or sealed sources meeting the requirements of ANSI standard N542 or equivalent as determined by TRUESOC.
  - instrument check sources.
  - HT gas - if the inventory of a lab/room is less than 81 uCi (8.1E-9 g T2), it is "no" hazard. Tritium-powered EXIT signs or similar NRC license items of commercial origin are a part of the Mound sealed source program and the area in which these signs are located are considered "No Hazard", unless the signs are in a radiation-controlled area or other forms of T2 are present then, the hazard is based on those other quantities.
  - HT liquid - if the concentration of the tritiated water liquid is less than 1 Ci/liter and the room/lab inventory is less than 8.1E-9 g T2(81 uCi) equivalent, it is "no" hazard.

Comment: _____

Environmental Hazards

- ☐ Radioactive and hazardous materials are limited to types, forms and quantities that, if spilled, would present only a slight potential for health effects and negligible damage to the environment.

Comment: _____

If all of the above boxes are marked, designate "none" for the hazard class. For each category where the box is not marked, complete Part B. The facility/operation hazard class is the highest class assigned.

Additional comments on hazards: _____

PART B - CATEGORIZATION OF LOW, MODERATE, AND HIGH HAZARD CLASSES

Energy Source Hazards

L   M   H

If not controlled, energy source(s) are capable:

- severely injuring several facility occupants and/or causing minor injuries outside the facility ☐
- severely injuring individuals outside the facility and/or causing minor injuries offsite ☐
- severely injuring individuals offsite ☐

Nonradioactive Material Hazards (toxic, carcinogen, pathogen etc.)

If dispersed, hazardous materials are capable of causing:

- serious overexposures to several facility occupants and/or exposures - limits outside facility ☐
- serious overexposures outside the facility and/or exposures - limits offsite ☐
- serious overexposures offsite ☐

Energetic Materials Hazards - HE (UNO Class 1.X Explosive)

- If an activity in a room/lab has an MCE (Maximum Credible Event) limit greater than 3 grams HE of energetic materials, but less than 5 Kg HE, it is "low" hazard. ☐
- If an activity in a room/lab has an MCE limit greater than 5 Kg HE but less than 227 Kg HE of energetic materials, it is "moderate" hazard. ☐
- If an activity in a room/lab has an MCE limit greater than 227 Kg HE of energetic materials, it is "high" hazard. ☐

Note: Room inventory limits of energetic materials will be utilized to classify the room or lab.

Note: Questionable hazard classification projects should be presented to EMSOC for verification.

Energetic Materials Hazards - Thermit (UNO Class 4.1 Flammable Solid)

- If an activity in a room/lab has an MCE limit more than 500 grams of a UNO Class 4.1 Flammable Solid, it is "low" Hazard. (There is no upper limit for this material, "low" will never be exceeded.) ☐

Note: Questionable hazard classification projects should be presented to EMSOC for verification.

Ionizing Radiation Hazards

L   M   H

Hazard Classification Criteria for Tritium Areas

When a room or lab has a non-dispersible operating condition only, that is:

- non-destructive operations with radioactive materials in solid form
- grouted or vitrified materials, or
- radioactive materials in DOT-approved shipping containers, other containment and/or materials configurations which render the radioactive material non-dispersible, (as determined by TESOC, case by case), then the room or lab is considered to have a "low" hazard class.

☐

HT Gas

- If the inventory of a room/lab is greater than 81 uCi but less than 25 g T2, it is "low" hazard.
- If the inventory of a room/lab is between 25 g T2 and 250,000 g T2, it is "moderate" hazard.
- If the inventory of a room/lab is greater than 250,000 g T2, it is "high" hazard.

☐

☐

☐

HTO Liquid

- If the concentration of the tritiated water liquid is less than 1 Ci/liter and the room/lab inventory is greater than 81 uCi but less than 250 g T2 equivalent, it is "low" hazard.
- If the concentration of the tritiated water liquid is more than 1 Ci/liter and the room/lab inventory is between 81 uCi T2 and 2,500,000 g T2 equivalent, it is "moderate" hazard.
- If the room/lab inventory is more than 2,500,000 g T2 equivalent, it is "high" hazard.

☐

☐

☐

Other

- Any room or lab is considered to have a "low" hazard class even without any tritium inventory, as long as it is located within a radiation-controlled area.

☐

Note: Use maximum permitted (e.g. OSRs, RWPs) when possible for the room or lab inventory.

Hazard Classification Criteria for TRU

When a room or lab has a non-dispersible operating condition only, that is:

- non-destructive operations with radioactive materials in solid form
- grouted or vitrified materials, or
- radioactive materials in DOT-approved shipping containers, pipe nipples, fire-resistant safes, other containment and/or materials configurations which render the radioactive material non-dispersible, (as determined by TRUESOC, case by case), then, the room or lab is considered to have a "low" hazard class.

☐

When a room or lab has a dispersible TRU material inventory associated with a specific operating activity (see footnote 1 and 2):

- less than A*E+01 Ci, the room or lab is considered to have a "low" hazard class.
- between A*E+01 Ci and A*E+05 Ci, the room or lab is considered to have a "moderate" hazard class.
- greater than A*E+05 Ci (where the value of "A" is a multiplication factor for a specific radionuclide and is listed in the footnote 3, the room or lab is considered to have a "high" hazard class.

☐

☐

☐

When a room or lab has a highly dispersible TRU material inventory associated with a specific operating activity (see footnote 1 and 2):

- less than A*E+02 Ci, the room or lab is considered to have a "low" hazard class.
- between A*E+02 Ci and A*E+02 Ci, the room or lab is considered to have a "moderate" hazard class.
- greater than A*E+02 Ci, the room or lab is considered to have a "high" hazard class.

☐

☐

☐

When a room or lab has greater than 45% minimum critical mass of fissionable material, it is considered to have "moderate" hazard class in terms of Nuclear Criticality Hazard.

☐

Footnote 1: Highly dispersible is defined as:

- Operations with radioactive gases, vapors, aerosols, or substances that boil at <100 C°.
- Use of radioactive materials in combustible or explosive conditions.
- Use of radionuclides in dry, dusty operations.
- High-temperature or high pressure operations with or near radioactive materials.
- Use of pyrophoric radioactive materials.

Dispersible is defined as:

- Operations with radioactive liquids, powders, or particulate solids.
- Operations that can result in fractional releases of radioactive materials.
- Use of unsealed, non-combustible non-explosive liquids or compact solids in chemical processes or operations.

Footnote 2: Use maximum permitted (e.g. OSRs, RWPs) when possible for the room or lab inventory.

Footnote 3: The values of "A", the multiplication factor for the source term values, have been determined from Exhibit B, Radionuclide Groups, of "A PRACTICAL APPROACH TO HAZARD CLASSIFICATION" (Revision 1), authored by D. E. Lucas, Battelle, Pacific Northwest Laboratories (PNL), Richland, Washington, 99352, and are listed below:

<u>Radionuclide</u>	<u>"A"</u>	<u>Radionuclide</u>	<u>"A"</u>
Th 232	1.25	Np 237	1.67
Am 241	2.38		
Cm 244	3.85	Pu 239	5.26
Pu 240	5.26	Pu 238	5.55
Cf 252	7.69	U 233	13.33
U 234	13.33	U 235	14.29
U 238	15.38		

APPENDIX B

References

1. DOE Order 4330.4A, "Maintenance Management Program, October 17, 1990.
2. DOE Order 5000.3A, "Occurrence Reporting and Processing of Operations Information", May 30, 1990.
3. AL Supplemental Directive 54XA "Operational Readiness Review Program", November 27, 1991.
4. DOE Order 5480.19, "Conduct of Operations Requirements for DOE Facilities", July 9, 1990.
5. DOE Order 5480.23, "Nuclear Safety Analysis Reports", April 30, 1992.
6. DOE Order 5480.5, "Safety of Nuclear Facilities", September 23, 1986.
AL Order 5480.5, "Safety of AL Nuclear Facilities", July 17, 1987.
7. DOE Order 5481.1B, "Safety Analysis and Review System", September 23, 1986.
AL Order 5481.1B, "Safety Analysis and Review Systems", January 27, 1988.
8. DOE Order 5482.1B, "Environment, Safety, and Health Appraisal Program", September 23, 1986.
9. DOE Order 5610.10, "Nuclear Explosive and Weapon Safety Programs", October 10, 1990.
10. DOE Order 5610.11, "Nuclear Explosive Safety", October 10, 1990.
AL Supplemental Directive 5610.11, Nuclear Explosive Safety, August 9, 1991.
11. DOE Order 5610.13, Joint Department of Energy/Department of Defense Nuclear Weapon System Safety, Security, and Control Activities", October 10, 1990.
12. DOE Order 5700.6C, "Quality Assurance", August 21, 1991.
13. DOE Order 6430.1A, "General Design Criteria", April 6, 1989.
14. AL QC-1, "General Requirements for the Establishment Of Quality Control Systems by AEC Contractors", 1955.
AL QC-2, "Quality Criteria, Design", 1985.
15. DOE (ERDA) MANUAL 76-45/1, (SSDC-1), "Occupancy-Use Readiness Manual", September 1975.

16. DOE (ERDA) Manual 76-45/4, Rev. 2 (SSDC-4), "MORT User's Manual", May 1983.
17. DOE (ERDA) Manual 76-45/8, (SSDC-8), "Standardization Guide for Construction and Use of MORT-Type Analytic Trees", February 1977.
18. DOE Manual 76-45/23, (SSDC-23), "Safety Appraisal Guide", August 1982.
19. DOE Manual 76-45/24, (SSDC-24), "Safety Assurance System Summary (SASS) Manual for Appraisal", September 1982.
20. DOE Manual 76-45/25, (SSDC-25), "Effective Safety Reviews", September 1982.
21. DOE Manual 76-45/39, (SSDC-39), "Process Operational Readiness and Operational Follow-On", February 1987.
22. SEN-16b-91, "Approval for Restart of Facilities Shut Down for Safety Reasons and Startup of Major New Facilities", November 13, 1991.
23. NE-1, "Procedure for Restart of Reactors and Non-reactor Nuclear Facilities", March 27, 1991.
24. Memorandum from Mary L. Walker to Managers, DOE Operations, "Guidelines for the Use of Readiness Reviews", February 25, 1987.
25. FLG, "Consensus Method for Hazard Classification for DOE Safety Analysis Guidance", August 27, 1991.
26. MD 10374, "Contractor Independent Safety Review and Appraisal System", April 27, 1992.
27. MD Administrative Policy Manual, Policy 9342, "Work Curtailment/Restart", July 9, 1992.

APPENDIX C

DEFINITIONS

Activity A facility, a system, or a process that is the subject of an Operational Readiness Review.

Authorization Basis Those aspects of a facility design basis relied upon by DOE to authorize operation. These aspects are considered to be important to the safety of the facility operations. The authorization basis is comprised of the facility Safety Analysis Report, the Technical Safety Requirements, DOE-issued Safety Evaluation Reports, and facility-specific commitments made in order to comply with DOE rules, Orders, or policies.

Authorization to Proceed Official notification by the appropriate DOE approval authority that an activity may start or restart operations.

Category A Action Plans A description of the methodology used to track, resolve, and close out Category A findings.

Category A Findings are those Findings involving deficiencies in systems, components and structures failure of which could significantly impact the safety of workers or others present in the operations area, the plant population, the public or the environment. Correction of Category A findings is necessary to ensure safe operations. They include, but are not limited to, safety systems, process controls and proficiency measures. These findings must be resolved and closed prior to starting the proposed operation.

Category A Items are those systems, components, and structures, including portions of process systems, whose failure could adversely affect the environment or the safety and health of the public.

Category B Action Plans A description of the methodology used to track, resolve, and close out Category B findings.

Category B Findings are those findings which have only minor safety impacts or which are not safety related. Category B findings do not necessarily have to be resolved before start-up but an approved plan and schedule for resolution of these findings must be available then.

Category B Items are those structures, systems, subsystems, and components necessary for everyday operations but not necessarily required for safety reasons. They are sometimes referred to as not-critical-for-start-up items.

Contractor/DOE Initiated An ORR is contractor initiated when the contractor takes the initiative to perform one. An ORR is DOE initiated when DOE asks the contractor to perform one.

Decommissioning and Decontamination (D&D) is the process of closing and securing a facility to: (1) Provide adequate protection from radiation or hazardous material exposure, and (2) Isolate radioactive or hazardous materials contamination to permit controlled or unrestricted release of the facility for other uses.

DOE Contractor is any prime contractor or subcontractor subject to the contractual provisions where DOE has elected to enforce ES&H requirements by specific negotiated contract provisions.

Environment, Safety and Health (ES&H) Program encompasses those DOE requirements, activities and functions in the conduct of all DOE and DOE-controlled operations that are concerned with: controlling air, water, and soil pollution; limiting the risk to the well-being of both operating personnel and the general public to acceptably low levels; and protecting property adequately against accidental loss and damage. Typical activities and functions related to this program include, but are not limited to, the following: environmental protection, occupational safety, fire protection, industrial hygiene, health physics, occupational medicine, process and facility safety, nuclear safety, emergency preparedness, quality assurance, and radioactive and hazardous waste management.

Facility Any equipment or structure having the potential for major impact on the environment, safety, or health of employees or the public. Examples include accelerators, storage areas, fusion research devices, nuclear reactors, production or processing plants, coal conversion plants, magnetohydrodynamics experiments, windmills, hazardous disposal burial grounds, testing and research laboratories, and accommodations for analytical examinations of irradiated and unirradiated components.

Facility Representative For each major facility or group of lesser facilities, an individual or his or her designee assigned responsibility by the Head of the Field Organization for monitoring the performance of the facility and its operations. This individual shall be the primary point of contact with the contractor and will be responsible to the appropriate Program Secretarial Officer and Head of Field Organization for implementing the requirements of AL Supplemental Directive 54XA.

Field Office is a departmental element located outside of the Washington, D.C. geographical area.

Final Report A report based upon the Summary Management Report, the Category A and B Action Plans, and the resolution of Category A findings. This report will contain the operating organization's senior management concurrence with the assessment of operational readiness, and is forwarded, along with the memorandum to proceed, to WMOSD for further action by DOE, if required.

Finding is a statement of fact concerning a condition in the facilities, systems, operations, or processes that was investigated during the review. It may be a simple statement of proficiency, or a description of a deficiency. Both severity and potential consequences should be addressed in describing a deficient condition.

Hazard is a source of danger (i.e. material, energy source, or operation) with the potential to cause illness, injury, or death to personnel, or damage to a facility, or the environment without regard to the likelihood or credibility of accident scenarios or consequence mitigation.

Interim Finding Report The initial document which contains a comprehensive listing of all findings discovered during an ORR.

Line Organization is that unbroken chain of command which extends from the Secretary through the Under Secretary, to the Program Senior Officials (PSO), who set program policy and plans and develop assigned programs, to the field organization managers who are responsible to the PSO for execution of these programs, to the contractors who execute the programs. Environment, safety and health are integral parts of these programs.

Minor Change is a change which does not significantly alter the capability, capacity or mode of the operation.

Nuclear Facility is a facility whose operations involve radioactive materials in such form and quantity that a significant nuclear hazard potentially exists to the employees or the general public. Included are facilities that: (1) produce, process, or store radioactive liquid or solid waste, fissionable materials, or tritium; (2) conduct separations operations; (3) conduct irradiated materials inspection, fuel fabrication, decontamination, or recovery operations; (4) conduct fuel enrichment operations; or (5) conduct environmental remediation or waste management activities involving radioactive materials. Incidental use of radioactive materials in a facility operation (e.g., check sources, radioactive sources, and X ray machines) does not necessarily require the facility to be included in this definition.

Normal Safety Control Review is an internal review by project required ES&H functions. This level of review is related to low or negligible hazard conditions, minor changes, or temporary limitations of operations.

Operational Readiness Evaluation (ORE) DOE pre-restart/start up evaluation of activities undertaken by the contractor or line management, including the ORR, to ensure safety of facility operations after restart/start up.

Operational Readiness Review (ORR) is a structured method for determining that an activity is ready to operate including, as a minimum, review of the readiness of the plant, personnel, hardware and procedures. The review must be current and comprehensive and determines compliance with ES&H orders.

Operational readiness Review Execution Plan The procedures which the operating organization uses to initiate, conduct, and closeout a specific ORR.

Operational Readiness Review Program Plan A plan, developed by the operating organization, which describes the way ORRs will be conducted and how they are integrated into the organizational management system.

Operational Safety Requirements (OSRs) have been replaced by Technical Safety Requirements (TSR). See definition below.

Process is a system or series of continuous or regularly occurring actions taking place in a predetermined or planned manner.

Program Senior Official (PSO) is a senior outlay program manager and includes the Assistant Secretaries for Conservation and Renewable Energy, Defense Programs, Fossil Energy, and Nuclear Energy, the Directors of Energy Research, Civilian Radioactive Waste Management, New Production Reactors, and Environmental Restoration and Waste Management.

Quality Assurance consists of all those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in use, or that products or services provided will fulfill requirements.

Readiness to Proceed Memorandum A formal memorandum, submitted to the DOE by a contractor or other operating entity, declaring an activity to be operationally ready.

Restart is an action that resumes operations after a temporary cessation, caused by events other than normal operations. A restart requires an authorization action to resume facility program work.

Risk, either qualitatively or quantitatively, expresses possible loss by considering the probability and consequences or uncertainties of an undesirable event.

Safety Analysis Report (SAR) is a report prepared in accordance with DOE Order 5481.1B/AL Order 5481.1B and DOE Order 5480.23, which summarizes the safety analyses performed to evaluate the effectiveness of the measures taken to control the hazards associated with a facility, process, operation, or system. The SAR also defines minimum safety requirements for operation of the facility, process, operation, or system. A safety analysis report is designated as final when it is based on final design information. Otherwise, it is designated as preliminary (DOE 6430.1A).

Safety Class Items are those systems, components, and structures with the following characteristics:

- a. Those whose failure would produce exposure consequences that would exceed the existing guidelines at the point of maximum exposure;

- b. Those required to maintain operating parameters within the safety limits specified in the operational safety requirements (TSRs) during normal operations and anticipated operational occurrences;
- c. Those required for nuclear criticality safety;
- d. Those required to monitor the release of radioactive materials to the environment during and after a design basis accident;
- e. Those required to achieve and maintain the facility in a safe shutdown condition; and
- f. Those that control the safety class items described above.

Safety Assessment (SA) is a brief evaluation and risk analysis of a facility/operation to determine its level of risk and the need for a SAR.

Shutdown is the condition in which a facility ceases operations for which the facility was being operated, i.e. program work ceases.

Significant modification Any modification that has the potential for exceeding the safety envelope of the authorization basis for the facility.

Start is the initial use of new facilities, systems, operations, or processes. A start requires an authorization action to commence facility program work.

Summary Management Report A report containing the validated lists of category A and B findings and a description of the methods used to track their closeout.

System is a combination of several pieces of equipment integrated to perform a specific function, and have the potential for significant impact on the environment, safety, or health of employees or the public. Examples include: radioactive waste disposal systems, hazardous material disposal systems and transportation systems.

Technical Safety Requirements (TSRs) Notice of Proposed Rulemaking 10 CFR Part 830.320 sets forth the requirements for the scope, format, and technical content of the Technical Safety Requirements, which subsumes the Technical Specifications used for nuclear reactors and the Operational Safety Requirements used for non reactor nuclear facilities. TSRs are to be derived from facility-specific safety analyses.

Unreviewed Safety Question (USQ) A proposed change, test, or experiment shall be deemed to involve an unreviewed safety question if:

- a. The probability of occurrence or the consequence of an accident or malfunction of equipment important to safety evaluated previously by safety analyses may be increased; or
- b. A possibility for an accident or malfunction of a different type than any evaluated previously by safety analyses may be created; or
- c. The safety margins, as defined for any technical specification or the operational safety requirement, are significantly reduced.

In this definition, 'proposed change' includes, but is not limited to: incidents, analyses, modifications, processes, systems and/or components, and operations which indicate an inadequacy of previous analyses or a significant reduction in safety margins. Resolution of a USQ may lead to revisions of SAR and an authorization action to proceed. The restart authority may require an ORR as part of the basis for authorization to proceed.

Acronyms

The acronyms in the following section are frequently used in the development of ORRs. Persons developing the ORR program plan and/or conducting ORRs should be familiar with them. In general, these acronyms are consistent with existing DOE publications.

DAO - DOE Dayton Area Office
D&D - Decommissioning and Decontamination
ES&H - Environmental Safety and Health
FRR - DOE Facility Representative Review
LCO - Limiting Condition for Operations
MORT - Management Oversight and Risk Tree
ORE - Operational Readiness Evaluation
ORR - Operational Readiness Review
OSHA - Occupational Safety and Health Administration
OSR - Occupational Safety Requirements
PSO - Program Senior Official
QA - Quality Assurance
QC - Quality Control
RA - Risk Analysis
RR - Readiness Review
SA - Safety Assessment
SAR - Safety Analysis Report
SSDC - Safety System Development Center
TSR - Technical Safety Requirements
USQ - Unreviewed Safety Questions
WMOSD - Waste Management and Operational Surety Division

APPENDIX D

**CONDUCT OF OPERATIONS
SELF-ASSESSMENT
SURVEY
REV. 2**

**Note: Where this survey conflicts with MD-10361, Issue 2,
the survey takes precedence.**

INSTRUCTIONS

1. Complete the "Conduct of Operations Baseline Self-Assessment Form"
2. Using the "Facility Hazard Classification" and the "Conduct of Operations Self-Assessment Survey" form, answer the applicability statement for each chapter. Where the chapter applies to your facility, answer the B-level questions. If the answer to the applicability statement is "no", skip the B-level questions and proceed to the next chapter. Keep in mind that the answers you provide should reflect the collective status of all rooms comprising your "facility".

NOTE: Compliance Determination: The following 1 through 4 scale is to be used in answering the B-level questions. Circle the number which best reflects your facilities' level of conformance.

- 1 = NO (Not in conformance)
- 2 = LOW DEGREE of conformance
- 3 = HIGH DEGREE of conformance
- 4 = YES (In conformance)

3. Retain a copy of the self-assessment for use in determining necessary remedial actions for your facility. Additionally, a completed copy of the self-assessment should be provided to M. P. Shade, Building 40.

**CONDUCT OF OPERATIONS
BASELINE SELF-ASSESSMENT FORM**

DATE: _____

FACILITY NAME: _____

FACILITY LOCATION (BLDG./ROOM(S)) _____ (See Note #1)

FACILITY HAZARD CLASSIFICATION (HIGH, MODERATE, LOW) _____ (See Note #2)

NAME OF THE SUPERVISOR RESPONSIBLE
FOR THE FACILITY _____

APPROVED BY: _____ (Responsible Senior
Manager)

NOTE #1: The decision as to which rooms comprise a particular facility is left to the judgement of the line organizations. However, when making that decision the following should be considered:

-There should be a logical rationale for the grouping of rooms comprising the facility (e.g. common purpose).

-If both low and moderate hazard rooms make up a "facility", then from a Conduct of Operations (COO) viewpoint the facility will be considered moderate hazard and the low hazard operations must conform to the moderate hazard COO requirements.

-In case where the same operating personnel operate both low and moderate hazard facilities it may be appropriate to operate both at the moderate hazard level to avoid confusion.

-It is recommended that a facility not be divided into increments smaller than room level. However, if there is good, defensible rationale for sub-dividing a room into multiple facilities, that will be the decision of the Senior Manager responsible for the facility.

NOTE #2: If the "facility" is comprised of more than one room, all rooms should be identified. If those rooms are of different hazard classification levels, then the facility will be considered to be at the highest classification and the self-assessment should be carried out at that level.

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER I Operations Organization and Administration

Level "A" Conditions Requiring Compliance With This Chapter

Yes	No	1.	The facility is high, moderate or low hazard.
Yes	NO	2.	The facility is standard industrial/no hazard, but Management has elected to operate it consistent with a higher hazard classification.

If either of the above statements are true (Yes), proceed to the "B" level questions. If neither of the statements is true, proceed to the "Status of Compliance" section.

1B. Determine Status of Compliance

Answer questions for your hazard category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1a. Do you have SOP's, procedures, or instructions for your hazardous operations? (H,M,L)

Note: Written procedures are required whenever the operation involves the amount of hazardous (radioactive or energetic) material that is enough to involve a high, moderate, or low hazard condition. If the process being used has no material present at hazard levels, but is to be used for a high, moderate or low hazard, or could be inadvertently connected to quantities of material at higher hazard levels, such as by opening a combination of valves, the operation would be treated as if the hazard were present and would require a written procedure.

- 1 2 3 4 1b. Have these procedures been reviewed and approved in accordance with Policy/Procedure 1018 "Review of Operational Procedures by Senior Safety Review Committees"? (H,M,L)

1 2 3 4 1c. Have these procedures been entered into the Mound Drawing Control system to provide Configuration Control? (H,M,L)

1 2 3 4 2. Do you make periodic (i.e. monthly) inspections of your operating activity in accordance with P/P 1012 "Management Awareness Program" and MD-10286 "Mound Safety and Hygiene Manual," Section J, and do you keep records of same? (H,M,L)

1 2 3 4 3a. Are the responsibilities and accountability of operating personnel defined within their Job Evaluation Document (JED), and/or within appropriate administrative procedures? (H,M,L)

1 2 3 4 3b. Do you follow P/P 7102 "Salaried Employee Performance Planning and Evaluation" for the setting of objectives and goals, and maintaining accountability for performance? (H,M,L)

1 2 3 4 4. Does management promulgate goals and objectives, and does a program exist to monitor progress toward the achievement of those goals and objectives. (H,M,L)

1 2 3 4 5. Are facility-specific training programs established and currently being used to train operating personnel, supervisors, and managers performing hazardous operations? (H,M)

1 2 3 4 6a. Has management provided sufficient resources to complete assigned tasks without the excessive use of overtime. (H,M)

1 2 3 4 6b. Has a long-range (3 year) staffing plan been developed that anticipates losses of personnel? (H,M)

NOTE: The long range staffing plan is required for positions in which extensive training/certification is necessary to providing qualified replacements. This is not a budget document, its intent is to plan for appropriately trained replacement personnel. The staffing plan should list the positions requiring extensive training/certification, the name of the incumbent, logical backup(s) and a training schedule for the backup(s). If backup personnel are already qualified, then it should be so indicated on the plan. If there are no positions requiring extensive training or certification the plan should state, "N/A no positions requiring extensive training or certification".

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY
CHAPTER II Shift Routines and Operating Practices

2A. Applicability

- Yes   No   1. Could undetected equipment failure pose a significant hazard to personnel, the public or the environment? This includes, but is not limited to, damage to primary or secondary environmental monitoring systems and/or systems supporting ICO's (as defined in the SAR) sufficient to prevent their proper functioning.

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 2B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

2B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4   1. Have hazards (energetic or nuclear) in the work place been properly identified and appropriate safety training of operating personnel completed? (H,M,L)

- 1 2 3 4   2. Have procedures been established which require operator inspection tours and routine monitoring and recording of equipment operating parameters? The records related to these tours, monitoring and recording activities are known as "round sheets". (H,M)

Note: This is directed at equipment/systems in which undetected failure could pose a hazard to personnel, the public and/or the environment. Therefore, procedures and records used to implement Policy 1016, "Monitoring Limiting Conditions of Operations" are an example of this practice.

1 2 3 4 3. Does the operations supervisor authorize the operation of all equipment deemed part of the operating activity and is he/she promptly notified of changes in the facility or equipment status. (H)

1 2 3 4 4. Have procedures been prepared which provide for the review, trend analysis and retention of "round sheets"? (H,M)

1 2 3 4 5. Are operating personnel instructed to believe their indicators and react conservatively to unusual or abnormal events? (H,M,L)

1 2 3 4 6. Has clear direction been provided to operating personnel regarding notification of the operations supervisor when unanticipated occurrences, operating difficulties, etc. are encountered? (H,M)

1 2 3 4 7. Have operating personnel been trained to follow posted personnel protection requirements.? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER III Control Area Activities for DOE Facilities

3A. Applicability

- Yes   No   1.   Is there a central location (control room) containing operating controls from which processes and/or remote facility equipment are controlled?

Note: This chapter does not apply to operating controls which are on or immediately adjacent to the facility equipment. The requirements of this chapter only apply to a Control Room.

If the answer to the above question is "Yes", the chapter is applicable. Knowing the details of your operation continue to Section 3B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

3B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4   1.   Has management issued guidelines for the professional conduct of activities within the control room?
(H,M,L)

- 1 2 3 4   2.   Are operating personnel in the control area protected from distraction caused by other activities ongoing within the facility? (H,M)

1 2 3 4 3. Is access to the control area limited to those personnel having official business in the control room? Has management provided a listing of who should be admitted or provided other control (e.g. card entry, lock, etc.) which assure proper access control. (H)

1 2 3 4 4. Are operating personnel in the control room alert and attentive to the controls? (H,M)

1 2 3 4 5. Are operating personnel aware of in the importance of monitoring the control room panels? (H,M)

1 2 3 4 6. Is operation of control room equipment limited to qualified operating personnel? (H,M)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER IV Communications

4A. Applicability

- Yes   No   1. Does your organization use audible communications systems (horns, bells, public address systems, phones, radios, etc.) to transmit operating or emergency information (other than fire alarms) within the facility.

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 4B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

4B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4   1a. Are only established and tested systems, authorized for use by management, used for communicating emergency information. Authorized and tested systems include the plant PA, radio system, fire alarm system, klaxton horns, local alarms, health physics, environmental, etc.? (H,M,L)

- 1 2 3 4   1b. Are personnel trained in the proper response to emergency communications? (H,M,L)

- 1 2 3 4 2. Do emergency PA and radio communications override all other PA and radio communications in the facility?
(H,M,L)

Note: If only the plant PA and radio communications systems are used, the answer to the above question is "4" ("yes").

- 1 2 3 4 3. Do procedures stress clear concise oral instructions and communications? Is there an approved list of abbreviations and acronyms? Are instructions involving the operation of critical safety equipment repeated back to the initiator by the receiver? (H)

- 1 2 3 4 4. Is communications equipment maintained to ensure that it is available when needed? (H,M,L)

Note: If only the authorized systems identified in 1a. above are used, the answer to the above question is "4" ("yes").

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER V Control Of On-The-Job Training

5A. Applicability

- Yes No 1. Is on-the-job training part of the formal training program required to qualify operating personnel for your facility.

If the answer to the above question is "Yes", the chapter is applicable. Knowing the details of your operation continue to Section 5B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

5B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1. Is on-the-job training performed in accordance with System Manual 112, "Mound Central Training Procedures", Procedure No. 01, "Certification of Instructors" and Procedure No. 03, "Conduct of On-The-Job Training". (H,M,L)

- 1 2 3 4 2. Have those personnel who provide OJT completed the Mound OJT instructors course? (H,M,L)

- 1 2 3 4 3. Have OJT instructors submitted their "Qualification Card" to Central Training? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER VI Investigation of Abnormal Events

6A. Applicability

- Yes No 1. Is there a possibility that your facility could experience an abnormal event that is reportable to DOE?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 6B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

6B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1. Are investigations performed in accordance with MD-10286, "Mound Safety and Hygiene Manual," section K.2? (H,M,L)

- 1 2 3 4 2. Have you (the supervisor responsible for the potentially hazardous activity) completed root cause analysis training? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER VII Notifications

7A. Applicability

Yes	No	1.	Is your operating activity capable of internal or external failures, off-normal occurrences, (e. procedural violations), unusual occurrences (e. failure of safety equipment of systems) or emergencies that could be reportable under the requirements of DOE order 5000.3A, "Occurrence Reporting Program"?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 7B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

7B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1.	Are notifications completed in accordance with the requirements and procedures established in the "Mound Plant Implementation of DOE Order 5000.3A, Occurrence Reporting and Processing of Operations Information"? (H,M,L)
1	2	3	4	2.	Has adequate guidance been provided on what is to be reported and how rapidly reporting is required?

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER VIII Control of Equipment and System Status

8A. Applicability

- Yes No 1. Does the safety basis for your operating activity include primary environmental monitoring (i.e. Class A) equipment; and/or secondary environmental monitoring equipment and/or equipment used in support of LOO's (i.e. Class B)? These systems are defined within the SAR. If a SAR is not available, have LOO's been established for your operating activity? Further definition of Class A and B equipment is contained within the "EG&G Mound Operations Manual", MD-10361.

If the answer to either of the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 8B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

8B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1a. Has management documented which equipment is Class A and/or Class B within your facility? If the answer to question #1a. was "1" ("No") - go to Chapter 9. (H,M,L)
- 1 2 3 4 1b. Are only appropriately trained personnel permitted to operate Class A and/or B equipment? (H,M,L)
- 1 2 3 4 2. Are personnel (e.g. maintenance personnel) working in the facility required to interface with operating personnel prior to:
- Starting/stopping Class A and/or B equipment
  - Taking Class A and/or B equipment out of service for maintenance
  - Restoring equipment to service after maintenance? (H,M,L)

1 2 3 4 3a. Is Class A and/or B equipment monitored in accordance with Policy 1016 "Monitoring Limiting Conditions for Operations?" (H,M,L)

1 2 3 4 3b. Is the status of Class A and/or B equipment controlled by use of lockout/tagout procedures identified in Chapter IX? (H,M,L)

1 2 3 4 4. Are procedures in place to control the placement, removal, and periodic review of temporary modification such as electrical jumpers, lifted leads, pipe blanks, etc? Which effect Class A and/or Class B equipment? (H,M,L)

1 2 3 4 5a. Are proposed changes to Class A and/or B equipment reviewed and approved by the responsible supervisor and the Independent Safety Review Coordinator? (H,M,L)

1 2 3 4 5b. When changes involve building common Class A and/or B equipment, does the Building Manager also approve the change? (H,M,L)

1 2 3 4 5c. Is the Building Manager made aware of all planned changes to Class A and/or B equipment? (H,M,L)

1 2 3 4 6. Are there administrative controls in place to control the performance of maintenance (including post-maintenance testing) on Class A and/or B facility equipment. (H,M,L)

1 2 3 4 7. Are controlled documents (technical manuals, drawings, etc.) available to operating and maintenance personnel when performing maintenance on Class A and/or B safety equipment? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER IX Lockouts/Tagouts

9A. Applicability

- Yes No 1. Is there a potential for personnel injury, or equipment damage during equipment operation, servicing, maintenance or modification activities due to an inadvertent equipment activation?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 9B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

9B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1. Are the requirements and procedures identified in MD-10286, "Mound Safety and Hygiene Manual," related to "Lockout/Tagout" implemented in your operations where appropriate? (H,M,L)

- 1 2 3 4 2a. Have all your personnel who perform lockout/tagout received "Authorized Lockout/Tagout training". (H,M,L)

- 1 2 3 4 2b. Have the remainder of your personnel received "Affected Lockout/Tagout training"? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER X Independent Verification

10A. Applicability

Yes	No	1.	Do your employees perform operations on safety related and/or non safety related components/equipment/systems where an inappropriate positioning of a component could lead to facility shutdown, challenges to safety related systems or other undesirable effects on facility safety and reliability?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 10B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

10B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1.	Has management identified which Class A and/or B equipment requires independent verification and when? (H, M, L)
1	2	3	4	2.	Do operating procedures identify how independent verification is to be accomplished, are operating personnel periodically monitored by line management to verify compliance and are the verifications documented? (H, M, L)
1	2	3	4	3.	Do you have a documented training program for persons performing the independent verification function? (H, M, L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY
CHAPTER XI Logkeeping

11A. Applicability

Yes No This chapter applies to all high, moderate, and low hazard facilities.

11B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1 2 3 4 1a. Is a log maintained within your facility? (H,M,L)

1 2 3 4 1b. Are entries in the log made by the close of the operating period? (H,M,L)

1 2 3 4 2. Does the log, for the purpose of recording deviations from normal expected operation, as a minimum, contain a description of the event, time, date, location, action taken to return the operation to normal, and identification of the individual making the log entry? (H,M,L)

1 2 3 4 3a. Are logs reviewed by line management periodically to ensure they are complete and legible? (H,M,L)

- 1 2 3 4 3b. Are line managements reviews of logs documented?
(H,M,L)

Note: This may be accomplished by making an entry in the logbook indicating that the review occurred or recording the fact that the logbook was reviewed in the supervisors management awareness records.

- 1 2 3 4 4. Are administrative controls established to ensure that operating logs are readily available for a sufficient period of time to allow for the transfer of information among operators? (H,M)

- 1 2 3 4 5. Can events be reconstructed from a combination of data maintained in the log, recorded data (e.g. strip charts, etc.) and operating personnel debriefing?
(H,M,L)

CHAPTER XII Operations Turnover

12A. Applicability

- Yes   No   1.   Is your facility high, moderate or low hazard and is responsibility for operations turned over from one operating person to another in the middle of an operation?

Note: This chapter relates to activities in which there is a formal transfer of responsibility between operators of ongoing processes, when information on the status of the process is not readily available and when the process is not capable of running safely without oversight.

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 12B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

12B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; instead, write a short justification below the question.

- 1 2 3 4   1a. Do you have a turnover checklist(s) equivalent to that identified in 6b below to guide the turnover process? (H,M)

- 1 2 3 4   1b. Is the turnover documented in the operating log, on the turnover checklist or in some other record? (H,M)

- 1 2 3 4   2. Is a review of logs and records part of the turnover process and can facility status (including the status of safety devices) be ascertained by reviewing facility logs and records? (H,M)

1 2 3 4 3. Is a walkdown of the control area (control room) panels part of the turnover of operations responsibility? (H,M)

1 2 3 4 4. Do you require that a complete verbal briefing be given to the oncoming responsible person before he/she assumes responsibility for operations? (H,M,L)

1 2 3 4 5. If a supervisory change occurs during a shift, does the replacement supervisor receive a turnover briefing prior to assuming responsibility of the operation? (H)

1 2 3 4 6a. Have provisions been made to deal with unplanned turnovers (e.g. due to illness, etc.)? (H,M)

1 2 3 4 6b. Are unplanned turnovers guided by a checklist which includes an identification of the process being performed, where the current operator is in the process, the status of equipment, notification of the supervisor that a change of operators has occurred and answering specific questions of the incoming operator? (H,M)

1 2 3 4 6c. Is a record of the turnover made in the operating log or documented in some other record? (H,M)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER XIII Operations Aspects of Facility Chemistry
and Unique Processes

13A. Applicability

- Yes No 1. Does your facility utilize chemicals or hazardous materials in a process which, if not properly controlled, could be a hazard to personnel or the environment, and/or lead to accelerated degradation of equipment or systems?

Note: The primary objective of this chapter is to insure that operating personnel are knowledgeable of the systems with which they are working. Their required level of knowledge of the chemistry involved, is dependent on the degree of freedom the individual has to exercise independent judgement. For example, an operator of a system would not typically require the same level of knowledge as the individual who establishes the systems operating parameters. However, the operator should understand why it is important to remain within the established parameters and the consequences of exceeding those parameters.

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 13B to "Determine Status of Compliance". If the answer to the above question is "NO", write a brief justification to explain why the chapter is not applicable and proceed to the next chapter.

13B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1a. Are operating personnel familiar with all processes within the operating activity for which they are responsible? (H,M,L)

- 1 2 3 4 1b. Do you have in central training auditable training records which show that each facility person was trained? (H,M,L)

1 2 3 4 2. Is each operating person's responsibility with respect to process control defined in their procedures? (H,M)

1 2 3 4 3. Are your operating personnel knowledgeable about aspects of facility processes and safety that they can recognize abnormal indicators and commence corrective actions? (H,M)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER XIV Required Reading

14A. Applicability

Yes	No	1.	Does management need to have a formal method to apprise operating personnel of changes to written procedures and other documents which impact their work practices?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 14 to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

14B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1a.	Has a required reading file been established which includes procedure changes (i.e. those procedures that are not PI controlled) lessons learned, changes to MSDS sheets and changes to operational safety requirements? (H,M,L)

1	2	3	4	1b.	Does each document in the file have a sign-off sheet? (H,M,L)

1	2	3	4	1c.	Is the reading file accessible to all operating personnel? (H,M,L)

1 2 3 4 2. Is a periodic check of the reading file performed to ensure that operating personnel are completing reading as required and is the check documented?
(H,M,L)

1 2 3 4 3. Are key personnel required to review the reading file prior to assuming responsibility for the operation following any absence of greater than 24 hours of operating time? (H)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER XV Timely Orders to Operating Personnel

15A. Applicability

- Yes No 1. Does (or should) management periodically provide short-term information to operating personnel such as special operations to be performed, data to be gathered, work priorities, changes to scheduled activities, etc.?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 15B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

15B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

- 1 2 3 4 1. Is short-term information communicated either verbally or in writing to operating personnel regarding work priority, activities to be performed during the next 24 hours and other information to assist the operators in planning and prioritizing their daily work? (H,M,L)
- 1 2 3 4 2. Does management inform personnel of changes to instructions in a timely manner? (H,M)
- 1 2 3 4 3. Is a procedure (methodology) in place to ensure that long-term instructions are incorporated into appropriate policy documents or procedures? (H,M)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER XVI Operating Procedures

16A. Applicability

Yes	No	1.	Does your facility possess and use systems and equipment in operations involving energetic or nuclear materials that must be operated in accordance with manufacturers' or engineering instructions?
Yes	No	2.	Do you have systems/equipment that may be operated by several different people in operations involving energetic or nuclear materials, during the course of a work week?
Yes	No	3.	Is it important to the safe and reliable operation of the facility that all operators operate systems/equipment in operations involving energetic or nuclear material by the same procedures?

If the answer to any of the above questions is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 16B to "Determine Status of Compliance". If the answer to the above question of "NO", write a brief justification to explain why the chapter is not applicable and proceed to the next chapter.

16B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1a.	Do procedures in your facility conform to the requirements of MD-10001, "A Guide for Writing and Publishing Technical Manuals", specifically regarding their review by the appropriate SOC committee and approval by the responsible Senior Manager? (H,M,L)

1	2	3	4	1b.	Are operating personnel aware of, and adhere to the requirements of P/P 1019 "Procedure Compliance"? (H,M,L)

- 1 2 3 4 2. Have operating procedures been developed to assure that the facility is operated within its design limits? (H,M,L)
- 1 2 3 4 3. Is the wording of operating procedures clear and concise as required by MD-10001, "A Guide for Writing and Publishing Technical Manuals"? (H,M,L)
- 1 2 3 4 4. Are procedures sufficiently detailed to permit trained operating personnel to properly complete the required task without supervision? (H,M,L)
- 1 2 3 4 5. Are operating procedures consistent with the current operating configuration? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

CHAPTER XVII Personnel Operating Aid Posting

17A. Applicability

Yes	No	1.	Do operating personnel use "Operator Aids" (information posted for personnel use) to provide useful information to them while performing their duties?

NOTE: An "Operator Aid" is a portion of a procedure or other official document that is posted on or near equipment for an operator to use when operating the equipment. These are distinct from warning and hazard signs and tags such as required by OSHA, ANSI or other standards. Manufacturer labels or tags are not considered operator aids. Keep in mind that an operator aid relates to the operation of equipment. For example, assume that an English/Metric conversion chart is posted at a piece of equipment for a technician to use while operating the equipment - this is considered an operator aid. An identical conversion chart is posted at the technician's desk to assist him in record keeping - this is not considered an operator aid. Typically, administrative postings, identification labels, etc., would not be considered an operator aid. Care should be taken when applying any posting to assure that it does not obscure instruments or controls.

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 17B to "Determine Status of Compliance". If the answer to the above question is "NO", proceed to the next chapter.

17B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1.	Has the operations supervisor approved (signed and dated) all operator aids used in the facility? (H,M,L)
1	2	3	4	2.	Is a log of approved operator aids maintained? (H,M,L)
1	2	3	4	3.	Are operator aids posted so as to avoid the obscuring of instruments or controls? (H,M,L)

1 2 3 4 4. Are operator aids used to supplement procedures rather than being used in place of procedures?
(H,M,L)

1 2 3 4 5. During management awareness tours (self-assessments) are operating aids periodically inspected to assure that they have been authorized for use? Have these assessments been documented? (H,M,L)

CONDUCT OF OPERATIONS SURVEY

CHAPTER XVIII Equipment and Piping Labeling

18A Applicability

Yes	No	1.	Are your operations of such a nature that operating and maintenance personnel need to positively identify which equipment they are to operate, service, and maintain?

If the answer to the above question is "YES", the chapter is applicable. Knowing the details of your operation continue to Section 18B to "Determine Status of Compliance". If the answer to the above question is "NO" proceed to the next chapter.

18B. Determine Status of Compliance

Answer questions for your Hazard Category. Leave blank any questions in this section designated for your category that you consider not applicable; a short narrative explaining why that question is not applicable should be provided.

1	2	3	4	1.	Is the exposed piping, excluding electrical conduit in your facility labeled in accordance with the following:

- labeled at least once in the room indicating the contents and flow direction
- labeled at intervals of 20 feet on straight runs
- labeled where it enters or leaves a room
- labeled where a change of direction of pipe occurs (tees, elbows, branches, etc.)
- labeled at locations where identification would aid operation (valves, pumps, etc.)? (H,M,L)

1	2	3	4	2.	Is equipment labeling consistent with procedures? (H,M,L)

Note: Equipment labeling is appropriate where the use of a specific piece of equipment is required and where the operator could easily confuse which equipment is to be used.

1 2 3 4 3. Are equipment labels easily read and placed as near as possible to the equipment to be labeled? (H,M,L)

1 2 3 4 4. Have operating personnel been informed that it is their responsibility to label equipment within their area when required by #2 above and that engineering maintenance should be notified to perform pipe labeling where it fails to meet the requirements of #1 above and to notify maintenance of the need to replace missing or damaged labels? (H,M,L)

CONDUCT OF OPERATIONS SELF-ASSESSMENT SURVEY

SUPPLEMENT I

1. Which of the following work place documentation do you have readily available for your facility? (H,M,L)

NOTE: "Readily available" means that the supervisor, and where appropriate, operating personnel, know where the information is (i.e. they shouldn't have to go search for the information).

Y	N	a. Organizational Chart EG&G Mound Organizational Chart)
Y	N	b. Index of Approved Procedures, SOPs, GOPs, etc.
Y	N	c. Management Awareness Log
Y	N	d. JED for each employee
Y	N	e. Performance Plan/JRA for each employee
Y	N	f. List of identified hazardous operations/processes in the facility
NA	Y	N g. Training Matrix (employee v.s. required training
NA	Y	N h. Guidelines for professional conduct (control room activities only)
NA	Y	N i. File/log of occurrence reports for your facility (i.e. 5000.3A/morning report)
NA	Y	N j. List of Class "A" and Class "B" equipment
NA	Y	N k. List of equipment and processes requiring independent verification
NA	Y	N l. List of approved operator aid postings
NA	Y	N m. Copy of completed "Conduct of Operations Self-Assessment Survey"
NA	Y	N n. List of approved variances from COO Program requirements
NA	Y	N o. File of "Required Reading"
NA	Y	N p. Log of Deviations from Normal Expected Operations

Y	N	q. Configuration Index for Documents Referenced by MD-10361
Y	N	r. MD-10001, <u>A Guide for Writing and Publishing Technical Manuals</u>
Y	N	s. <u>MD-10286, Mound Safety and Hygiene Manual</u>
Y	N	t. <u>MD-10361, EG&G Mound Operations Manual</u>
Y	N	u. <u>Mound Plant Implementation Plan for DOE Order 5000.3A</u>
Y	N	v. <u>Mound Administrative Policy Manual and Mound Administrative Procedure Manual</u>
Y	N	w. <u>Systems Manual 112, Mound Training Plan and Procedures, Procedure 03, Conduct Of On-The-Job Training</u>

2. Which of the following work place documentation do you have readily available in your facility? (H,M)

NA	Y	N	a. Index of approved operator inspection tours
NA	Y	N	b. Staffing Plan
NA	Y	N	c. Operations Turnover checklist

APPENDIX E

10/06/92

MOUND ES&H COMMITTEE
CHECKLIST
OPERATIONAL READINESS

The following checklist is to be used to track operational readiness activities for hazardous and non-hazardous projects at Mound.

PROJECT

DESCRIPTION: _____

PROJECT LEADER: _____

SR. MANAGER APPROVAL: _____ DATE: _____

ISRCC CHAIR APPROVAL: _____ DATE: _____

FUNCTION	CONTACT	(X) REQUIRED THIS PROJ.	DATE COMPLETED
Environmental	C. Kinard (Acting)	_____	_____
Health Physics	D. Draper	_____	_____
Waste Management	J. Fontaine	_____	_____
Safety	J. Lemming	_____	_____
NEPA	M. Gilliat	_____	_____
Fac. Design	M. Gilliat	_____	_____
OSHA	R. Royer	X	_____
Life Safety	_____	X	_____
Fire Protect.	D. Heitz	X	_____
Risk Assess.	F. Mintz	_____	_____
Indust. Hygiene	J. Hussman	_____	_____
Pressure Adv.	J. Kim	_____	_____
Medical	E. Reagan	_____	_____
Criticality	_____	_____	_____
Laser Safety	L. Dosser	_____	_____
Alarm Sys. Cert.	K. Good	_____	_____
Clean Room	A. Hodapp	_____	_____
Electro Mech. Sys	_____	_____	_____
Safety Rev. (EMSSRC)	B. Anderson	_____	_____
Tritium Envir. Safety	_____	_____	_____
Overview (TESOC)	D. Stephan	_____	_____
Transuranic Safety	_____	_____	_____
Overview (TRUSOC)	D. Rogers	_____	_____
Energetic Materials	_____	_____	_____
Safety Overview (EMSOC)	A. Munger	_____	_____
Bldg. Mgr. Check (OSR/LCO)	_____	X	_____
Central Training	_____	X	_____
Tech. Manuals	_____	_____	_____
Security	_____	_____	_____

APPENDIX F

MOUND

INTEROFFICE CORRESPONDENCE

DATE: July 31, 1991

TO: C. N. Lindsay

FROM: R. E. Vallee'

SUBJECT: Charter for EG&G Contractor
Operational Readiness Review (C-ORR)
Start-up of SW-150, Function Test Station

cc: H. F. Anderson
T. L. Buxton
E. G. Depew
J. J. Hurly
L. D. Martin
H. A. Woltermann
File

The purpose of this letter is to ask you to chair the EG&G Operational Readiness Review Team for the SW-150 Function Test Station. This request involves the following expectations of the Chairman:

- Recommendation of C-ORR Team
- Development of C-ORR Plan
- Conduct of C-ORR
- Final C-ORR Report

The above should be performed in accordance with the draft "Manual Incorporating Lessons Learned for Mound Operational Readiness Reviews".

The following C-ORR Charter is the document that empowers your team to perform the operational readiness review.

PURPOSE: To assess the control measures and management systems that will assure that the SW-150 Function Test Station is being operated in a safe manner in compliance with ES&H requirements.

C-ORR APPROVAL: The level of approval for this C-ORR will be R. E. Vallee' for EG&G Mound.

OPERATIONS TO BE REVIEWED: The C-ORR team should consider the physical, personnel, and procedural aspects of the operations of this test station. Particular emphasis should be placed on ensuring that all operations will be performed within the approved safety envelope of the SW facility.

C-ORR TIME: The SW-150 startup schedule calls for the C-ORR to start on August 12, 1991.

POINT OF CONTACT: The points of contact in the operations group (Component Development) are Larry Martin and John Hurly.

C. N. Lindsay
Page 2
July 31, 1991

SPECIAL RESOURCES: Members of the review team should have some knowledge of tritium operations and ES&H requirements.

Please see to it that this review is conducted in a thorough but expeditious manner.

R. E. Vallee
Associate General Manager

REV:EGD:cfh

APPENDIX G

ELEMENTS OF AN ORR PLAN

ORR Plan

(This guidance has been taken from Attachment 7, Supplemental Directive AL 54XA, November 27, 1991.)

The ORR team Leader is responsible for preparing the ORR Plan. The ORR Plan shall be completed such that management approvals and the DOE Area Office review will be completed and the review can begin in a timely manner. The plan shall include, at a minimum:

1. Title and approval page;
2. Introduction;
3. Objectives;
4. Scope;
5. Performance of the review; and
6. Checklist.

The draft ORR plan shall be reviewed, comments added, and forwarded by the appropriate manager responsible for the activity to the manager, DOE Area Office, for review. Area Office comments pertaining to the draft will be directed to the ORR team leader. Comments received from the DOE Area Office and the contractors review shall be resolved with the Area Office and/or the contractor comment originators by the ORR team leader prior to issuing the ORR plan.

Title and Approval Page

The first page of the ORR plan shall contain the title of the activity being reviewed. This page should also include:

1. The name, title, and signature of the person who prepared the plan. Typically this will be the ORR team leader; and
2. A list of approvals (names, signatures, and titles) as identified in the program plan.

Introduction

The introduction shall contain a statement that defines the reasons for performing the ORR. If applicable, a detailed discussion of the unusual conditions that lead to a cessation of operations shall be provided. This section should also provide a brief background of the purpose of the activity under review as well as a description of the physical facilities.

Objectives

This section shall contain a list of general objectives for the ORR. These objectives should effectively summarize the accomplishments that are detailed in the checklists.

Scope

This section shall specifically state which activity(ies) will be covered in the ORR as well as the hazard(s), as defined in the SAR, for the activity(ies). Additionally, this section shall include an identification of the necessary elements of hardware, documentation, management controls, procedures, personnel, and programmatic functioning that will be examined.

Activities which are unique or first-of-a-kind shall receive a review of broader scope and depth than a routine restart of an existing activity. Particular attention should be given to the interface between new activities and existing functions.

Performance of the Review

This section provides details on the methodology to be used to conduct the ORR. The basis of a successful ORR is the development and completion of a checklist that details each item considered essential to a safe start-up. Several methodologies may be used to develop the checklists, but the checklists shall address three major elements:

1. Hardware;
2. Administrative controls; and
3. Personnel.

Assignment of responsibilities for completion of checklist items should be detailed in this section as well as plans and schedules for reporting the results of the checklist review and follow up actions.

Checklists

The checklist shall serve as the basis of the review. This section outlines the background information related to the checklist.

In this section of the plan, several issues concerned with the development of the checklist shall be addressed. These issues include:

1. Methodology;
2. Major elements; and
3. Assignment of responsibility

Checklists shall be included as an appendix to the ORR plan.

Methodology

A statement that address the methodology used to develop the checklists shall be made in this section.

There are two recommended methods for developing the checklists; the Predeveloped Checklist Method, and the Analytical Tree Method.

Under the predeveloped checklist method, a list of all available information related to the activity is provided by the team leader to the ORR team. The ORR team is then to decide which of the items is needed for the systems listed in the scope of the ORR. A composite checklist for all systems or individual checklists for each system should be generated.

The ORR team may also use a "Readiness Tree" analysis of the activity as a basis for the checklist. The Management Oversight and Risk Tree (MORT) type analysis is an example of an approach that may aid the ORR team in determining the details to be considered in the review.

Specific applications and guidance documents have been developed by the DOE/EG&G Idaho, Safety System Development Center (SSDC). If a readiness tree is used, then the team leader shall attach the readiness tree to the ORR plan as an appendix.

Three major elements shall be considered in each ORR and be reflected in the checklists. These elements are:

1. Hardware (Equipment & Structures);
2. Administrative Controls (Procedures); and
3. Personnel.

Examples of topics to consider for the three areas are:

Verification of hardware may involve direct checking of:

- Human factors considerations
- Building and installation to currently approved design
- Performance of environmental qualification review
- Specific qualities checks
- Component and systems operation checks
- Apparent damage
- Calibrations and maintenance
- Spare parts availability

The related interfaces of documentation and administrative controls shall include:

- State of as-built drawings
- Corrections and compatibility of procedures
- Maintenance and calibration procedures up-to-date
- Vendor data property filed

The ORR team shall review pertinent administrative control documents such as: job plans, job planning sheets, worksheets, procedures, training plans and records, instructions for operations personnel, and other communications used to manage the operation. This will determine if an effective administrative system exists. The team shall insure that:

1. Prescriptive documents and other instructions are correct, up-to-date, and comprehensive, and have been approved; and
2. Necessary changes have been controlled and implemented.

Up-to-date procedures shall be in place at all necessary locations. Some procedures may not be complete at the start of the ORR. The team shall review those procedures, when they become available, to insure adequate completion. This later review shall be completed prior to ORR completion.

The related personnel interfaces shall include:

- Personnel, trained and certified
- Personnel with demonstrated knowledge/capability concerning the operation.

All situations of nonconformance or an inability to provide verification shall be documented. When the prepared checklist does not provide sufficient detail to achieve a thorough review, it shall be modified.

Each element of a checklist shall state the acceptance criteria used to insure acceptance for that element. The basis of all acceptance criteria used for the ORR shall be stated.

This section shall contain a general statement on each activity indicating the types of items being reviewed, the depth of the review that is consistent with the checklist, and the acceptance criteria used for each checklist element to determine acceptance.