IMPLEMENTATION PLAN
FOR AN
OPERATIONAL READINESS REVIEW
FOR THE
DRY BIN SCALE TEST PHASE OF OPERATIONS

WASTE ISOLATION PILOT PLANT (WIPP)
June 5, 1991

1.0 BASIC OBJECTIVE

The basic objective of this Implementation Plan is to provide the approach and guidelines for the DOE Office of Environmental Restoration and Waste Management (EM) to perform the final DOE Operational Readiness Review (EM ORR) of the WIPP Facility. The EM ORR will assure readiness with respect to safety, health, environmental compliance and management to operate during the Dry Bin Scale Test Phase using Transuranic (TRU) wastes.

2.0 BACKGROUND

The Implementation Plan for an Operational Readiness Review (ORR) for the Dry Bin Scale Test Phase of Operations has been prepared to document the plan to be used in the readiness review of the test phase, which will reflect DOE's responsibilities for safe and environmentally compliant operation of the WIPP facility and respond to the Defense Nuclear Facilities Safety Board (DNFSB) recommendation that DOE conduct a comprehensive, independent operational readiness review of the facility prior to authorization and initiation of the test phase. The Plan addresses all waste handling operational and support function aspects of the test phase as well as the WIPP unique transportation system and packaging requirements.

The ORR is to be directed by Environmental Restoration and Waste Management (EM), which is the responsible DOE Office. The EM ORR is staffed by a combination of DOE employees, DOE contractors, and outside experts. Although responsible EM management is represented in key positions on the EM ORR team, the majority of the team is independent of any connections to the WIPP Project.

Overall management and operations of the WIPP Facility are subcontracted to the Westinghouse Electric Corporation, Waste Isolation Division, who has established a functional organization at the WIPP site. Westinghouse is designated as the responsible contractor for all matters relating to health, safety and protection of the environment. A secondary contractor on-site is Sandia National Laboratories, who has responsibility for providing technical advice and for designing and operating the test program.

DOE oversight is conducted by the DOE WIPP Program Office (WPO) located at the WIPP site. WPO reports to the DOE Albuquerque Operations Office (AL), which in turn reports to EM for WIPP-related activities.

At this point, WIPP facility construction is essentially complete. DOE approval to begin the test phase of operations at WIPP will be based substantially on the results of the EM ORR as well as the recommendations of various responsible DOE offices and oversight groups.

Specifically, prior to beginning the test phase:

- Westinghouse must certify that the facility is ready for operations.

- Following Westinghouse certification, WPO and AL will make similar certifications.

- The DOE oversight groups under the Assistant Secretary for Environment, Safety and Health (EH) and the Office of Nuclear Safety (NS) will also provide their assessment of operational readiness to the Secretary and also to the EM ORR Team Leader, so any deficiencies can be resolved prior to issuance of the final ORR Team Report.

- Finally, the Director EM will provide a letter to the Secretary providing his assurances of the facility's readiness, based in part on the results of this EM ORR.

Although the EM ORR may be initiated prior to completion of final readiness reviews by Westinghouse and WPO, the EM ORR will not be completed until all other reviews have been completed and their findings, including the Westinghouse Readiness to Proceed Memorandum, are made available to the EM ORR team.

The test phase, using contact handled TRU wastes, is scheduled to begin in mid-1991. The test phase is a planned 5-year program to test the behavior of wastes under simulated long-term storage conditions. Testing will consist of placing relatively small quantities of representative wastes in specially designed containers ("bins"), and then studying their stability and decay characteristics. Bins will be placed in retrievable underground storage waste boxes where they will be carefully instrumented and studied. Should results prove unacceptable from either an experimental or safety perspective, the tests can be terminated and the bins retrieved for re-evaluation.

From a health, safety and environmental impact perspective, this phase represents a negligible off-site and a small on-site hazard. However, it is important that any TRU operations at WIPP begin using the management structure, procedures and safety

culture which will ultimately be required when more significant quantities of TRU waste are involved.

3.0 PURPOSE AND SCOPE

The purpose of the EM ORR process is to verify DOE's safety, health, environmental compliance and management readiness to package, transport and receive at WIPP limited quantities of TRU waste for the Dry Bin Scale Test Phase. The EM ORR will include each facility or organization directly involved in the WIPP mission, including the WIPP Facility, WPO, AL, the WIPP unique transportation system, and the waste shipment preparation facility at the INEL site (origin of the first waste shipments). The relationships between these organizations, contractors and subcontractors will be evaluated to assure that the responsibility boundaries are clearly defined to avoid ambiguity, duplication or avoidance of responsibility.

The EM ORR team will assess the sufficiency and adequacy of previous reviews, appraisals, audits and assessments by others in conjunction with preparation for WIPP startup and assure that all findings affecting safe startup have been satisfactorily resolved. The EM ORR will include:

- Assessment of the adequacy and correctness of normal and abnormal operating procedures and emergency procedures.

- Assessment of the adequacy of the level of operator and technician knowledge as evidenced by review of qualification documentation, including examination questions and results; selective oral examinations; and observation by EM ORR team members of actual performance.

- Assurance that as-built drawings accurately reflect plant configuration through walk-downs of selected systems.

- Examination of test records of systems important to safe waste handling operations, and calibration of other instruments that monitor limiting conditions for operation or that satisfy operational safety requirements.

- Verification that the unique needs of WIPP have been properly communicated to waste generators and shippers, and that a high level of confidence has been developed that wastes arriving at WIPP will meet receipt requirements.

- Examination of the Final Safety Analysis Report to assure that it is consistent with the as-built plant, is current with existing procedures and staffing, has been reviewed and approved by appropriate individuals and organizations, and

that it properly identifies potential hazards for personnel protection and emergency planning purposes.

- A careful assessment of all management systems to assure that chains of command back to DOE headquarters are clearly defined and unambiguous, that personnel are aware of their responsibilities and reporting chains, and that the management systems are being implemented effectively.

- Determination that viable quality assurance and configuration management programs for the WIPP facility, the WIPP unique transportation system, and the waste shipping facilities are in place and tested.

- Assurance that programs are in place and are being effectively utilized for self-assessment, lessons learned and operating experience at WIPP and other places.

- Assurance that all tests and prerequisites for each facility or function to be used in the shipping, receiving, and handling of TRU waste during the test phase of operations have been successfully completed and any deficiencies corrected and/or lessons learned incorporated.

- Assurance that the radiological protection organization and program are adequate to support safe waste handling operation.

- Assurance that the test phase plan can be conducted in accordance with safety, health and environmental requirements.

The EM ORR will serve as an indirect measure of WIPP compliance with the 31 selected Level-1 DOE Orders that apply to safety, environmental protection, safeguards and security at WIPP (Table 1). These Level-1 DOE Orders are most important for the Dry Bin Scale Test Phase of operation and will be closely monitored during the EM ORR. A lead reviewer is assigned to each of the selected orders. The Objectives and Sub-Objectives which correspond to each order are listed in Table 1.

The review of implementation of Level-1 DOE Orders will not be a comprehensive compliance review. Rather, the EM ORR will be guided by the ORR Objectives and Sub-Objectives, as supported by the Criteria and Review Approach (CRA) for each. The EM ORR should be sufficient, however, to disclose any major non-compliance issues through the reviews conducted by the team of experts.

As appropriate, the EM ORR process will include briefings for DOE and EM senior management, state and other government officials,

the DNFSB, and the Secretary. State and other appropriate representatives may observe the conduct of the EM ORR process.

The proposed EM ORR team is similar in composition and scope of review to those teams currently preparing for similar reviews at DOE's Rocky Flats and Savannah River sites. However, substantial differences between WIPP and these two facilities will be taken into account. The WIPP site presents substantially less risk than these other sites since it is a new facility with no residual radioactivity. Its potential for radioactive releases during the test phase of operations is quite modest, resulting in small radiological risk to health, safety or the environment.

Objectives and Sub-Objectives

Readiness to receive and handle TRU wastes during the test phase of operations at WIPP will be based on a set of major Objectives and their associated Sub-Objectives. The Objectives are divided into four broad categories. The set of Objectives developed to date is provided below. The of Objectives and Sub-Objectives developed by the Team Leader and Senior Advisors are provided in Attachment 2. During the course of the review, the Objectives and Sub-Objectives will be revised as needed or directed by the Senior Advisors.

1. Plant and Equipment (Hardware) Readiness.

a) The structures, systems and components that are important to safe waste handling operations are properly identified, available, and sufficient, and are consistent with the assumptions about such systems in the FSAR. (Note: At WIPP there are no "vital systems" or otherwise named safety systems that meet the definition of DOE Order 6430.1B. There are, however, identified systems that are important to safe waste handling operations).

b) The readiness condition and operability (including maintenance and surveillance needed to assure continued operability) of systems important to safe waste handling operations is confirmed.

c) There are adequate procedures, Operational Safety Requirements (OSRs) and Limiting Conditions for Operation (LCOs) to operate the systems important to safe waste handling operations.

d) Adequate facilities and equipment are available for operational support services.

e) The underground facility and associated mining systems and operations are adequate to assure the health and safety of operating personnel and protection of the environment during

the Dry Bin Scale Test Phase.

2. Personnel Readiness.

a) There are sufficient numbers of properly qualified operations personnel, supervisors and managers to support the safe initiation of the Dry Bin Scale Test Phase.

b) Sufficient qualified personnel are provided for operational support services, including emergency preparedness, engineering support, environmental protection, fire protection, maintenance, quality assurance, radiological protection, security, training and worker safety and mine safety.

c) All facility personnel exhibit an appropriate awareness of safety and environmental protection requirements and, through their actions, demonstrate a commitment, ability and fitness to comply with those requirements.

3. Management Readiness.

a) A formal and well understood program is established to develop a WIPP site-wide culture that places the highest priority on safety and protection of the environment, formality and discipline of operations, and inquisitive employee attitudes.

b) All WIPP site functions, assignments, responsibilities and reporting relationships of individuals and organizations are clearly defined, understood and effectively implemented by line management responsible for control of safety so that there is no ambiguity, duplication or avoidance of responsibility.

c) The DOE WIPP Project Office (WPO) has the capability to oversee management, safety and environmental protection activities of contractor operations.

d) The Albuquerque Operations Office (AL) has the capability to support WPO in its responsibilities to oversee safety and environmental protection.

e) A clearly defined, traceable and functioning organizational chain of command exists from the responsible DOE headquarters program organization to AL and WPO to assure that all involved individuals and organizations know and discharge their responsibilities for health, safety and environmental protection.

f) Adequate external and DOE internal oversight of WIPP program activities is provided.

4. Functional Areas and Program Readiness.

a) There are established organizations that are adequately staffed and trained and with appropriate organizational structure, procedures and equipment to support facility operations, including organizations in the following functional areas: emergency preparedness, engineering support, environmental protection, fire protection, maintenance, quality assurance, radiological protection, security, training and worker safety and mine safety.

b) The TRU waste packaging and transportation equipment and programs for the Dry Bin Scale Test Program will provide assurance that properly categorized TRU waste will be properly loaded, packaged, transported and unloaded at the WIPP facility in compliance with health, safety and environmental requirements.

c) There are adequate support programs with appropriate requirements, procedures and assigned staff to support safe facility operations and waste handling, including the following programs: configuration management, self-assessment and root cause evaluation of unusual occurrences, unreviewed safety question review, and public information.

d) A program has been established to identify, evaluate and resolve recommendations and findings made by oversight groups, official review teams and audit organizations.

(e) There is reasonable assurance that there a no major non-compliances with selected DOE Orders (i.e. safety, environmental protection, safeguards and security) that are important to the Dry Bin Scale Test Phase of operations. (See page 4, first major paragraph, for approach.)

For each Objective and Sub-Objective, the Criteria and Review Approach (CRA) have been developed by the Technical Expert Team Members and reviewed and approved by the Team Leader and Senior Advisors. The CRA documents also provide the bases for the CRAs and appropriate reference lists. They are provided in Attachment 3.

4.0 OVERALL APPROACH

The EM ORR will provide DOE senior management with independent, objective evidence of the adequacy of the preparations to receive and handle TRU waste for test phase operations at WIPP. It will also confirm that DOE has formed an overall management team that is adequate to assure the safety, health and environmental compliance of WIPP operations.

The sequence of EM ORR activities is:

a. Contractor ISC and Readiness to Proceed Memorandum Due to the delayed arrival of selected system components, the ISC will not start until after the start of the EM ORR. The EM ORR has sufficient flexibility to review the ISC activities as they occur. Upon completion of the ISC, the Contractor will issue a Readiness-to-Proceed memorandum. The EM ORR report will not be finalized until after a review of the memorandum has been completed.

b. Operational Readiness Review DOE will initiate the EM ORR immediately. A team comprised of Technical Experts and Senior Advisors will review the WIPP programs and procedures; inspect equipment, systems and buildings; audit records; interview personnel; and observe simulated operations. At the completion of the EM ORR, the Senior Advisors and the Team Leader will prepare a report summarizing the review and commenting upon the readiness of WIPP to commence the receipt and handling of TRU wastes as part of the test phase of operations.

c. Operational Readiness Review Team Briefings Briefings on the conduct and results of the EM ORR will be provided to EM senior management for their information and to help form a basis for a decision regarding startup. Briefings will also be presented to senior management, state officials, the ACNFS, and the DNFSB as requested or deemed necessary.

d. Test Phase of Operations Following the receipt and initial handling of TRU wastes and the initiation of the test phase of operations, follow-up reviews will be conducted by an appropriate subgroup of this EM ORR team. The follow-up reviews will ensure that conclusions reached in the original review remain valid and that adequate management attention and operational capability remain in place.

5.0 EM ORR TEAM DESCRIPTION

The EM ORR will be conducted by a team of experts in management, engineering, science, nuclear facility safety, and TRU handling operations. Team members will be individually approved by the EM ORR Team Leader to ensure that individually they meet the team's requirements and collectively their backgrounds will include all important areas of the review. The team chosen will be structured as follows:

Team Leader: Mr. Thomas Elsasser, Special Technical Assistant to the Director, EM

Deputy Team Leader: Dr. Owen Thompson, Director, Health and Safety Compliance Division, EM

Senior Advisors: Three independent consultants of recognized stature and unquestioned independence:

Dr. Thomas Pigford, Prof. Nuclear Engineering
University of California, Berkeley
Dr. Edward Mason, Prof. Emeritus, Dept. Head
Massachusetts Institute of Technology
Mr. Edwin Kintner, Ret. Exec. Vice President
General Public Utilities, Inc.

Technical Experts: Senior specialists in major scientific or engineering fields, each having credentials at least equivalent to supervisory level in their area of expertise. The team consists of experts in the following areas:

Management (3)	Environmental Compliance (2)
Operations (2)	Mine Safety
Maintenance	Quality Assurance (2)
Training	Emergency Preparedness
Fire Protection	Radiological Protection
OSHA Compliance	TRU Waste Handling
Transportation (2)	Technical Writer/Editor

A list of team members and a brief statement of their qualifications will be attached to the final EM ORR Report. If the need arises, additional expertise will be added to the team.

All EM ORR team members including the Team Leader, Deputy Team Leader, and Senior Advisors will participate in a substantial majority of team activities. The Senior Advisors will be at the site as a group during key parts of the on-site review as described in Section 10. They will participate individually and collectively in actual review activities to the extent they deem necessary in order to assume responsibility for the findings and conclusions of the review. The EM Team Leader, Deputy Team Leader, and Senior Advisors will sign the final report and will be prepared to present their findings before necessary forums, including:

Defense Nuclear Facilities Safety Board
State officials
Senior DOE management

Any of the EM ORR team members is free to issue a dissenting opinion, which will be carefully considered. Every attempt will be made to resolve the issue during the course of the review. However, should resolution not be achieved, provisions will be made to include the dissenting opinion in the final report. This independence, coupled with the professional experience of the participants, assures an objective and comprehensive review which will provide senior DOE management with confidence that key

findings are presented in an objective and responsible manner.

The Team Leader is responsible for ensuring that the team is supported by adequate staff to handle document preparation, administration and logistics. Recognized interested parties (e.g. State officials) will be afforded an opportunity to observe the review process. Details with respect to their involvement will be worked out with the Team Leader.

The reviews conducted by each EM ORR team member will be guided by a set of Objectives and associated Sub-Objectives as discussed in Section 4.0 above.

The EM ORR Team Leader will assure that the team mission, schedule and objectives are kept in clear focus. He will be assisted by a Deputy Team Leader who has extensive experience in DOE safety requirements and Orders and in conducting DOE team reviews. The Senior Advisors will work in conjunction with the Team Leader to establish the team's Objectives and Sub-Objectives and to define specific issues to be addressed by the Technical Experts. The Senior Advisors will also be responsible for final review of and concurrence in the final EM ORR team report and for ensuring the independence of the review.

The Team Leader, Deputy Team Leader, and Senior Advisors have assisted the Technical Experts in developing the Criteria and Review Approaches (CRAs) for their area of review. These CRAs provide defined bases for conducting the EM ORR within the context of the safety objectives set forth by the Team Leader and the Senior Advisors. The Team Leader and Senior Advisors will also review the efforts of the Technical Experts to assure that all safety objectives are thoroughly assessed.

The Criteria are based on the combined expertise of the Technical Experts and Senior Advisors, DOE Orders and other requirements, the potential hazards during the test phase of operations, the findings and advice of internal and external review groups, and the recognized program needs for the WIPP Facility. The Review Approaches identify the scope of the review and include plans for reviewing procedures and programs; inspecting equipment and facilities; auditing records; interviewing personnel; and observing operations during operational tests. Selected reviews will also require simulated operations by the contractor to test the response of operational and support personnel to normal and accident events.

The CRAs prepared by each Technical Expert have been reviewed by the Team Leader (or his Deputy), the Senior Advisors, and other Technical Experts on the team. The Technical Experts will use the revised CRAs to perform their reviews.

6.0 EM ORR PROCESS

The on-site portion of the EM ORR began on May 29, 1991. Three distinct periods of on-site presence by the team are anticipated:

- o May 29 to June 7
- o June 17 to June 28
- o Internal Integrated System Checkout (ISC) Phase, as determined by the Secretary's Decision Plan

The EM ORR activities will include review of documentation of previous reviews and appraisals, discussions with and questioning of site personnel, and observation of activities onsite. In particular, the team will assess the readiness reviews by the contractor and DOE offices.

During the first two periods, the entire team will be onsite conducting the review. The goal is to complete all portions of the review, with the exception of those related to the contractor's Integrated System Checkout (ISC) by June 28, 1991. A draft report will be completed documenting the activities up to that time. Sufficient team members will be at the site after June 28 to effectively observe and evaluate completion of the contractor's ISC. After completion of the ISC, the final draft report will be updated to reflect ISC phase findings.

To facilitate team coordination and the exchange of information, the team will meet regularly during the on-site reviews. These meetings will permit the Technical Experts to discuss significant observations or problems identified during the day and will permit the Senior Advisors to identify any trends or areas where more detailed information may be required. It will also allow potential schedule difficulties or possible information gaps to be flagged in time to take corrective actions. It will also provide an opportunity for significant issues from DOE oversight groups or recognized outside oversight groups, such as the Environmental Evaluation Group (EEG), to have their concerns provided to the team.

During the conduct of the EM ORR, documentation of review findings and the assembly of objective evidence of operational readiness will be the responsibility of the individual Technical Experts in accordance with specific directions given by the Team Leader and the Senior Advisors. Technical Expert review findings will be documented on a standard worksheet. At the end of the on-site reviews the Technical Experts will complete their evaluations and provide their recommendations to the Team Leader and the Senior Advisors. The Senior Advisors will review these findings and assist the Team Leader in developing a report to document the results of the EM ORR and to provide justification for the team's recommendations. The report will identify any open items found in the review and will characterize the time-

frame for their resolution.

Team members will all be asked to concur in the EM ORR report in their areas of expertise. Dissenting opinions that have not been resolved will be appropriately addressed in the report. The EM ORR report will be transmitted by the Team Leader to the Director, EM. Any items requiring closure after this transmittal will be reviewed for acceptance, at a minimum, by the Deputy Team Leader or the Technical Expert who identified the issue.

The Director, EM will prepare the Approval to Proceed Memorandum, and will forward it to the Secretary for action. The EM ORR report will be attached as a supporting basis for the Secretary's requested action.

7.0 DOCUMENTATION SUMMARY

This Implementation Plan is the DOE document that describes the scope of activities necessary to arrive at a decision to authorize the receipt and handling of TRU waste at WIPP. Other documents which support the EM ORR process are:

* Safety Objectives and Assignments (Attachment 1)
* Objectives and Sub-Objectives (Attachment 2)
* Criteria and Review Approaches (Attachment 3)
* Technical Expert Worksheets
* EM ORR Final Report

8.0 QUALITY ASSURANCE AND DOCUMENT CONTROL

Quality Assurance (QA) and document control requirements will be identified in writing by the EM ORR Team Leader in the EM ORR Activities Plan. The QA requirements will include Team Leader approval of all EM ORR team members, daily on-site peer review of the findings of the Technical Experts, oversight of the activities of the Technical Experts by the Senior Advisors, and specification of the form of reports and retention of records on which the team's conclusions are based. The EM ORR Activities Plan will be included in the EM ORR Final Report.

9.0 DEFINITION OF RESPONSIBILITIES

Director, Office of Environmental Restoration and Waste Management. Has the overall responsibility for conducting the Operational Readiness Review at WIPP in preparation for the

receipt and handling of TRU waste for the test phase. The Director has appointed his Special Technical Assistant as the EM ORR Team Leader.

Manager, Albuquerque Operations Office (AL). Administratively responsible for the WIPP Project Office and directly responsible for the WIPP unique transportation system. AL will certify that the transportation system is ready to ship TRU to the WIPP Facility and will serve as a point of coordination for the EM ORR team's review of that system.

Manager, WIPP Program Office (WPO). Responsible for day-to-day oversight of the WIPP facility and for serving as a point of coordination for the EM ORR team. WPO will forward the Westinghouse Readiness to Proceed Memorandum directly to the Director, EM, along with their observations and recommendations.

Westinghouse Electric Corporation. The Management and Operations (M&O) contractor at the WIPP Facility. Westinghouse has overall responsibility for health, safety and protection of the environment at the WIPP Facility. The documentation that prescribes the relationship between Westinghouse and Sandia, particularly with regard to safety responsibility, will be evaluated during the EM ORR.

Sandia National Laboratory. Has a separate contract with DOE at the WIPP facility as Scientific Advisor with responsibility for designing and supervising the bin test program at WIPP. They are responsible to Westinghouse on matters relating to health, safety and protection of the environment. This relationship, and supporting documentation, will be evaluated during the EM ORR.

Dawn Trucking Company. Transportation contractor for moving TRU wastes from the waste shipping sites to the WIPP facility. Operates under separate contract with DOE and reports to the Manager, AL.

Waste Shipping Sites. The organization where TRU waste is packaged for shipping to the WIPP Facility. Initial shipments will be from the Idaho National Engineering Laboratory, operated by EG&G; later shipments expected from the Rocky Flats Plant (RFP), also operated by EG&G, are not included in the EM ORR but will be reviewed before shipments from RFP are started.

EM ORR Team Leader. Responsible for the selection of EM ORR team members; providing guidance to each team member in accordance with this Implementation Plan; preparation of internal team correspondence; liaison with the WPO and AL offices; submission of EM ORR reports to the Director EM and other senior DOE officials; and providing briefings as identified in Section 4.0 of this Implementation Plan.

EM ORR Deputy Team Leader. Responsible for assisting the Team Leader in discharging his responsibilities, with emphasis on assuring that all geographic aspects of this widely dispersed EM ORR are properly covered. Also provides rapid knowledge of DOE safety related Orders and other requirements in support of Team Leader, Senior Advisors, and Technical Experts. May act for Team Leader at his direction; however, both Team Leader and Deputy Team Leader shall normally participate fully in all EM ORR activities.

Senior Advisors. Responsible for providing technical support to the team leader, providing guidance to the Technical Experts, identifying issues to be addressed during the EM ORR, approving the criteria and review approaches to be used by the Technical Experts, assisting the Team Leader in preparing the final report, and signing the final report. As with any team member, the Senior Advisors may add comments or differing opinions to the report if they believe it appropriate.

Technical Experts. Responsible for assessing the adequacy of the WIPP facility, transportation system, and waste generators for readiness to receive and handle TRU waste in their assigned areas. The Technical Experts will assist the Team Leader and the Senior Advisors in defining the scope of review in their assigned area, documenting the associated criteria and review approaches, attending team meetings to coordinate with other Technical Experts, and documenting their own findings and conclusions. The Technical Experts will not sign the final report, but will be given an opportunity to review it before issuance and resolve any discrepancies before issuance.

10.0 SCHEDULE

The EM ORR commenced on May 6, 1991, and the on-site review will be conducted as described in Section 6. The completion of the EM ORR is dependent on the completion of the contractor's ISC. Accordingly, the EM ORR schedule will conform to Revision 8 to the Secretary's Decision Plan which is expected to be published in the near future.

All team members were briefed on the current program (as identified in this Implementation Plan) and on the associated Objectives and Sub-objectives on the evening of May 28, 1991, in Carlsbad, NM. The team and team leaders arrived on site ready to begin work the morning of May 29, 1991. Team members then finalized their review Criteria and Review Approaches (CRA's). The Senior Advisors arrived on site as a group later in the week; they reviewed and approved the team composition and the revised Implementation Plan, Objectives and Sub-Objectives, and CRAs. They remained as a group through June 3, 1991 in order to assure

themselves that the reviews were being conducted in accordance with approved CRA's.

During the week of June 9-15, 1991, an initial draft of findings will be developed. These findings will be provided to the Senior Advisors for their input and recommendations prior to the start of the second phase of the on-site review on June 17, 1991. The Senior Advisors will provide comments to the team leader individually during the period June 17-19 and will be at the site as a group during the period June 20 through June 25. This period corresponds to the final team review of the base WIPP facility and off-site organizations as well as the period of significant input into the final draft report.

The majority of the on-site ORR review will be completed by June 21, 1991, and the majority of the report writing will be completed approximately one week later. A portion of the team will remain (or return) through completion of the ISC, targeted for completion on or about July 17, 1991. The Senior Advisors will be available as a group during the week of July 7-12 to witness critical phases of the Integrated System Checkout, to observe the planned comprehensive emergency preparedness exercise, and to work with the team leader in developing the final report. Individual Senior Advisors will also be available to approve and defend the final report, as necessary, thereafter. It is expected, subject to possible unexpected or short-term situations, that all identified team members, including the Team Leaders, will be available and actively participating in the entire review.

In summary, the majority of the WIPP ORR will begin on May 29 and finish on June 28, 1991. Team members will be on site four of these five weeks, plus those remaining for the ISC phase through mid-July. The Senior advisors will be individually involved most of this time, and will be available as a group for two five day and one four day period in order to coordinate their thinking and to approve any major decisions affecting the safety objectiveness of the review and to approve and implement needed mid-course corrections. All team members, including the Senior Advisors, will be available thereafter to review and approve the final reports and to discuss or defend their findings.

LIST OF TABLES AND ATTACHMENTS

Table 1
Selected Level-1 DOE Orders Applicable to WIPP

Order Number	Title	Date	ORR Expert	Objective	
1540.2 Ch.1	Hazardous Material Packaging for Transport - Administrative Procedures	12/19/88	J. Cece	F.2.2, F.2.4, M.3.4	
4330.4A Ch.1	Maintenance Management Program	4/09/91	J. Palombi	F.1.5, H.2.1, H.2.2, H.2.4, H.2.7, H.3.3	
5000.3A	Occurrence Reporting and Processing of Operations Information	5/03/90	R. Burns	F.1.3, F.3.2, F.3.3, M.1.2	
5400.1 Ch.1	General Environmental Protection Program	6/29/90	D. Silva	F.1.3	
5400.5 Ch.1	Radiation Protection of the Public and the Environment	6/05/90	W. Britz	F.1.3, F.1.7	
5480.1B Ch.4	Environment, Safety, and Health Program for Department of Energy Operations	3/27/90	R. Burns	F.2.4, F.1.10, M.1.1, M.1.2, M.3.4, M.1.4, M.3.2, M.3.3	5
5480.3	Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes	7/9/85	J. Cece	F.1.3, F.2.2 F.2.3, F.2.4, M.3.4	
5480.4 Ch.1	Environmental Protection, Safety, and Health Protection Standards	5/16/89	T. Bates	F.1.7, F.1.10, H.1.1, H.4.2, H.5.1, P.3.2, M.3.2, M.3.3	5

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Order Number	Title	Date	ORR Expert	Objective
5480.5	Safety of Nuclear Facilities	9/23/86	D. Tulodieski	F.1.9, F.3.3, H.1.1, H.1.2, H.3.1, H.3.2, H.3.6, M.1.1, M.1.2, P.2.3, P.2.4
5480.7	Fire Protection	11/16/87	J. Dewey	F.1.4, P.2.3, P.2.4
5480.8	Contractor Occupational Medical Program	11/16/87	K. Yotz	F.1.10, P.2.3, P.2.4
5480.9	Construction Safety & Health Program	11/18/87	K. Yotz	F.1.10
5480.10	Contractor Industrial Hygiene Program	6/26/85	K. Yotz	F.1.10, P.2.3, P.2.4
5480.11 Ch.2	Radiation Protection for Occupational Workers	6/29/90	W. Britz	F.1.7, P.1.1, P.2.1, P.2.3, P.2.4
5480.16	Firearms Safety	10/10/90	J. McEwen	F.1.8
5480.19	Conduct of Operations Requirements for DOE Facilities	7/09/90	D. Tulodieski	F.3.1, F.3.2, H.1.2, H.1.3, H.2.3, H.3.1, H.3.2, H.3.3, H.3.4, H.3.5, H.3.6, M.5.2, P.2.3, P.2.4

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Selected Level-1 DOE Orders Applicable to WIPP

Order Number	Title	Date	ORR Expert	Objective
5480.20	Personnel Selection, Qualification, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities	2/20/91	T. Mazour	F.1.2, F.1.9, P.1.1, P.1.2, P.1.3, P.1.4, P.1.5, P.1.6, P.2.1, P.2.2, P.2.3, P.2.4
5481.1B Ch.1	Safety Analysis and Review System	5/19/87	D. Karner	F.1.10, F.3.3, H.1.1, H.1.4, H.3
5482.1B	Environment, Safety and Health Appraisal Program	9/23/86	H. Himpler	F.1.3, F.1.6, F.1.10, F.2.4, M.3.1, M.3.2, M.3.4, M.4.1, M.4.3, P.3.1
5483.1A	Occupational Safety & Health Program for DOE Contractor Employee at Gov't - Owned Contractor - Operated Facilities	6/23/83	K. Yotz	F.1.10
5484.1 Ch.7	Environmental Protection, Safety and Health Protection Information Reporting Requirements	10/17/90	J. McEwen	F.1.3, F.1.4, F.1.7, F.3.4, M.1.2
5500.1B	Emergency Management System	4/30/91	M. Dunkle	F.1.1
5500.2B	Emergency Categories, Classes, Notification and Reporting Requirements	4/30/91	M. Dunkle	F.1.1, F.1.3

Table 1
Selected Level-1 DOE Orders Applicable to WIPP

Order Number	Title	Date	ORR Expert	Objective	
5500.3A	Planning and Preparedness for Operational Emergencies	4/30/91	M. Dunkle	F.1.1, F.1.3, H.4.2	
5500.4	Public Affairs Policy and Planning Requirements for Emergencies	8/13/81	M. Dunkle	F.1.1	
5500.7A	Vital Records Protection Program	1/09/87	W. Kehew	H.1.5	
5500.10	Emergency Readiness Assurance Program	4/30/91	M. Dunkle	F.1.1	
5632.6 Ch.1	Physical Protection of DOE Property and Unclassified Facilities	12/05/89	J. Dewey	F.1.8	
5632.9 Ch.1	Issuance Control and Use of of Badges, Passes and Credentials	12/19/88	J. McEwen	F.1.8	
5700.6B Ch.2	Quality Assurance	3/28/90	W. Kehew	F.1.3, F.1.5, F.1.6, F.2.4, F.4.1, F.4.2, F.4.3, H.1.3, H.1.5, H.2.1, H.2.4, H.3.4, H.3.5, H.4.5, M.3.4, M.3.1	5

Table 1
Selected Level-1 DOE Orders Applicable to WIPP

Order Number	Title	Date	ORR Expert	Objective
5820.2A	Radioactive Waste Management	9/26/88	B. Maguire	F.1.3, F.1.5, F.1.6, F.1.7, F.2.1, F.4.1, F.4.2, H.1.5, H.4.5, M.1.1, M.1.2, M.3.4, M.5.2, M.5.3

Attachment 1
Safety Objective and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
H.1 ISWH structures, systems and components consistent with FSAR.		L											
H.1.1 ISWH systems identified in the FSAR.		L											
H.1.2 ISWH systems and LCO instrumentation identified in plant.		L											
H.1.3 As-built drawings.		L							S				
H.1.4 Administrative controls	L												
H.1.5 ISWH documentation current.									L				
H.2 ISWH systems ready.		L											
H.2.1 LCO instruments operable.		L											
H.2.2 Maintenance backlog.													
H.2.3 Good housekeeping.	S	S	S	S		S	S	L	S		S	S	S
H.2.4 Tools and equipment for ISWH systems.								L					
H.2.5 Operability of ISWH systems		L											
H.2.6 Surveillance of ISWH systems.		L											
H.2.7 Maintenance of ISWH systems.		S						L					
H.3 OSRs and LCOs for ISWH systems.		L											
H.3.1 ISWH Procedures consistent with ISWH system configurations.		L						S				S	
H.3.2 ISWH procedures consistent with LCOs.	S	L						S					

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
H.3.3 Administrative controls to deactivate alarms.		L											
H.3.4 Demonstrated adequacy of operating procedures.		L											
H.3.5 Process to maintain procedures current.		L											
H.3.6 OSRs and LCOs are clearly stated and posted.		L											
H.4 Facilities and equipment are available for operational support.		L											
H.4.1 Equipment and facilities are adequate, available and operable.		L											
H.4.2 Sampling and analysis for operations and environmental protection.		S		L		S							
H.4.3 As-built drawings.		L							S				
H.4.4 Administrative controls on modifications.		L											
H.4.5 Documentation current.		S							L				
H.5 Adequate underground facility and mining systems and operations.			L										
H.5.1 U/G operation complies with regulations.			L										
H.5.2 U/G construction and operation consistent with FSAR.			L										

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
H.5.3 Procedures in accordance with accepted mining practice, requirements, standards.			L										
H.5.4 Surveillance and monitoring.			L										
P.1 Sufficient qualified operations personnel, supervisors and mangers.		L											
P.1.1 Understanding of technical fundamentals.												L	
P.1.2 Trained to latest procedures.		S										L	
P.1.3 Start-up test program for final sign-off of operator qualifications.		S										L	
P.1.4 Trained to adhere to procedures, OSRs and LCOs.		L										S	
P.1.5 Qualification and staffing.	S	L	S	S	S	S	S	S	S	S	S	S	S
P.1.6 Adequate level of knowledge during operator qualification.												S	
P.2 Sufficient qualified personnel are provided for support services.												L	
P.2.1 Understanding of technical fundamentals.						S	S	S			S	L	S
P.2.2 Trained to latest procedures.						S	S	S			S	L	S
P.2.3 Qualifications and staffing.				S		S	S	S			S	L	S
P.2.4 Adequate level of knowledge during qualification.						S	S	S			S	L	S
P.3 Personnel safety awareness	L												

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
P.3.1 ES&H in appraisals	L												
P.3.2 Fitness-for-duty	L												
P.3.3 Importance of training	L											S	
M.1 ES&H culture	L												
M.1.1 Policies, plans and procedures support culture.	L												
M.1.2 Management aware of safety issues.	L								S				
M.1.3 Philosophy of openess supported by public information program.	L			S						S			
M.1.4 Management commitment to safe operation.	L												
M.2 Organizational responsiblities defined and implemented.	L												
M.2.1 Defined responsiblity, authority and accountability policy.	L	S							S	S	S	S	
M.2.2 Effective communication.	L	S							S	S	S	S	
M.2.3 Clear understanding between Westinghouse and Sandia.	L												
M.3 WPO capable of management and oversight	L												
M.3.1 Autonomy from contractor.	L												
M.3.2 Sufficient trained and skilled personnel for site.	L												

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
M.3.3 WPO fosters safety culture.	L												
M.3.4 Sufficient trained and skilled personnel for transportation.	S									L			
M.4 AL capable of oversight.	L												
M.4.1 Sufficient trained and skilled personnel.	L												
M.4.2 Demonstrated commitment to support WIPP.	L												
M.4.3 Agreements for financial and program support.	L												
M.5 Chain-of-command to HQ.	L												
M.5.1 HQ responsibilities for packaging, transportation and receipt at WIPP defined.	L	S									S		
M.5.2 Clear point where WIPP becomes owner of TRU wastes.	L	S									S		
M.5.3 HQ responsibilities properly discharged.	L												
M.6 Adequate oversight.	L												
M.6.1 Recent audits by DOE oversight groups.	L												
M.6.2 EEG charter and oversight adequate.	L												
F.1 Adequate support organizations		L											

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
F.1.1 Emergency preparedness.				L									
F.1.2 Engineering support.		L	S					S				S	
F.1.3 Environmental protection.						L					S		
F.1.4 Fire protection.			S				L						
F.1.5 Maintenance.		S						L		S	S	S	
F.1.6 Quality assurance.										L		S	
F.1.7 Radiological protection.											L		
F.1.8 Security.	L												S
F.1.9 Training.		S	S	S		S	S	S	S	S	S	L	S
F.1.10 Worker safety and mine safety.			S										L
F.2 Packaging and Transportation.										L			
F.2.1 Waste meets WIPP-WAC								L	S				
F.2.2 Containers meet requirements.						S			S	L	S		
F.2.3 Transportation by qualified vehicles, drivers and procedures.				S				S	S	L		S	
F.2.4 Routing meets requirements and agreements.				S					S	L			
F.3 Adequate support programs.	L												
F.3.1 Configuration management.								S					
F.3.2 Self assessment and root cause analysis of UORs.		L											

Atachment 1 (contd.)
Safety Objectives and Assignments

	Mgt	WH	Mine	EP	Eng	Env	FP	Maint	QA	P&T	RP	Trn	WS
F.3.3 Unresolved Safety Questions													
F.3.4 Records management.								L	S				
F.4 Resolution of comments by oversight groups.								L	S				
F.4.1 Tracking deficiencies.	S								L				
F.4.2 Prioritizing and tracking corrective actions.	S								L				
F.4.3 Program to resolve remaining open items before startup.	S							L					

ATTACHMENT 2

OBJECTIVES AND SUB-OBJECTIVES
FOR THE
OPERATIONAL READINESS REVIEW
FOR THE
DRY BIN SCALE TEST PHASE OF OPERATIONS

Plant and Equipment (Hardware) Readiness

H.1 The structures, systems and components that are important to safe waste handling operations are properly identified, available, and sufficient, and are consistent with the assumptions about such systems in the FSAR.

H.1.1 Systems important to safe waste handling operations have been identified in the FSAR.

H.1.2 Systems in the facility important to safe waste handling operations, including equipment and instrumentation used to demonstrate compliance with Limiting Conditions for Operation and Operational Safety Requirements, are adequately identified.

H.1.3 The adequacy of as-built drawings for systems important to safe waste handling (ISWH) operations has been verified and an adequate system for maintaining them current is in place. This will include walkdowns of selected systems to verify compliance with as-built drawings.

H.1.4 Administrative controls are provided to assure that modifications to facilities and systems important to safe waste handling operations are analyzed, documented and approved.

H.1.5 An adequate process has been established to assure that documentation for facilities and systems important to safe waste handling operations is established and kept current.

H.2 The readiness condition and operability (including maintenance and surveillance needed to assure continued operability) of systems important to safe waste handling operations is confirmed.

H.2.1 Instruments, indicators and alarms that monitor Limiting Conditions for Operation or that satisfy Operational Safety Requirements or provide BIN test

data have been demonstrated to be capable of performing their intended functions in the required manner.

H.2.2 Any maintenance backlog for systems important to safe waste handling operations has been justified and is acceptable for initial operation.

H.2.3 Good housekeeping and pride of ownership is evident throughout the facility.

H.2.4 Tools and equipment for proper maintenance of systems important to safe waste handling operations have been properly identified, calibrated, tested and are available.

H.2.5 Operability of systems important to safe waste handling operations in accordance with existing procedures is physically verified.

H.2.6 Surveillance requirements, procedures and intervals are adequate to assure operability of systems important to safe waste handling operations.

H.2.7 Maintenance requirements and procedures are adequate to assure continued operability of systems important to safe waste handling operations.

H.3 There are adequate procedures, Operational Safety Requirements (OSRs) and Limiting Conditions for Operations (LCOs) to operate the systems important to safe waste handling operations.

H.3.1 Procedures for operations, training and maintenance reflect the configuration of all systems important to safe waste handling operations.

H.3.2 Operating and maintenance procedures and facility administrative procedures for systems important to safe waste handling operations are consistent with approved LCOs and deal with normal and abnormal events.

H.3.3 Administrative controls are in place to assure that deactivation of alarms is accomplished in a controlled manner requiring formal review and approval.

H.3.4 The adequacy of operating procedures is demonstrated during equipment and system operability checks.

H.3.5 A system has been established to ensure procedures are kept current and accurate, including temporary changes to procedures.

H.3.6 OSRs and LCOs are clearly stated and posted in appropriate locations.

H.4 Adequate facilities and equipment are available for operational support services.

H.4.1 Equipment and facilities needed for operational support services are adequate, available and operable.

H.4.2 Sampling and analysis capabilities exist to perform monitoring and characterization activities for operations and environmental protection.

H.4.3 The adequacy of as-built drawings for facilities and equipment needed for operational support services has been verified and a system for maintaining them current is in place.

H.4.4 Administrative controls are provided to assure that modifications to facilities and systems for operational support services are analyzed, documented and controlled.

H.4.5 An adequate process has been established to assure that documentation for facilities and systems for operational support services is established and kept current.

H.5 The underground facility and associated mining systems and operations are adequate to assure the health and safety of operating personnel and protection of the environment during the Dry Bin Scale Test Phase.

H.5.1 Operation of the underground facility complies with all applicable federal, state, local and DOE requirements, regulations and standards.

H.5.2 Construction and operation of the underground facility is consistent with the descriptions and associated assumptions in the FSAR.

H.5.3 The underground configuration, systems and procedures adequate to support all proposed activities during normal and abnormal conditions, are in accordance with accepted mining practice and reflect the experience and standards developed in the local mining area, and are adequate for safety and environmental control.

H.5.4 Systems and procedures are in place to facilitate the surveillance and monitoring of all structures and components of the underground facility during the bin

testing phase. This includes observing indications of potential changes in the site conditions which may affect the stability of the excavations and shafts, and monitoring for indications of potential water inflows, gas emissions, rock bursts or any other unusual occurrence. The monitoring systems and procedures establish and maintain geotechnical and structural baseline data for reference in future years.

Personnel Readiness

P.1 There are sufficient numbers of qualified operations personnel, supervisors and managers to support the safe initiation of the Dry Bin Scale Test Phase.

P.1.1 Operations personnel have an adequate understanding of technical fundamentals.

P.1.2 Operations personnel and supervisors have been properly trained and qualified in accordance with the latest revision of approved procedures.

P.1.3 An adequate start-up test program has been developed, implemented and will be used for final sign-off of operator qualifications.

P.1.4 Operations personnel, including experimenters, have been trained to adhere to procedures, OSRs and LCOs and to understand the importance of procedural compliance.

P.1.5 Qualification and staffing requirements have been established and met for operations personnel, experimenters, supervisors and managers.

P.1.6 The level of knowledge achieved during operator qualification is adequate to operate safely.

P.2 Sufficient qualified personnel are provided for operational support services, including emergency preparedness, engineering support, environmental protection, fire protection, maintenance, quality assurance, radiological protection, security, training and worker safety and mine safety.

P.2.1 Operational support personnel have an adequate understanding of technical fundamentals.

P.2.2 Operational support personnel and supervisors have been

properly trained and qualified in accordance with the latest revision of approved procedures.

P.2.3 Qualification and staffing requirements have been established and met for operational support personnel.

P.2.4 The level of knowledge achieved during qualification is adequate to support initiation of the Dry Bin Scale Test Program.

P.3 All facility personnel exhibit an appropriate awareness of safety and environmental protection requirements and, through their actions, demonstrate a commitment, ability and fitness to comply with those requirements.

P.3.1 Confirm that instructions for personnel appraisals require attention to health, safety and protection of the environment.

P.3.2 A fitness-for-duty program is in place and effectively implemented.

P.3.3 Employees understand the importance of training in safety, health and environmental subjects and utilize the training in their daily work.

Management Readiness

M.1 A formal and well understood program is established to develop a WIPP site-wide culture that places the highest priority on safety and protection of the environment, formality and discipline of operations, and inquisitive employee attitudes.

M.1.1 Policies, plans and procedures are established that will support the desired safety culture of placing the highest priority on safety and protection of the environment, formality of operations and inquisitive employee attitudes.

M.1.2 Facility management personnel are made aware of safety issues and occurrences at WIPP and other facilities that could affect their operations, and lessons-learned are applied.

M.1.3 The philosophy of openness on matters affecting safety, health and environment is supported by an effective public information program and line management

practices.

M.1.4 Management commitment to the safe operation of the facility is evident from personnel involvement, interest and knowledge.

M.2 All WIPP site functions, assignments, responsibilities and reporting relationships of individuals and organizations are clearly defined, understood and effectively implemented by line management responsible for control of safety so that there is no ambiguity, duplication or avoidance of responsibility.

M.2.1 Responsibility, authority and accountability of each line element of WIPP site line management, from the top level of management through shift supervisors, is clearly defined by policy and is evident in practice.

M.2.2 Effective coordination and communication exist among line organizations.

M.2.3 Clear written and working understandings between Westinghouse as O&M contractor and Sandia as Technical Advisor and other contractors and subcontractors are in place and are demonstratably operable. It is clear in all these understandings that Westinghouse as O&M contractor has primary responsibility and authority for health safety and protection of the environment.

M.3 The DOE WIPP Project Office (WPO) has the capability to oversee management, safety and environmental protection activities of contractor operations.

M.3.1 WPO exercises sufficient autonomy from WIPP contractor organizations to properly discharge its oversight responsibilities.

M.3.2 WPO has sufficient numbers of skilled and trained personnel to oversee safety and environmental aspects of contractor activities at the WIPP site during the test phase of operations.

M.3.3 WPO fosters a safety culture that gives high priority to safety and protection of the environment.

M.3.4 WPO has sufficiently trained and skilled personnel to properly manage the WIPP transportation program.

M.4 The Albuquerque Operations Office (AL) has the capability to adequately support WPO in its responsibilities to oversee health, safety and environmental protection.

M.4.1 AL has sufficient number of skilled and trained personnel to support the WPO, both on a routine basis and during periods of unusual or off-normal operations.

M.4.2 The AL management has demonstrated a commitment to support WPO through their actions and specific written directives.

M.4.3 Clear agreements are in place and operating properly to assure that AL can obtain and provide adequate financial and program management and support for the WIPP responsibilities to oversee health, safety and protection of the environment.

M.5 A clearly defined, traceable and functioning organizational chain of command exists from the responsible DOE headquarters program organization to AL and WPO to assure that all involved individuals and organizations know and discharge their responsibilities for health, safety and environmental protection.

M.5.1 The DOE headquarters responsibilities for WIPP activities, including packaging of waste, transportation and operation of the WIPP facility, are clearly assigned.

M.5.2 The point at which responsibility for waste streams at the generator locations is transferred to WIPP managers is clearly identified.

M.5.3 The headquarters responsibilities are properly discharged.

M.6 Adequate oversight and DOE internal oversight of WIPP program activities is provided.

M.6.1 Department of Energy independent oversight organizations have performed recent audits of the WIPP facility and operations and their recommendations and findings have been adequately accommodated.

M.6.2 The DOE-funded independent oversight group, the New Mexico Environmental Evaluation Group (EEG), has developed a clearly defined charter and internal oversight procedures consistent with that charter, has demonstrated its independence from DOE or other outside

influences, has performed timely evaluations of the WIPP facility and operations, and EEG's recommendations and findings have been properly reported to and adequately accommodated by the WIPP project.

Functional Areas and Program Readiness

F.1 There are established organizations that are adequately staffed and trained and with the appropriate organizational structure, procedures and equipment to support facility operations.

F.1.1 There is an adequate emergency preparedness organization and program.

F.1.2 There is an adequate engineering support organization and program.

F.1.3 There is an adequate environmental protection organization and program, to include Air Quality, Surface Water, Groundwater, Solid and Hazardous Waste, Hazardous Material Handling, Environmental Monitoring, Hazardous Substance Release Reporting, and Environmental Protection Quality Assurance.

F.1.4 There is an adequate fire protection program.

F.1.5 There is an adequate maintenance organization and program.

F.1.6 There is an adequate quality assurance organization and program.

F.1.7 Radiological protection programs and procedures provide appropriate direction, effectively support safe operation of the facility, and ensure adequate protection of workers, the public, and the environment in accordance with DOE Orders.

F.1.8 There is an adequate security organization and program.

F.1.9 There is an adequate training organization and program.

F.1.10 Industrial hygiene and safety programs, policies and procedures have been developed which are consistent with the hazards present or anticipated in the working environment as well as with DOE Orders and OSHA standards. The overall program is effectively managed to promptly address and remedy hazards and systems are in place to communicate information to workers in order

to prevent occupational injuries and illnesses.

F.2 The TRU waste packaging and transportation equipment and programs for the Dry Bin Scale Test Program will provide assurance that properly categorized TRU waste will be properly loaded, packaged, transported and unloaded at the WIPP Facility in compliance with health, safety, and environmental requirements.

F.2.1 TRU waste shipped to WIPP meets the WIPP Waste Acceptance Criteria (WAC).

F.2.2 WIPP TRU waste shipments are packaged, loaded, secured, and documented following approved procedures and in compliance with all applicable Federal and State requirements.

F.2.3 Transportation of transuranic waste is by properly licensed vehicles, licensed and trained drivers using verified procedures.

F.2.4 Routing from the INEL, point of origin, to the WIPP facility is in accordance with all Federal and State permitting requirements, and agreements and systems to support WIPP shipments are operationally ready.

F.3 There are adequate support programs with appropriate requirements, procedures and assigned staff to support safe facility operations and waste handling.

F.3.1 There exists an adequate configuration management program to assure necessary change and drawing control of plant structures, systems and components and to assure changes are reflected in training, procedure development and maintenance.

F.3.2 There exists a program of self-assessment to measure safety performance and to determine root causes of unusual occurrences (UOR).

F.3.3 There exists an adequate review and oversight of unresolved safety question determinations.

F.3.4 An adequate records management program exists to assure that all important documents, records and related information is maintained current and readily retrievable.

F.4 A program has been established to identify, evaluate and resolve recommendations and findings made by oversight groups, official review teams and audit organizations.

F.4.1 A program for identifying, reviewing and cataloging deficiencies or recommendations is established and adequately implemented.

F.4.2 A system for prioritizing and tracking corrective actions and recommendations is established.

F.4.3 A program exists to track and resolve all remaining issues that must be resolved prior to initiation of the WIPP test phase of operations.

ATTACHMENT 3

CRITERIA AND REVIEW

APPROACHES

H.1 Objective: The structures, systems and components that are important to safe waste handling operations are properly identified, available, and sufficient, and are consistent with the assumptions about such systems in the FSAR.

H.1.1 Sub-Objective: Systems important to safe waste handling operations have been identified in the FSAR.

Criteria:

1. Verify that the systems important to safe waste handling (ISWH) are adequately defined, identified, and described in the FSAR.

Approach:

1. Confirm that the systems as identified on Table H.1.1-1, WIPP SYSTEMS IMPORTANT TO SAFE WASTE HANDLING (ISWH), comprise all the systems defined at the WIPP as being ISWH, including systems necessary for the safe conduct of experiments and systems for safe response to unexpected and emergency events.

2. Review the FSAR to verify that each of the systems listed on Table H.1.1-1 are addressed in the FSAR. For the Test Bin Overpressurization Protective and Gas Monitoring Systems verify that functional requirement are clearly stated. Verify that functional requirements are clearly stated for at least five (5) additional systems - one system from each of the five principal system categories listed for the Base Facility on Table H.1.1-1.

Basis:

Expert judgment is the primary basis for the above criterion and approach. Guided by applicable DOE Orders and industry standards, experience ORR reviewers will evaluate the WIPP FSAR to verify that the criterion and subjective are achieved by the WIPP FSAR.

References:

DOE 5481.1B Safety Analysis and Review System, May 19, 1987.

DOE 6430.1A General Design Criteria, April 6, 1989.

DOE 5480.4 Environmental Protection, Safety and Health Protection Standards, May 16, 1989.

DOE 5480.5 Safety of Nuclear Facilities, September 23, 1986.

H.1.2 Sub-Objective: Systems in the facility important to safe waste handling operations, including equipment and instrumentation used to demonstrate compliance with Limiting Conditions for Operation and Operational Safety Requirements, are adequately identified.

Criteria:

1. WIPP standards and or procedures are established that adequately specify the approved equipment and systems nomenclature, method of coding, and the method of tagging, marking, or labeling for systems important to safe waste handling operations, including bin-test operations, for equipment and instrumentation used to demonstrate compliance with LCOs and OSRs, and for equipment and systems out of service.

2. Proper identification markers are installed on system components and are readable.

3. Labeling of controls and displays is consistent in format and legibility. Information on component labels is consistent with information found in facility procedures.

Approach:

1. Compare requirements for proper physical identification of safety systems and equipment in DOE 5480.19 with WIPP labeling guidance.

2. Walkdown at least three systems (one underground, one in the Waste Handling Building and one unique to the Bin Scale Test Phase) in their entirety to ensure proper identification - i.e., proper ID markers in accordance with WIPP labeling guidance. In addition, select one or more locations in which operators or maintenance personnel may be expected to work. Inspect labels on local control and display devices for readability, including adequacy of lighting.

3. Identify one operating procedure associated with each of the systems selected previously (Approach 2). Compare the terminology, coding, methods of equipment identification used in the procedures with that actually affixed to the devices in the field.

4. Review UORs relevant to problems of equipment identification.

Basis:

WIPP personnel may be misled or confused by physical identification which differs from nomenclature provided in procedures or by components which are not identified, or identified with nonstandard nomenclature. The identification of systems and components is vital during normal and abnormal operating conditions.

References:

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 9, 1990

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986

H.1.3 Sub-Objective: The adequacy of as-built drawings for systems important to safe waste handling (ISWH) operations has been verified and an adequate system for maintaining them current is in place. This will include walkdowns of selected systems to verify compliance with as-built drawings.

Criteria:

1. The configuration of systems ISWH as contained on design drawings have been physically verified.

2. A program is in place to ensure that changes made to the configuration of systems ISWH are reflected in approved design drawings.

3. A program is in place to ensure an accurate and current record of equipment and systems design, status, and configuration, with clearly identified responsibility for maintenance and control of that record.

Approach:

1. Confirm that a program is in place and has been carried out requiring the physical walkdown of systems ISWH to verify the accuracy of applicable design drawings. Verify that as-built drawings of systems ISWH have undergone reviews as mandated by the governing program. Select one system ISWH and confirm the validation/verification process by comparing the design as documented on the drawing with the actual field installation.

2. Obtain and review the drawing control program procedure(s) to ensure that for systems important to safe waste handling, a drawing change control process is well defined. Verify that the change control process highlights requirements for timeliness and the rapid dissemination of design changes to personnel responsible for system/equipment operation and maintenance including procedure update and retraining as necessary. Confirm that the program has been adequately implemented and that temporary and permanent changes are also adequately controlled.

3. Verify that a program exists which addresses the requirements of criterion 3. Interview personnel to confirm their understanding of their role in the program. Select a system and confirm that records accurately reflect the system's design status.

Basis:

It is industry practice that drawings relied upon by operators and maintenance personnel must accurately reflect the plant configuration, and that the function, design basis, and current status of ISWH equipment and systems are known and documented, with up to date accurate records. These drawings must be prepared, approved, controlled, and used to ensure that the plant is operated safely and within the limiting conditions for operation.

References:

DOE 5480.19 Conduct of Operations Requirements for DOE Facilities, July 9, 1990.

DOE 5700.6B Quality Assurance, March 28, 1990.

H.1.4 Sub-Objective: Administrative controls are provided to assure that modifications to facilities and systems important to safe waste handling operations are analyzed, documented and approved.

Criteria:

1. Procedures and management directives require that all changes to waste handling facilities be properly analyzed, documented, and affirmed by appropriate personnel and organizations.

2. Procedures and management directives for changes to waste handling facilities are properly executed.

Approach:

1. Review management directives and procedures to identify change procedures which establish that changes to waste handling facilities require analysis (of their own functionality, safety and possible interactions with other systems), documentation and review by appropriate Westinghouse/Sandia and DOE organizations prior to their implementation.

2. Review at least two major changes to waste handling facilities to establish that these changes were properly analyzed (of their own functionality, safety and possible interactions with other systems), documented and reviewed, including, where necessary, reviews by independent organizations.

Basis:

Criteria are consistent with INPO Guidelines ensuing adequacy of design control and configuration control. Applicable DOE Orders were reviewed for additional guidance.

References:

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluations.

INPO 90-009 Guidelines for the Conduct of Design Engineering.

INPO 90-015 Performance Objectives and Criteria for Operating and Near Term Operating License Plants.

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations.

DOE 5481.1B Safety Analysis and Review System, May 19, 1987.

H.1.5 Sub-Objective: An adequate process has been established to assure that documentation for facilities and systems important to safe waste handling operations is established and kept current.

Criteria:

1. Administrative procedures which establish a document control program for maintaining documentation for plant structures, systems, and components is in place.

2. The document control program controls procedures, policies, engineering drawings plant drawings and equipment manuals are maintained and are up to date.

3. The document control program assures that uncontrolled drawings, manuals, and procedures are not used at the work location.

Approach:

1. Perform a review of the documented control programs and procedures used to control structures, systems and components with special emphasis on the safety review and approval aspects of the process.

2. Select typical drawings and procedures for review and track the control process to and from the users to the document control program.

3. Observations of work in process involving structures, systems, and components are made and any use of uncontrolled drawings, procedures or manuals is noted.

Basis:

Experience in the DOE and commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for design changes. DOE 5700.6B requires formal application of quality assurance requirements, including assessment against recognized standards. DOE 5700.6B also states that NQA-1 is the preferred standard for quality assurance for nuclear facilities. In addition DOE 5820.2A requires NQA-1 for waste transportation activities.

References:

DOE 4700.1 Project Management System, March 6, 1987

DOE 5700.6B Quality Assurance, March 28, 1990

DOE 5820.2A Radioactive Waste Management, September 26, 1988

ASME/NQA-1 Quality Assurance Program Requirements for Nuclear Facilities, 1989

H.2 Objective: The readiness condition and operability (including maintenance and surveillance needed to assure continued operability) of systems important to safe waste handling operation is confirmed.

H.2.1 Sub-Objective: Instruments, indicators and alarms that monitor Limiting Conditions for Operation or that satisfy Operational Safety Requirements or provide Bin test data have been demonstrated to be capable of performing their intended functions in the required manner.

Criteria:

1. Start-up tests and ongoing test procedures for systems important to waste handling operations include approved engineering design acceptance criteria.

2. Systems important to waste handling operations instrumentation start-up tests have been completed and documented.

3. The WIPP configuration management, maintenance and radiological programs document program requirements and organizational responsibilities for testing, inspections, surveillance, corrective and preventive maintenance, modifications and post-maintenance testing of systems important to waste handling operations.

4. Instrument "set-points" of the systems important to waste handling are maintained and documented in a controlled manner, and ongoing testing requires documentation of "as found"/"as left" conditions.

5. Instrument calibrations are renewed on schedule and documented as required by applicable procedures.

Approach:

1. Select at least two test procedures (one of which should incorporate a revision) for systems important to waste handling instrumentation and verify the adequacy of the procedures to test the instrument functions and to provide clear, concise instructions and caution statements. Document results and provide an indication of safety significance for any deficiencies identified.

   Review any specific recommendations for test procedure improvement included in prior readiness reviews to ascertain the effectiveness of corrective action.

2. Review Westinghouse Integrated Check List for verification of systems important to waste handling instrumentation start-up tests and/or select a sample of six component tests for review. Verify adequacy of the test record retention and retrieval process and completion of the testing, and documentation of operational turnover.

Observe the conduct of at least two operating tests and at least two post-maintenance tests to assess systems training and knowledge and procedural compliance of personnel conducting the test.

3. Review configuration management and maintenance program documentation and conduct at least one mid-to-upper management level interview in maintenance, operations and engineering to verify adequate understanding of testing responsibilities.

4. Review at least three test procedures in order to verify the adequacy and timeliness of the "set-point" control and update process.

5. Review documentation and timeliness of existing instrument calibrations. Review UORs related to instrument error.

Basis:

Appropriate procedural controls and clear definitions of responsibility are necessary to ensure that instrumentation systems important to safe waste handling are performing the functions for which they were intended. Industry experience has shown that particular attention is warranted to clarity of procedures and controls for post-maintenance testing to ensure effective configuration control and system operability.

References:

DOE 4330.4A, Maintenance Management Program, 4/19/91.

DOE 5700.6B, Quality Assurance, 3/28/90.

NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

INPO 87-028, Post-Maintenance Testing, 12/87.

INPO 87-026, Set-Point Change Control Program, 6/86.

INPO 85-026, Writing Guideline for Maintenance, Test and Calibration Procedures, 6/85.

ANSI N 323

H.2.2 Sub-Objective: Any maintenance backlog for systems important to safe waste handling operations has been justified and is acceptable for initial operation.

Criteria:

1. Management has established standards for what is an acceptable amount of maintenance backlog and a system exists to control and review the open work backlog.

2. Means are provided on-site to ascertain the availability and operability of systems important to waste handling operations components and overdue preventive maintenance or calibration for these components.

3. The maintenance backlog for systems important to waste handling operation components is adequately managed and includes an effective review for safety implications and justification for continued operations.

Approach:

1. Review management standards and goals related to maintenance backlog management. Conduct an assessment of backlog reasonability in terms of aging, PM/CM mix, craft responsibilities, reasons for delay and potential implications for safe waste handling operations. Assess availability of resources and skills and acceptability of backlog standards and performance for operational readiness.

2. Verify by site tour(s) the inclusion of inoperable equipment in the maintenance backlog, and ensure that the backlog includes scheduled/overdue preventative maintenance actions. Review process and procedures governing the "daily schedule" communication vehicle to ensure that appropriate management and support personnel are apprised of operations and maintenance problems affecting systems important to waste handling operations components. Ensure that overdue preventative maintenance and calibrations are considered and included in equipment availabilty reporting.

3. Review procedures related to maintenance backlogs and equipment operability determinations to determine if documented means exist for providing reviews of safety implications and/or justification for continued operations. Augment this analysis with interviews of management, oversight groups and operations.

Basis:

Prior to commencing operation, the WIPP organization must ensure that their work control system is operating effectively and that they can justify operations if any systems important to waste handling operations components are inoperable. Backlog trends and aging analysis can provide valuable insights to the organization's availability and utilization of resources.

References:

DOE 4330.4A Maintenance Management Program

INPO 85-038 (Rev 1) Guidelines for the Conduct of Maintenance at Nuclear Power Stations (12/88)

INPO 90-015 Performance Objectives and Criteria for Operating and Near-Term Operating License Plants (8/90)

H.2.3 Sub-Objective: Good Housekeeping and pride of ownership is evident throughout the facility.

Criteria:

1. Procedures and training programs are in place to promote good housekeeping and to control hazardous materials, ignition sources and transient combustibles.

2. Work spaces are clean and free of clutter and debris, and equipment and tools are properly stored.

3. The work forces take responsibility for housekeeping in their assigned work areas.

4. Procedures exist and are enforced to control secondary contractor work to site standards of good housekeeping.

5. Management personnel make random, unannounced, and regularly scheduled tours of the work spaces in order to assess the housekeeping.

6. Personnel are assigned coded work clothes and protection equipment and wear them in all work areas.

Approach:

1. Review and assess the documentation of policies and procedures governing good housekeeping, facility inspections, and controls for hazardous materials, ignition sources and transient combustibles. Review general employee training curricula to ascertain the level of indoctrination provided on housekeeping standards and controls of hazardous, radiological or potentially unsafe materials in work spaces.

2. Tours of the accessible work spaces will be made to identify housekeeping deficiencies. Particular attention during thes tours will be paid to the use of temporary equipment and so called "lash-ups", long out-of-service equipment, excessive use of extension cords and temporary drain lines.

   Observations will be made to evaluate the cleanliness of large rotating machinery and their lubricating and cooling systems to ensure that they are properly maintained. Oil and water should be controlled and contained so as not to cause a housekeeping problem.

   Painted surfaces will be observed to ensure that chipping and flaking is minimized. Special attention will be paid to surfaces which are prepared to minimize

radioactive contamination control.

3. Workers engaged in performance of operations and maintenance tasks will be observed in order to evaluate the following practices:

   a. Proper care while the job is in progress to minimize clutter and debris, and to contain spills and drainage.

   b. Proper storage of tools during work breaks to minimize hazards to other personnel.

   c. Proper clean-up at the completion of the job.

4. Review Procedures and training used for contract construction/maintenance personnel to determine the guidance provided concerning good housekeeping standards, and controls for hazardous radiological & potentially unsafe materials in work spaces. Interview two line managers and one contracting officer to determine inspection feedback and enforcement practices for subcontractors.

5. Review documentation supporting a Management Observation Program (MOP). Ensure that the MOP assigns specific managers to conduct area walkdowns throughout the site and document tour records and note deficiencies in housekeeping practices. The MOP ensures responsible personnel are notified of housekeeping discrepancies and a system of control is in place to track and report open discrepancies until they are corrected. Interview at least three managers and workers (preferably during conduct of work) to ascertain the frequency of unscheduled (non-MOP) management tours of work spaces and how they handle observations of housekeeping practices.

6. Observe apparel worn by all personnel to ensure proper uniform and safety equipment is worn in appropriate areas.

Basis:

In the early stages of WIPP operations, the management and work force habits and culture will institutionalize practices of housekeeping and material controls. Color coded work uniforms have proven useful in establishing team spirit and pride of ownership in power reactor crews. There is a direct correlation between good housekeeping practices, pride of ownership and the level of industrial and radiological safety at industrial facilities.

References:

DOE 5480.19 Conduct of Operations Requirements for DOE Facilities, 7/9/90

H.2.4 Sub-Objective: Tools and equipment for proper maintenance of systems important to safe waste handling operations have been identified, calibrated, tested and are available.

Criteria:

1. Responsibilities have been assigned for identifying, sourcing, processing, determining reparable recycling, testing and inventory management of spare parts, maintenance tools, supplies and equipment.

2. Traceable characteristics for maintenance tools, equipment and spare parts (e.g. stock on hand, reorder mechanism, substitutability, detail specifications, shelf life, etc.) have been established and documented and are accessible to users in a timely fashion.

3. The supply of spare parts, tools and maintenance equipment is adequate to support the mission and compatible with maintenance staffing levels.

4. Measurement and test equipment calibrations for systems important to waste handling operations are traceable to national standards, the equipment control process has been validated, and adequate inspection and periodic test requirement have been specified to maintain calibration limits.

5. Maintenance test equipment, tools and supplies are compatible with the environmental conditions expected for normal and off-normal operations.

Approach:

1. Review maintenance program documentation and interview managers responsible for maintenance, engineering, quality assurance and logistic support to verify their understanding and documentation of responsibilities for maintenance tools, test equipment and supplies. Verify that an improvement process exists which allows feedback and corrective/improvement actions for incorporating recommendations from vendors, regulators, operating experience and history, and self-assessment audits.

2. Analyze the process and procedures developed for compiling and identifying site and support equipment listings (configuration management, or other nomenclatures). Determine the extent to which the equipment configuration controls are integrated with maintenance planning activities, maintenance history retention and materials management records. Interview

personnel working in maintenance supervisory and planning roles, procurement engineering, purchasing and materials management to ascertain availability, security and accountability of item characteristic data. If a computerized data base is available, select 20 random line items and assess data completeness and integrity.

3. Review technical manuals, maintenance procedures and operating procedures to identify at least 10 to 15 different tools or supplies required for maintenance. Compare these identified needs to site equipment/parts lists and verify that these items are available and are being used as prescribed. During plant tours and observations of maintenance activities identify use of unauthorized tools and supplies, or lack of appropriate tools.

4. Review site Quality Assurance (QA) manuals to assess the procedures used to control measurement and test equipment and compare these to industry practice and the requirements of NQA-1. Review calibration laboratory/shop records to ensure that evidence verifies that calibrations, reference standards and non-conformance requirements are controlled.

5. Select at least three important maintenance tools (at least one providing worker radiation protection), and at least three randomly selected supply items which have MSDS labeling requirements. Use these items to review procurement engineering and purchasing specifications to verify that measurement ranges, pressure, temperature, air flow and hazard constraints anticipated in the FSAR or other design bases information provided were considered. Review UORs related to failure of equipment and systems.

Basis:

Industrial safety and WIPP mission-related equipment reliability requires the availability of properly specified maintenance support equipment. Maintenance equipment provided must be maintained and calibrated to ensure that maintenance activities are safe, effective and maintain configuration management controls.

References:

DOE 4330.4A Maintenance Management Program, 10/17/90

DOE 5700.6B Quality Assurance, 03/28/90

ASME/NQA-1 Quality Assurance Program Requirements for Nuclear Facilities (1989)

INPO 85-038 Guidelines for the Conduct of Maintenance at Nuclear Power Stations (12/88)

INPO 90-015 Performance Objectives and Criteria for Operating and Near-Term Operating License Plants (8/90)

H.2.5 Sub-Objective: Operability of systems important to safe waste handling operations in accordance with existing procedures is physically verified.

Criteria:

1. The Integrated Systems Checkout (ISC) program for systems important to waste handling operations evaluates the design features and functional requirements of systems and components.

2. Systems important to waste handling operations have completed testing which verified and documented operability and turnover to Operations.

3. Operations and maintenance procedures (including shift tours, surveillance tests, inspections and preventive maintenance) for systems important to waste handling operations specify measurement and trending requirements, and acceptance criteria for operability, and clearly assign responsibility for operability determinations and entering action statements for Limiting Conditions for Operations.

4. A program has been implemented to include post-maintenance testing in all work plans for systems important to waste handling operations equipment.

5. ISC documentation is complete and is stored as retrievable permanent documents.

Approach:

1. During operations, witness ISC testing of systems important to waste handling operations and assess the adequacy of the LCOs identified to determine the ability to meet system functional requirements specified in the FSAR under conditions allowed.

2. Review documentation of systems important to waste handling operations for testing to verify turnover to Operations, status of pending retests or request for exemptions and modifications. Determine whether start-up testing has been completed and whether the completion was verified by QA or other independent review. Using the four systems important to waste handling operations selected above (1) verify that deficiencies noted in start-up tests or retests have been corrected.

3. Select at least two systems important to waste handling operations for procedural verification of operability.

a. Review operating and maintenance procedures to determine whether responsibility for operability are defined and include acceptance criteria and testing requirements.

b. Conduct a systems walk-down to verify procedures used for the start-up test.

c. Assess the adequacy of applicable preventive maintenance and surveillance procedures to validate operability.

4. Review the maintenance program to verify that post-maintenance testing (PMT) is used to verify operability of systems important to waste handling operations after maintenance. Review at least four recent maintenance work packages to ascertain if the PMT specified did verify operability.

5. Assess the administrative control program used for test documentation. Review documentation for at least two completed systems for completeness. Assess adequacy of storage media and facilities, and retrievability of the documentation. Review UORs related to systems operability.

Basis:

During the Bin-test program it is important to verify that proper operability acceptance criteria were used in turnover tests and that these criteria are effectively documented. Standard industry practice requires proper documentation of acceptance criteria in procedures, and verification that operating limiting conditions meet all functional design requirements.

References:

QA Manual (WIPP) - DOE/EH-0135 (section TS.4)

ANSI N 45.2

NQA-1

ANSI N 18.7

H.2.6 Sub-Objective: Surveillance requirements, procedures and intervals are adequate to assure operability of systems important to safe waste handling operations.

Criteria:

1. Limiting Conditions for Operations (LCOs) and Operational Safety Requirements (OSRs) have been adequately established for systems important to waste handling operations based on written safety analyses to justify testing frequencies.

2. Applicable LCOs and OSRs are within the FSAR design bases for systems important to waste handling operations. The LCOs and OSRs specify safe action statements.

3. Systems important to waste handling operations (LCOs and OSRs) are adequately confirmed by a controlled surveillance process which ensures that testing is completed as scheduled procedures are controlled, and frequencies are adjusted per failure rates.

4. Review of completed surveillance tests are adequate to ensure that acceptance criteria are met and any trends are identified.

5. A clear process is defined and available to formally determine the operability of systems important to waste handling operations under unusual conditions.

Approach:

1. Review identified systems important to waste handling operations, including Bin-test experiments. Review LCOs and OSRs to ensure that they are covered by one or more surveillance procedures and that the safety analyses used to justify test intervals are based on a conservative approach using industry experience and standards.

2. Identify at least four systems important to waste handling operations including Bin-test experiments, and associated LCOs and OSRs and assess the ability of the plant systems to meet functional requirements (specified in the FSAR) under the conditions specified. Assess the ability of the LCO/OSR action statements specified to maintain safety and minimize adverse environmental impact.

3. Review the surveillance test (ST) program policies, procedures and schedules. Review records of

surveillance testing. Place special emphasis on reasons for any missed STs, how the status of operable equipment is affected, how return to service is accomplished and how procedures are changed to prevent recurrence. Evaluate the effectiveness of surveillance testing by witnessing a regularly scheduled test of a waste handling system. Special attention is paid to any deviations taken from the approved test procedure and the mechanism used to make temporary changes to test procedures. Interview at least three qualified operators to assess their understanding of the program. Review relevant UORs.

4. Review ST review procedures and conduct interviews with personnel responsible for reviewing completed STs. Determine their ability to justify the safety margins inherent in the LCOs and OSRs previously assessed (section 3) and to relate the LCO action statements to a projected accident sequence. Determine how the test data is used to provide improved system controls.

5. Verify that responsibilities for administration, performance and review of surveillance tests are clearly defined in the ST program, and a timely process exists for responding to operator concerns and incorporating operating experience improvements.

Basis:

Critical or limiting conditions of operations should be documented for systems important to safety and operating personnel should be aware of the significance of these criteria. A surveillance program, including procedures and training, should be adequate to assure continued systems operability and to keep design limits visible to plant personnel and assist in fostering an effective safety culture.

References:

ANSI N45.2.11

DOE 6430-1A General Design Criteria 4/6/89

H.2.7 Sub-Objective: Maintenance requirements and procedures are adequate to assure continued operability of systems important to safe waste handling operations.

Criteria:

1. Work control procedures adequately provide for identification of equipment deficiencies and control of the prioritization, planning, scheduling and authorization of work to restore systems important to safe waste handling operations.

2. Effective predictive and preventive maintenance programs exist for systems important to safe waste handling operations.

3. A post maintenance testing (PMT) program is used for maintenance activities conducted on systems important to safe waste handling operations.

4. Equipment maintenance history is maintained and used in maintenance planning for systems, important to safe waste handling operations.

5. A process is in place to collect information relevant to improved maintenance practices from vendor bulletins, and other operating experience, and to integrate this feedback into the maintenance programs for systems important to safe waste handling operations.

Approach:

1. Review maintenance procedures and management directives to determine their adequacy to define responsibilities and timeliness for identifying equipment deficiencies and controlling the prioritization, planning, scheduling and authorization of work. Interview several operators & maintenance supervisors and review last year's maintenance history to determine the two "least available" components for systems important to safe waste handling operations. Determine operators' level of satisfaction concerning prioritization of maintenance work and maintenance supervisors' satisfaction with work authorization practices.

2. Use the identified "least available" components (from above) for a detailed review of predictive and preventive maintenance tasks. Determine if predictive maintenance activities are trended and reviewed and whether criteria are specified adequately for taking corrective actions. Review the past year's preventive

maintenance schedules for the components identified to ascertain schedule compliance and management /technical justifications for deferrals and cancellations.

3. Review PMT program documentation and at least five work packages on "least available" components to determine the adequacy of post maintenance testing. Ensure that tests clearly specify test instructions and acceptance criteria sufficient to verify operability of components and systems. Review rework goals and performance and determine the adequacy of review and corrective action programs in place to reduce rework.

4. Review maintenance program documentation and applicable procedures in maintenance and engineering to ensure that maintenance history is adequately maintained. Interview at least three maintenance planners and cognizant engineers to assess the utility of maintenance history for improving maintenance planning and evaluating the effectiveness of predictive and preventive maintenance tasks.

5. Review maintenance program documentation and applicable procedures in maintenance and engineering to determine how lessons learned, operating experience and technical information updates are used to improve maintenance programs for systems important to safe waste handling operations. Interview cognizant maintenance managers and engineers responsible for the "least available" components identified earlier and review the status of plans for improving the availability of these components. Review the program and process to collect and review vendor updates and operating experience at other facilities, to determine applicability of that information to WIPP safe waste handling and experiments, and to utilize applicable information.

Basis:

Industry experience has shown that good maintenance practices enhance the safety of facility operations and the reliability of equipment and systems. An effective program of predictive, preventive and corrective maintenance activities enhances availability and operability of equipment and provides data which can be used for continued improvements.

References:

DOE 4330.4A Maintenance Management Program (4/9/91)

INPO 90-015 Performance Objectives and Criteria for Operating and Near-Term Operating License Plants (8/90)

H.3 Objective: There are adequate procedures, Operational Safety Requirements (OSRs) and Limiting Conditions for Operations (LCOs) to operate the systems important to safe waste handling operations.

H.3.1 Sub-Objective: Procedures for operations, training, and maintenance reflect the configuration of all systems important to safe waste handling operations.

Criteria:

1. Operations, training and maintenance procedures have been verified to reflect the current configuration of systems important to safe waste handling operations.

2. A systematic administrative program is in place to ensure that modifications to systems important to waste handling operations are adequately reflected in revised operations, training, and maintenance procedures.

3. Documents, drawings, and other references which define the configuration of systems important to safe waste handling are readily available, authorized, and properly controlled.

4. Supplemental operating information, such as posted diagram or posted special instructions, are properly authorized, dated and controlled.

5. When appropriate, the sequence for conducting waste handling operations and plant equipment line-ups is specified and understood.

6. Technical details are correct and consistent between procedures, drawings, system descriptions, etc.

7. Adequate procedures are in place and implemented to inform operations and maintenance of equipment and systems that are inoperable and removed from service.

Approach:

1. Review and assess the formal process used to ensure that plant procedures reflect the current configuration of systems important to safe waste handling operations.

   Select at least one operations, maintenance and training procedure, preferably for systems important to safe waste handling operations that has been modified. Walkdown each procedure with the assistance of a cognizant person to determine if the procedure accurately reflects the current configuration.

2. Review the program for ensuring that modifications to systems important to safe waste handling operations are systematically reflected in revised procedures.

3. Audit quality assurance documents to assess adequacy of the program used to control those procedures addressed by this sub-objective.

4. Verify the controls exercised over operator aids posted in and around the work areas. Verify that these aids contain current, correct information and that systems are in place to maintain posted information current and correct. Review past UOR's (Unusual Occurrence Reports) related to this criteria.

5. Obtain at least two procedures which direct equipment/system line-ups. Discuss the procedure contents with an operator who normally performs the steps of the procedure, and "walkdown" the procedure with the operator. Confirm the operator's understanding of the procedure steps and the procedure's accuracy in describing system operation.

6. Assimilate source documentation (drawings, system, descriptions, procedures) available which describe at least three systems important to safe waste handling operations. Verify that nomenclature and identification systems used are consistent.

7. Obtain and evaluate procedures which define the WIPP equipment tag-out process to verify that maintenance and operations personnel are informed of equipment and systems which are inoperable or removed from service.

Basis:

It is essential that procedures accurately reflect the actual systems installed in the plant. If a waste handling operation is based on an incorrect system configuration, safety cannot be ensured. Verification of the current status of procedures relative to plant modifications must be accomplished and must be supplemented by a strong program that continues to ensure compliance with requirements. Procedures are required by DOE Order 5480.5 to be consistent with the current configurations.

References:

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986.

NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 3, 1990.

H.3.2 Sub-Objective: Operating and maintenance procedures and facility administrative procedures for systems important to safe waste handling operations are consistent with approved LCO'S and deal with normal and abnormal events.

Criteria:

1. Operational Safety Requirements (OSRs) and LCOs are sufficiently identified, documented, kept up to date, and are used in the development of operating, maintenance, and administrative procedures, including procedures for installing, operating, maintaining the test equipment in the Phase I program.

2. Operations, maintenance, radiation protection, and administrative procedures are up to date and consistent with approved OSRs and LCOs.

3. Procedures, as applicable, address normal and off-normal events.

4. Emergency and off-normal operating procedures effectively guide the operations staff in responding to single and multiple events. Alarm-response, off-normal, and emergency operating procedures are adequately linked and consider the Emergency Plan.

5. An adequate policy governing the use of procedures is implemented and provides designated authority to deviate from written procedures during an emergency, if necessary, to protect personnel and equipment or to maintain a safe condition. (Cross reference P.1.1)

6. Operational Safety Requirements specify appropriate bounding restrictions for the operating conditions indicated.

7. A formal mechanism exists that ensures that lessons learned during pre-operational, start-up and operational phases are incorporated into procedures.

Approaches:

1. Review and assess administrative guidance and training in procedures to determine if the preparation of operating, maintenance, and administrative procedures systematically supports compliance with the OSRs, and LCOs.

2. Select at least one operation, one maintenance, one radiation protection, one administrative procedure, and one procedure dealing with abnormal events and

determine if they accurately reflect the approved OSRs and if applicable OSRs are included.

3. Review the list of approved procedures to determine if procedures are included for normal operations and off-normal operations. Select six procedures (3 normal and 3 off-normal) and determine if the procedures sufficiently address all OSRs and LCOs. Assess the safety implications of any deficiencies noted.

4. Review at least three procedures (Operations, Maintenance, and Facilities Administration) to verify that off-normal events defined in procedures sufficiently are linked to the Emergency Plan. Through discussions with at least three operators and operational supervisor/managers, confirm operator knowledge of emergency/off-normal operating procedures steps.

5. Verify that an adequate policy exists and is in place which addresses and provides for Criterion 5. Through interviews with at least three operators, verify that the policy and potential consequences are thoroughly understood and that controls to preclude its abuse are effective. Review relevant UORs and other relevant past events at WIPP.

6. Review at least five specific OSRs to determine how each OSR is included in an operating procedure. The review is to ensure that the OSR is not only correctly interpreted into the operating procedure but done so in a manner that places specific bounding restrictions on the operation of the affected system/component.

7. Verify that the process defined in Criterion 7 is committed to a formalized procedure or process. Obtain the procedure and evaluate its effectiveness in achieving Criterion 7. Verify that personnel directly responsible for conduct of tests and procedure revision are sensitized to this procedure revision process.

Basis:

The OSRs and LCOs are to be implemented in procedures prior to operations. To ensure that the safety envelope is maintained, the procedures must implement the correct OSRs during normal and off-normal events. DOE 5480.5 requires the identification of OSRs. The above criteria and approach are used to determine whether or not the OSRs have been adequately incorporated into the procedures.

References:

DOE 5480.5, Safety Nuclear Facilities, September 23, 1986.

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 9, 1990.

H.3.3 Sub-Objective: Administrative controls are in place to ensure that deactivation of alarms is accomplished in a controlled manner requiring formal review and approval.

Criteria:

1. Procedures specify controls, approvals, and documentation necessary to deactivate indications and alarms for systems important to safe waste handling operations. Activities affecting the status of alarms are authorized by appropriate operations personnel. The responsibility and authority for authorizing deactivations has been clearly defined and properly implemented.

2. Maintenance work control procedures include requirements to ensure compliance with procedures relating to the deactivation of indications and alarms for systems important to safe waste handling operations. Deactivation is done in accordance with Operational Safety Requirements (OSRs) or other technical operational requirements. Bypassing, deactivation and subsequent restoration to service are documented and verified.

3. Operators are directed through procedures or other formal instruction to use backup instrumentation, measurements, and readings when primary alarms are rendered inoperative.

4. System status information is exchanged among maintenance start-up/test, and plant operations personnel on a frequent and routine basis.

Approach:

1. Review and assess the procedure for alarm deactivation and the associated notification requirements. Compare the procedure with the requirements of DOE 5480.19. Review the records for at least three alarm deactivations for procedure compliance. Review past UORs related to alarm deactivation. Inspect logs for current alarm deactivations and tag-outs. Locate the associated alarm indications and assess warning tags. Interview at least two plant supervisory and four operations personnel and assess their knowledge of alarm deactivation procedures and responsibilities.

2. Review maintenance work control procedures and assess the requirements that control deactivation of alarms. Identify the approvals required to deactivate alarms for equipment maintenance. Identify the requirements

to ensure that operations personnel know the status of equipment. Select at least two completed maintenance work packages that required deactivation of alarm. Note any requirements for alarm operability testing and notification when equipment is returned to operational status. Inspect records and interview participating maintenance and operations personnel. Determine if work control requirements for alarm deactivation and notification were properly implemented.

3. Interview at least three operators to discern their actions upon loss of certain alarms. Confirm their understanding and need to monitor redundant alarms or other variables in order to confirm safe/non-alarming conditions. Determine adequacy of training and adequacy of instructions available to operator when alarms are bypassed.

4. Obtain and review the three principal documents used to status system operability as used by maintenance, test, and plant operations. Verify that these documents contain consistent and current information and routine exchange of information. Verify that there is a formal, routine exchange of information.

Basis:

Without positive control over indications and alarms, operators may react in an unsafe manner to instrumentation relied on for plant status information. Alarm systems are particularly important in this regard because they generally monitor the most significant safety parameters directly. Therefore, it is essential that the deactivation of alarms is properly controlled and that operations personnel remain cognizant of alarm system status. Evaluation of these controls is to be based on DOE 5480.19, which includes industry guidelines on control of equipment and system status.

References:

DOE 5480.19, Conduct of Operations Requirements for Nuclear Facilities, July 9, 1990.

DOE 4330.4A, Maintenance Management Program, April 9, 1991.

H.3.4 Sub-Objective: The adequacy of operating procedures is demonstrated during equipment and system operability checks.

Criteria:

1. A program is in place to verify the adequacy of operating procedures.

2. The Integrated System Checkout (ISC) is used to verify that existing procedures are adequate.

3. Adequate policy and process are in place which explicitly:

   a) Identify and correct procedural inadequacies and conflicts.

   b) Action to be taken when procedures are found to be inadequate for the intended task or when unexpected results occur.

   c) Action to be taken if procedures conflict or do not contain adequate guidance.

Approach:

1. Review and assess the program that requires the adequacy of operating procedures to be demonstrated during actual equipment operability checks. Review actions taken to date. Review past UORs related to adequacy of procedures. Assess timeliness and adequacy of actions taken.

2. Review applicable independent QA audit plans, witness tests, and review other documentation which define at least three operability checks. Determine if the associated procedures are systematically demonstrated to be adequate.

3. Obtain procedures which control and direct the conduct of testing and the revision of operating procedures. Verify that there is clear direction and a mandate to modify procedures when procedures are found to be inadequate, ambiguous, or incorrect. Through discussions with at least three operators and operational supervisor/managers verify that operators are aware of their role in maintaining procedures which are correct, usable, and useful. (Also, see Supporting Objective H.3.5).

Basis:

To assess adequacy of operating procedures, it is essential that the team determine if operations conform to the formally required sequence of steps. Properly conducted operational checks confirm the adequacy of the operating procedures. The purpose of this supporting objective is to determine if operating procedures are physically validated for compliance with procedural standards to the extent feasible before and after actual operations begin, and to determine if there is an adequate program to identify and correct procedural inadequacies and conflicts.

References:

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 9, 1990.

DOE 5700.46B, Quality Assurance, March 28, 1990.

H.3.5 Sub-Objective: A system has been established to ensure procedures are kept current and accurate, including temporary changes to procedures.

Criteria:

1. An adequate program is in place that ensures the periodic review, revision, and approval of procedures.

2. An adequate program is in place that provides a visible means to ensure adequate evaluation and approval of temporary changes and timely removal when the purpose is superseded.

3. An adequate program is in place to ensure that changes to operational safety requirements are reflected in procedures.

4. Controls are effective in ensuring that only current and accurate procedures are available for distribution and use by plant personnel, including their use in training programs.

5. As part of the process for maintaining procedures current and accurate, sufficient time is provided for training before significant procedure changes are put into effect.

6. A viable process is in place which requires users of procedures to inform procedure writers of errors in procedures or difficulty in using procedures, and suggestions for improving procedure content or format.

7. A program is in place to ensure that the FSAR and regulatory-type commitments are reflected in procedures and remain in effect.

Approach:

1. Review the procedural control program to ensure that procedures for systems important to waste handling operations are periodically reviewed. In addition, review the procedural change management system and records to assess how changes are and have been actually made to procedures. Review the procedural control program using the guidance contained in DOE 5480.19.

2. Review the procedural control program to confirm that temporary procedures are adequately controlled. Specific attention is given to the approval process, the length of time allowed for use of temporary

procedures, and the process for notifying other affected organizations.

Interview at least two operators in the field to assess whether they understand the system and can describe how they know whether a temporary change is valid. Evaluate the adequacy of the program by using the guidance
contained in DOE 5480.19.

3. Review the OSR management system and determine whether or not the system contains requirements to change procedures to reflect changes to OSRs and to assess other changes for their impact on OSRs. In assessing the ability to control changes that could affect OSRs, evaluate the procedural change process, including quality assurance records, to determine if controls ensure that changes made to procedures do not violate the effective OSRs. Determine if safety systems procedures are reviewed by a safety review committee or other appropriate reviewer. If deficiencies are discovered in the control of OSR-related changes to procedures, consider expanding the scope of this review. Evaluate the adequacy of the program by using the guidance contained in DOE 5480.19 and DOE 5700.6B.

4. Obtain Distribution Control related procedure to verify adequate controls over procedures used by plant personnel. Verify controlled copy distribution system. Assess adequacy of distribution controls by verifying Revision Levels and ease of access to controlled documentation and procedures.

5. Obtain and evaluate the procedure(s) which defines the procedure revision process to determine how users of a procedure are made aware of a revision and the significance of the revision. Determine if the process is effective in training operators (alerting operator) to a revised procedure. (Evaluate training records if applicable and discuss with instructors (2) and operators (3).

6. Verify that there is a process which instructs users to maintain procedures that are correct, current, and usable. Evaluate the adequacy of the process to accomplish its goal (i.e., user input to the procedure revision process) and evaluate its effectiveness through interviews with at least five operators and maintenance personnel.

7. Review procedures to ensure commitment control is

implemented effectively. Interview management to ensure the implementation is understood and the process is working. Review UORs related to inadequate procedures, inadequacies in procedure control, or inadequacies in use of procedures in training.

Basis:

Operating procedures are used to ensure that OSR limits are not exceeded and that operations are conducted safely. An inaccurate or out-of-date procedure could compromise the safety envelope. It is imperative that procedures be approved and current, and that they are consistent with the effective OSRs. Experience in the nuclear industry is that procedures actually used by operators are sometimes updated very slowly or that changes may be incorrect; not vaguely written inconsistent, and conflicting; adequately reviewed, or incorporated incorrectly. This review applies to all (ISWH) procedures, but focuses primarily on those affecting OSRs. Problems in this area would suggest similar problems in controlling changes in other operating and maintenance procedures. Guidance is provided in DOE 5480.19 and DOE 5700.6B.

References:

DOE 5480.19 Conduct of Operations Requirements for DOE Facilities, July 9, 1990.

DOE 5700.6B Quality Assurance, March 28, 1990.

H.3.6 Sub-Objective: OSRs and LCOs are clearly stated and properly posted in appropriate locations.

Criteria:

1. All correct, clearly stated operating limits are properly posted in appropriate locations for ready reference.

Approach:

1. Inspect the posted operating safety limits for completeness, clarity and proper location. Compare posted limits against those maintained in controlled files. Inspect the records of independent checks that ensure limits are properly posted. Review and assess the procedures that validate and control the posting of operating safety limits. Ensure they are consistent with the guidance of DOE 5480.19, Chapter XVII. Determine if the posted OSRs and LCOs are up-to-date and accurately reflect the current OSRs and LCOs. Determine if the responsibility for OSR/LCO control is clearly identified, implemented, and follows applicable procedures.

Basis:

An operator should be able to correctly identify, interpret, and apply operating safety limits. Clearly posted and accurate safety limits are essential to ensure the ability of operators to comply with those limits. This requirement for posting important operating information is identified in DOE 5480.19.

References:

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 9, 1990.

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986.

H.4 Objective: Adequate facilities and equipment are available for operational support services.

H.4.1 Sub-Objective: Equipment and facilities needed for operational support services are adequate, available and operable.

Criteria:

1. Equipment and facilities used for operational support services are adequate, available and operable and those not used on a frequent basis are tested as part of the surveillance testing program.

2. Justification is documented for support system equipment and facilities taken out of service.

3. The use of temporary support system equipment and facilities are minimized and those that affect safety undergo safety review before use.

Approach:

1. The status of adequacy and operability of support system equipment and facilities are reviewed with emphasis to ensure that the waste handlers (operators) are aware of exactly which systems are available to them and what temporary equipment and facilities have been installed.

2. Observations are made via plant walkdowns to ensure that temporary support system equipment and facility use is minimized. This should include the longstanding use of extension cords and temporary cooling systems.

3. Maintenance records of equipment and facilities used for operational support are reviewed to evaluate if out of service equipment is receiving needed attention or is subject to excessive "shop time". Determine if the use of temporary support system equipment is minimized and whether temporary support systems that affect safety undergo a safety and adequacy review before use.

Basis:

Operability of facilities and equipment required for operational support services must be assured in order for the waste handling to be carried out in a safe manner.

References:

ANSI N45.2.11

DOE 6430.1A General Design Criteria 4/6/89

H.4.2 Sub-Objective: Sampling and analysis capabilities exist to perform monitoring and characterization activities for operations and environmental protection.

1. Equipment is in place and operable to locate and track hazardous materials released to the environment.

2. A system is in place to provide estimates of quantities and assess the integrated impact of releases of hazardous material on WIPP personnel, the public and the environment.

3. Hazardous substances are monitored, sampled, and analyzed in order to support making notifications and reporting reportable quantities to authorities.

4. Environmental sampling programs are conducted to establish a baseline for radioactivity in the environment in the vicinity of WIPP for use as a basis of comparison in the event of an excursion involving the plant.

5. Equipment and resources for sampling and analysis of environmental media are in place to provide assurance that significant releases from the WIPP program are not occurring and radioactive materials are not accumulating in the environment.

Approach:

1. Review procedures and observe a demonstration of equipment utilized for meteorological monitoring in the event of a hazardous material or radiological release, to verify that releases can be located and tracked.

2. Observe a demonstration of capabilities to assess quantities of releases and to determine hazards to specific groups of WIPP personnel, the public and environment, based on quantities released and meteorology.

3. Review testing of effluent monitors at release points to verify that airborne releases of particulate radioactivity can be determined. Review procedures and observe equipment for sampling, monitoring, and analyzing hazardous substances to ensure that provisions are in place to collect data for notification and reporting as directed by Federal requirements.

4. Review the preoperational baseline assessment of environmental radioactivity levels to verify that

measurable changes in radioactive levels can be determined.

5. Review the program of environmental sampling and analysis, and observe equipment utilized for sampling and analysis to verify that WIPP has the ability to determine if releases are occurring.

Basis:

Provisions must be in place to adequately assess the onsite and offsite consequences of an emergency.

References:

DOE 5480.4, Environmental Protection, Safety, and Health Protection Standards, 5/16/89.

DOE 5500.3A Planning and Preparedness for Operational Emergencies 4/30/91

Superfund Amendment and Reauthorization Act of 1986

Title 40CFR 302

H.4.3 Sub-Objective: The adequacy of as-built drawings for facilities and equipment needed for operational support services has been verified and a system for maintaining them current is in place.

Criteria:

1. Current drawings of equipment and facilities used for operational support services are available to the Operators.

2. Current drawings shall "be in the hands" of the Operators before any equipment or facilities (temporary or permanent) are used to support waste handling operations.

3. A drawing control system which maintains drawings "important to operation" of facilities and equipment used in support of waste handling is established. A listing of those drawings "important to operation" is developed and maintained with due consideration to safety.

4. The level of detail of drawings important to operation is sufficient to support safe operations.

Approach:

1. The status of the operability of support system equipment and facilities drawings is reviewed with emphasis to ensure that the waste handlers (Operators) have the necessary drawings available to them to properly operate the system and that they have confidence that the drawings they use are accurate and up to date.

2. A review of the drawing control system is made to ensure that drawings "important to operation" are maintained current and that other reference drawings are retrievable.

3. Review the adequacy of the drawing control system to support facilities and equipment used in waste handling operations.

4. Walkdown a sample of at least three drawings to quality check the level of detail.

Basis:

It is essential that as-built drawings for facilities and equipment needed for operational support services are maintained

current in order to properly operate the waste handling system in a safe manner.

References:

ANSI N45.2.11

DOE 6430.1A General Design Criteria 4/6/89

H.4.4 Sub-Objective: Administrative controls are provided to assure that modifications to facilities and systems for operational support services are analyzed, documented and controlled.

Criteria:

1. Administrative procedures are in place to control modifications to the facilities and systems used for operational support services.

2. Each modification is reviewed to determine if it affects safety. Those which affect safety undergo an appropriate safety analysis.

3. Administrative procedures include provisions for independent review of facility modifications before they are placed in service to ensure proper safety considerations have been met.

Approach:

1. Perform a review of the administrative procedures used to control facility modifications with special emphasis on the safety review aspects of the process.

2. Select typical modifications for review and track the modification control process from the conceptual design stage to modification completion stage (point at which modification is declared operable). These mod packages are reviewed to ensure all due safety consideration were included in the process, proper safety analysis was performed, design control was maintained, and documentation of the entire process was appropriate.

3. Review several recent facility modifications to determine whether the specified safety reviews were made.

Basis:

Administrative controls are provided to assure that modifications to facilities and system for operational support services are analyzed, documented and controlled.

References:

ANSI N45.2.11

DOE 6430.1A General Design Criteria 4/6/89

H.4.5 Sub-Objective An adequate process has been established to assure that documentation for facilities and systems for operational support services is established and kept current.

Criteria:

1. Administrative procedures which establish a document control program for maintaining documentation for operational support services is in place.

2. The document control program controls procedures, policies, engineering drawings, plant drawings and equipment manuals are maintained and are up to date.

3. The document control program assures that uncontrolled drawings, manuals, and procedures are not used at the work location.

Approach:

1. Perform a review of the document control programs, procedures and staffing level used to control facility documentation with special emphasis on the safety review aspects of the process.

2. Select typical drawings and procedures for review and track the control process to and from the users to the document control program.

3. Observations of work in process involving facilities and systems for operational support services are made and any use of uncontrolled drawings, procedures or manuals is noted.

Basis:

Experience in the DOE and Commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for design changes. DOE 5700.6B requires formal application of quality assurance requirements, including assessment against recognized standards. DOE 5700.6B also states that NQA-1 is the preferred standard for quality assurance for nuclear facilities. In addition DOE 5820.2A requires NQA-1 for waste transportation activities. Additionally, DOE 4700.1 and industry practices on configuration management will be considered during this evaluation.

References:

DOE 4700.1 Project Management System, March 6, 1987

DOE 5700.6B Quality Assurance, March 28, 1990

DOE 5820.2A Radioactive Waste Management, September 26, 1988

ASME/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

H.5 Objective: The underground facility and associated mining systems and operations are adequate to assure the health and safety of operating personnel and protection of the environment during the Dry Bin Scale Test Phase.

H.5.1 Sub-Objective: Operation of the underground facility complies with all applicable federal, state, local and DOE requirements, regulations and standards.

Criteria:

1. The configuration, design, construction and operation of the underground facility has incorporated the required safety features specified in 30 CFR 57 and any special recommendations of the Mine Safety and Health Administration.

2. Systems and procedures are in place for implementation of Subpart G of 30 CFR 57 (Ventilation), including requirements of 57.8520 (Ventilation Plan).

3. Regulatory standards and safe mining practices are routinely being applied to operations.

4. Procedures are in place for routine examination and reporting of ground conditions, unusual occurrences and correction of hazardous conditions.

5. A formal mine safety organization exists under the direction of a qualified supervisor and procedures are in place which establish organizational lines of responsibility, procedures and maintenance of records.

6. Safety programs are in place which are applicable to the activities in the WIPP underground facility and which include the requirements of Subpart Q of 30 CFR 57.

7. All personnel associated with operation of the underground facility are familiar with current safety programs and have received special instruction on the safety related issues pertaining to their work assignment or workplace.

Approach:

1. As built drawings will be examined and a visual inspection of the facility will be conducted.This review will include an interview with a senior staff engineer and a meeting with an authorized MSHA official who is familiar with WIPP. Applicable standards to be reviewed will include Subpart G Travelways, Escapeways), Subpart R (Personnel Hoisting, Hoisting procedures). The requirements of Subpart T (Classification) will be reviewed.

2. Examine the systems and procedures for implementation of Subpart G of 30 CFR 57 [Ventilation], including requirements of 57.8520 [Ventilation Plan] 3. A physical inspection of the underground facility will be conducted to evaluate overall adherence to regulatory standards and safe mining practice.

3. Examine established procedures for routine examination and reporting of ground conditions and procedures for correction of hazardous conditions. Discuss with two shift supervisors their examination procedures and observations.

4. Identify and interview the senior site official responsible for mine safety and review the mine safety organization, areas of responsibility and reporting procedures.

5. Establish that adequate safety programs are in place which include at a minimum the requirements of Subpart Q of 30 CFR 57, namely;

    57.18002 Examination of working places.
    57.18006 New employees.
    57.18009 Designation of person in charge.
    57.18010 First Aid Training.
    57.18012 Emergency telephone numbers.
    57.18013 Emergency communications system.
    57.18014 Emergency medical assistance and transportation.
    57.18028 Mine emergency and self-rescuer training.

6. Conduct interviews with not less than four operating personnel including two supervisors to establish that they have a working knowledge of safety issues, responsibilities and procedures. Establish by visual inspection that safety plans and information are prominently displayed in the working areas.

Basis:

Under the Federal Mine Safety and Health Act of 1977,the U.S.Department of Labor is responsible for developing and enforcing regulations and standards to protect mine workers.The Department of Energy has adopted the Safety and Health Standards-Underground Metal and Non-Metal Mines established by Part 57 of Title 30 Code of Federal Regulations.Under a Memorandum of Understanding (MOU) between the DOE and the Department of Labor,the Mine Safety and Health Administration (MSHA) conducts periodic health and safety compliance assistance inspections of WIPP mining operations, although MSHA does not have regulatory

jurisdiction over WIPP. Additionally DOE is committed to consult with the state of New Mexico in regards to issues of public health and safety.

References:

Federal Safety and Health Act of 1977.

Safety and Health Standards-Metal and Non-Metal Mines. Part 57 of Title 30 Code of Federal Regulations.

State of California Mine Safety Orders, California Administrative Code Title 8.

New Mexico Mine Safety Code for all mines.

Memorandum of Understanding (MOU), U.S. Department of Energy and the U.S. Department of Labor Mine safety and Health Administration dated, July 9, 1987.

DOE 5480.4, Environmental Protection, Safety, and Health Protection Standards, May 16, 1989.

H.5.2 Sub-Objective: Construction and operation of the underground facility is consistent with the descriptions and associated assumptions in the Final Safety Analysis Report (FSAR).

Criteria:

1. The as built condition of the facility are consistent with the facility descriptions used as the basis for safety analysis in underground areas important to operations and waste handling.

2. As built drawings of the underground facilities and associated structures correspond to the actual configurations.

3. There will be no operations conducted in any part of the underground facility during the bin testing phase which may materially affect the condition of the excavations, structures and surrounding salt strata and which have not been considered in the F.S.A.R.

4. The underground excavations and systems structures and components that are important to safe waste handling operations can be expected to maintain adequate structural stability,with reasonable maintenance through the bin scale testing phase.

5. Limiting conditions associated with identified failure modes for structures and components such as shaft liners, seals, excavations and hoisting systems have been correctly identified.

Approach:

1. A selective review of the as built drawings which relate to all areas of the underground facilities and operations will be conducted to evaluate consistency of the descriptions and assumptions used in the F.S.A.R.

2. Visual inspection of selected structures,systems and components will be conducted to establish consistency with the as built drawings and facility descriptions contained in the F.S.A.R.

3. Interviews with senior engineering staff of Westinghouse and Sandia will be conducted to confirm that no aspect of the operations during the period established for the bin testing phase is likely to materially affect the present characteristics or condition of the excavations.

4. Based upon the results of investigations detailed in Sub Objectives H.5.3, H.5.4 and H.5.5, and visual inspection of the excavated areas a professional judgment will be made.

5. Interviews with senior engineering staff will be conducted to discuss the failure mode and effects analysis and supporting data.

6. The FSAR and supporting analyses will be reviewed to evaluate the importance of safety issues of the underground facility not yet resolved by DOE oversight review.

7. Review applicable UORs.

Basis:

The FSAR, as defined in Order DOE 5481.1B is in part designed to systematically identify potential hazards and determine potential consequences. Risk analysis was conducted based upon facility descriptions, design criteria and postulated events described in the FSAR Verification of the descriptions and assumptions relating to the site conditions, systems structures and components, and the basis for design classification will therefore be conducted. It is not the objective of this review to conduct a separate safety analysis but to validate the assumptions used in that analysis and evaluate consistency of the descriptions and assumptions used in the FSAR.

H.5.3 Sub-Objective: The underground configuration, systems and procedures are adequate to support all proposed activities during normal and abnormal conditions, are in accordance with accepted mining practice and reflect the experience and standards developed in the local mining area, and are adequate for safety and environmental control.

Criteria:

1. Experienced mine operators who have familiarity with the unique conditions of mining in potash and in halite in the Carlsbad,NM area and have developed an understanding of potential problems and effective procedures have been consulted and the information has been documented.

2. Appropriate lessons learned have been incorporated into the final design and construction of WIPP and are reflected in established operating procedures.

3. Systems and procedures are adequate for safe and environmentally acceptable mining operations at WIPP.

Approach:

1. Interview authorized representatives of two local mining companies who have at least five years experience with responsibility in commercial mining of potash in the local area. Discussions will be focussed on lessons learned in four major areas, namely;

    a. Optimal excavation design.
        configuration and extraction ratios.
        empirical data on optimal room and pillar sizes.
        ground support systems.
        salt creep,floor heave and closure rates.
        room maintenance.

    b. Shaft maintenance.
        lined and unlined sections.
        seals.
        guides and fixtures.
        monitoring of water seepage.
        grouting procedures.

    c. Potential concerns.
        water inflow.
        gas emissions.
        rock bursts.
        brine pockets

d. Operational considerations.
special maintenance requirements.
ambient working temperatures.
special emergency preparedness requirements.
special training requirements.

2. The as built condition of the WIPP facility will be evaluated in the context of the information documented in item 1. The evaluation will be conducted using the as built drawings, physical inspection of the underground facilities and by conducting interviews with a senior engineer and operations supervisor. The evaluation will establish whether empirical data and lessons learned from practical experience in the Carlsbad area mining industry were carried forward to the final design,development and operating phases. It will also give indication that a reasonable correlation has been established with design objectives and geotechnical performance models for prediction of salt creep rates and long term room stability.

3. Interview WIPP personnel responsible for safe mining practices. Evaluate their knowledge with regard to the above criteria.

4. Review relevant WIPP procedures and evaluate.

5. Review relevant UORs.

Basis:

Underground mining of potash has been conducted in the Carlsbad area of New Mexico for many years and commercial mines continue to operate. Significant practical experience and empirical data has been accumulated with respect to mine layout, room and pillar design and routine operations under conditions which can be expected to be similar to those encountered at WIPP. Conceptual designs of the WIPP facility considered technical input from local mining engineers and operators. The Operational Readiness Review will include an evaluation of the as built status of the WIPP sub-surface facilities in the context of local mining experiences and current practices and will consider the significance, if any of the proposed testing activities.

References:

Documentation of personal interviews.

H.5.4 Sub-Objective: Systems and procedures are in place to facilitate the surveillance and monitoring of all structures and components of the underground facility during the bin testing phase. This includes observing indications of potential changes in the site conditions which may affect the stability of the excavations and shafts, and monitoring for indications of potential water inflows, gas emissions, rock bursts or any other unusual occurrence. The monitoring systems and procedures establish and maintain geotechnical and structural baseline data for reference in future years.

Criteria:

1. Adequate Policies, procedures and organizational responsibilities have been established to maintain continuous monitoring of all changes in the geotechnical and hydrological conditions affecting the site and the underground facility. Procedures should include regular visual inspections of all excavations, shafts and associated structures to observe and document any changes which may affect safety.

2. Adequate Policies, procedures and organizational responsibilities have been established to maintain regular monitoring, measuring and analysis of inflows or seepage into the shafts and excavations.

3. Adequate Policies, procedures and organizational responsibilities have been established to document all data and maintain appropriate Quality Assurance for information gathering and documentation activities.

4. Persons assigned to the duties of gathering and analyzing of geotechnical, hydrological and brine inflow data and persons assigned to conduct visual inspections are appropriately qualified.

5. Adequate Policies, procedures and organizational responsibilities have been established for up to date evaluation of all data leading to a process for design validation or remedial action.

Approach:

1. Review established policies, procedures and organizational responsibilities for continuous monitoring of geotechnical and hydrological data and review the procedures for regular inspections of excavations shafts and associated structures.

2. Review established policies,procedures and organizational responsibilities for monitoring of brine

inflow to the underground facility.

3. Review established policies,procedures and organizational responsibilities for documenting and processing data. Examine the methods used for documenting and maintaining all information.

4. Conduct interviews with persons assigned to data collection and inspection duties to determine their qualifications and experience and their understanding of the data collection program. Accompany assigned personnel on a routine inspection of the data gathering locations.

5. Conduct an interview with a senior staff engineer to discuss the process of data analysis, evaluation and design validation.

6. Review relevant UORs.

Basis:

Design criteria and projections of long term behavior of excavations in salt stratas are derived initially from empirical data supported by geotechnical data gathering, analysis and modelling conducted before or during the construction and development phase. Validation of the design, and long term performance of the excavations and related structures under specific site conditions is achieved by continuing an effective geotechnical monitoring program with real time analysis of new data. Such a program should be supplemented by regular visual surveillance and personnel should be trained to recognize, evaluate and respond to relevant indications of changes in conditions. The objective of this review is to evaluate the surveillance and monitoring programs and the process by which new data is gathered and integrated into current evaluations of safety and stability.

References:

Westinghouse controlled documents

Site Validation Program

Design Validation Program

Operational Geotechnical Instrumentation Program

Brine Inflow Studies

H.5.5 Sub-Objective: A maintenance program is in place to support safe operation of the sub-surface structures,systems and components during the bin testing phase.

Criteria:

1. Procedures,organizational responsibilities, adequate trained personnel, materials and equipment should be in place to conduct adequate regular inspections of the shaft liners and the unlined shaft walls,and initiate maintenance or repair procedures. Shaft repair materials and equipment should be maintained in a state of readiness.

2. Procedures,organizational responsibilities, adequate trained personnel,materials and equipment should be in place to initiate grouting procedures to seal water or brine in flows in the shafts and excavations if this should become necessary. Grouting materials and equipment should be maintained in a state of readiness.

3. Procedures and organizational responsibilities should be in place for periodic testing of ground support systems such as rock bolts and replacement of ground support as required.

4. Procedures,organizational responsibilities and adequate trained personnel should be in place for regular routine examination and testing of hoist ropes, shaft conveyance suspension systems shaft guides hoist safety and communication systems.

Approach:

1. Review established procedures,organizational responsibilities and state of readiness for maintaining and repairing the concrete shaft liners and ground support systems. Visually examine the availability and state of readiness of equipment and material.

2. Review established procedures,organizational responsibilities and state of readiness for initiating grouting procedures. Visually examine the availability of appropriate grouting equipment,material and experienced personnel.Interview the designated grouting engineer or supervisor.

3. Review established procedures and organizational responsibilities for re-testing of ground support systems such as rock bolts and re-establishment of adequate support should this be required.

4. Review established procedures for regular examination and testing of hoist ropes,shaft conveyances suspension systems,shaft guides,hoist safety systems, signalling and communication systems. Conduct an interview with two hoist operators and examine the hoist testing and maintenance records.

Basis:

Mine shafts, shaft liners, tunnels and ground support systems are subjected to a hostile natural environment and changing geomechanical stress conditions. Mechanical and electrical systems essential to personal safety are subjected to heavy utilization schedules. Standard mining practice and federal mining law requires that in order to maintain the functional integrity and safe operating condition of all components a rigorous maintenance program must be in place. Personnel responsible for examination and maintenance must be appropriately trained and materials and equipment must be available.

P.1 Objective: There are sufficient numbers of properly qualified operations personnel, supervisors and managers to support the safe initiation of the Dry Bin Scale Phase Test.

P.1.1 Sub-Objective: Operations personnel have an adequate understanding of technical fundamentals.

Criteria:

1. Training and testing materials address technical fundamentals relevant to Bin Scale Test Phase operations.

2. Operations personnel (operators, shift supervisors, and experimenters) have successfully completed required fundamentals training related to their responsibilities for the WIPP Bin-test program and supporting programs.

3. Operations personnel (operators, shift supervisors, and experimenters) have an adequate understanding of technical fundamentals related to their responsibilities for the WIPP Bin-test program and supporting operations.

4. Operations personnel, as defined above, are requalified with adequate technical knowledge for their defined responsibilities.

Approach:

1. Review training materials to assess their technical accuracy and comprehensiveness. Review testing methods to verify that they adequately reflect training content and test for an understanding of technical fundamentals. Interview five operations personnel to assess the relevance of training to their jobs and verify that training material is appropriate to the educational level of operations personnel.

2. Review the training records of 10 operations personnel to verify that required training was satisfactorily completed.

3. Interview at least five operations personnel to verify that they have an adequate understanding of technical fundamentals.

4. Review the program to train and requalify operations personnel as the program matures and as technical responsibilities and requirements change. Verify that training procedures assure that new and personnel transferred to different assignments after start up meet Criteria 2 and 3.

Basis:

DOE 5480.20 requires that operations personnel be provided training on technical fundamentals related to their jobs.

DOE 5480.11 requires training in ionizing radiation fundamentals for radiation workers.

Adequate technical knowledge, necessary for the assigned responsibilities, is required for operations personnel at all levels.

References:

DOE 5480.11, Radiation Protection for Occupational Workers, June 29, 1990.

DOE 5480.20 Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.1.2 Sub-Objective: Operations personnel and supervisors have been properly trained and qualified in accordance with the latest revision of approved procedures.

Criteria:

1. Training and qualification programs for operators, supervisors, and experimenters are based on the latest revisions of procedures.

2. Adequate training and qualification have been completed and documented for procedures performed by operations personnel, supervisors and experimenters.

3. Adequate programs for requalification are in place.

Approach:

1. Obtain a list of the most recently approved operating procedures for the Bin Scale Test Phase. Verify that the most recent procedural revisions are being used in training and qualification programs.

2. Review training records for five operators and two supervisors to verify that their training and qualifications are based on the most recent procedural revisions. Review UORs related to inadequate training.

3. Review requalification program and effectiveness of requalification.

Basis:

DOE 5480.20 states that qualification programs shall be kept up to date to reflect changes to procedures.

References:

DOE 5480.20, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.1.3 Sub-Objective: An adequate startup test program has been developed, implemented and will be used for final sign-off of operator qualifications.

Criteria:

1. The startup test program demonstrates that each operator's knowledge and proficiency is adequate.

2. Successful completion of the startup test program is required prior to final sign-off for operator qualification.

Approach:

1. Review the implementation plan for the startup test program. Ensure that those operations required for each operator's qualification are included as part of the startup test program. Observe the startup test program to determine if operators are performing as intended, including adhering to procedures, and identifying and controlling safety systems during normal and abnormal operations.

2. Identify the elements of each operator's qualifications. Review the qualification records for each operations area to ensure that final signoff is based upon satisfactory performance during the startup test program. Review applicable UORs.

3. Where operators perform multiple functions, assure their qualification to perform each function.

4. Review procedures for qualification and sign-off of new operator employees and employees transfered from one operation to another following completion of the start up test program.

Basis:

DOE 5480.20 requires that operations personnel be qualified based on their job requirements.

References:

DOE 5480.20, Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.1.4 Sub-Objective: Operations personnel including experimenters have been trained to adhere to procedures, OSRs and LCOs and to understand the importance of procedural compliance.

Criteria:

1. The training program includes training modules which emphasize procedure, OSR and LCO compliance and includes instruction in the administrative controls for making and receiving proper authorization for needed procedure changes. The instruction shall also emphasize site policies and practices for dealing with those personnel who violate procedures, OSRs and LCOs.

2. Supervisors are trained regarding policies and procedures for ensuring procedure, OSR and LCO compliance which emphasize their responsibilities in enforcing compliance.

3. Managers are trained regarding policies and procedures for ensuring procedure, OSR and LCO compliance which emphasize policy enforcement and disciplinary aspects of noncompliance.

Approach:

1. Waste handling operations will be observed to ensure that procedure compliance is routine and accepted as the way of doing business.

2. Interviews will be conducted with waste handling personnel including experimenters to determine the extent of their understanding of procedure, OSR and LCO compliance policies and the consequences of noncompliance. Review applicable UORs.

3. Interviews will be conducted with supervisors and managers to determine the extent of their understanding of procedure, OSR and LCO compliance policies. Review applicable UORs.

Basis:

Training for personnel, supervisors and managers which clearly spell out individual responsibilities regarding procedure, OSR and LCO compliance is necessary to ensure that a culture of strict adherence to waste handling procedures is established. Only through strict compliance with properly authorized policies and procedures can the health and safety be assured.

References:

ANSI 18.7

DOE 5480.20, Personnel Selection, Qualification, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.1.5 Sub-Objective: Qualification and staffing requirements have been established and met for operations personnel, experimenters, supervisors and managers.

Criteria:

1. A personnel qualification program is established which specifies the skills requirements for safe waste handling operations.

2. A program is established which ensures that minimum qualifications are specified for all entry level personnel.

3. A staffing plan is established to ensure adequate staffing is maintained in response to personnel turnover.

Approach:

1. Waste handling operations will be observed in order to determine the qualification level. Review applicable UORs.

2. Waste handling personnel, including experimenters, qualification program records will be reviewed to assess the adequacy of documentation.

3. The staffing plan will be reviewed to determine if operations personnel needs are met.

4. Staffing requirements will be assessed to determine if waste handling needs are met.

Basis:

A qualification program which specifies the skills and knowledge required to perform safe waste handling operations including experiments and ensures that proper staffing requirements are met is necessary to ensure that the operations department can properly handle waste.

References:

ANSI 18.7

DOE 5480.20, Personnel Selection, Qualification, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.1.6 Sub-Objective: The level of knowledge achieved during operator qualification is adequate to operate safely.

Criteria:

1. A personnel qualification program is established which specifies the skills requirements for safe waste handling operations.

2. A requalification program is established which ensures that waste handling knowledge and skills of all the operating personnel are maintained current.

Approach:

1. Waste handling operations will be observed in order to determine the qualification level (including skill and knowledge) of personnel. Familiarity with operating procedures will be emphasized.

2. Interviews will be conducted with waste handling personnel, including experimenters, to determine the extent of their understanding of waste handling operation.

3. Waste handling operator requalification program records will be reviewed to assess the adequacy of documentation.

Basis:

A qualification program which specifies the skills and knowledge required to perform safe waste handling operations and ensures that proper staffing requirements are met is necessary to ensure that the operations department can properly handle waste.

References:

ANSI 18.7

DOE 5480.20, Personnel Selection, Qualification, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.2 Objective: Sufficient qualified personnel are provided for operational support services, including emergency preparedness, engineering support, environmental protection, fire protection, maintenance, quality assurance, radiological protection, security, training, and worker safety and mine safety.

P.2.1 Sub-Objective: Operational support personnel have an adequate understanding of technical fundamentals.

Criteria:

1. Training and testing materials address technical fundamentals relevant to the Bin Scale Test Phase and are consistent with job responsibilities.

2. Operational support personnel have successfully completed required fundamentals training in the following areas:

3. Operational support personnel have an adequate understanding of technical fundamentals.

Approach:

1. Review training materials to assess the technical accuracy and comprehensiveness of these materials. Review testing methods and materials to verify that they adequately reflect training content and test for an understanding of technical fundamentals. Interview at least one operational support person in each area above to assess the relevance of training to their jobs and verify that training material is appropriate to the education level of support personnel.

2. Review training records of five operational support personnel to verify that required training was satisfactorily completed.

3. Interview 10 operational support personnel and evaluate the adequacy of their retained knowledge, as appropriate, in the areas of environmental protection; radiation, mine, and industrial safety; industrial hygiene; maintencance, testing and surveillance; fire protection; emergency preparedness and quality assurance.

Basis:

DOE 5480.20 requires that technical support personnel be provided fundamentals training related to the facility.

References:

DOE 5480.20, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

DOE 5480.11, Radiation Protection for Occupational Workers, June 29, 1990.

P.2.2 Sub-Objective: Operational support personnel and supervisors have been properly trained and qualified in accordance with the latest revision of approved procedures.

Criteria:

1. Training and qualifications programs are based on the latest revisions of procedures.

2. Operational support personnel and supervisors have completed training, and their qualifications in procedures they perform have been documented.

Approach:

1. Obtain a list of the most recent support activity procedures that have been approved for resumption of operations. Verify that the most recent procedural revision is being used in training and qualification programs.

2, Review training records for five support personnel and three support supervisors to verify that their training and qualification are based on the most recent procedural revision.

Basis:

DOE Order 5480.20 states that qualification programs shall be kept up to date to reflect changes in procedures.

References:

DOE 5480.20, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

P.2.3 Sub-Objective: Qualification and staffing requirements have been established and met for operational support personnel.

Criteria:

1. Formal qualification, requalification and staffing requirements have been established for operational support personnel.

2. Records exist that demonstrate that support personnel assigned to the Bin Scale Test Phase are qualified and that the minimum staffing level is met.

3. The qualification process for operational support personnel includes adequate hands-on demonstration of proficiency for procedures to be performed. Objective measures of performance are used to determine qualification.

Approach:

1. Review the documents that establish the basis and criteria for qualification, requalification and staffing requirements for adequacy.

2. Review the qualification records of 10 support personnel in different job categories and determine if they have the required signoffs to work in their assigned areas. Determine if the minimum staffing requirements have been met.

3. Review descriptions of the practical skills examination process as contained in the WIPP Training Program Manual (WP 14-1). Conduct interviews with training staff and operational support personnel to determine how qualification tests are administered. Observe the administration of three hands-on qualifications tests.

Basis:

DOE 5480.20 requires the contractor to establish selection and qualification requirements, and specify minimum educational experience levels for various job categories. Qualification criteria should be consistent with these minimum levels. Staffing levels should be consistent with WIPP Operational Safety Requirements. Further guidance as to qualification of support personnel is found in DOE 5480.5, 5480.7, 5480.11, 5480.15, and 5480.19.

References:

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986

DOE 5480.7, Fire Protection, November 16, 1987

DOE 5480.10, Contractor Industrial Hygiene Program, June 26, 1985

DOE 5480.11, Radiation Protection for Occupational Workers, June 29, 1990

DOE 5480.15, Department of Energy Laboratory Accreditation Program for Personnel Dosimetry, December 14, 1987

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, July 9, 1990

DOE 5480.20, Personnel Selection, Qualification, Training and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991

P.2.4 Sub-Objective: The level of knowledge achieved during qualification is adequate to support initiation of the Dry Bin Scale Test Program.

Criteria:

1. Training programs are established and implemented for initial and continuing training of operational support personnel.

2. Training for the Bin Scale Test Phase for operational support personnel has been completed and documented.

3. Operational support personnel demonstrate an adequate understanding of how to perform their assigned jobs safely with respect to the Bin Scale Test Phase.

Approach:

1. Compare training requirements against job responsibilities for operational support personnel. Review training course content against operational requirements to ensure that an adequate scope and level of training are provided.

2. Review records to see if appropriate support personnel are trained as required.

3. Interview 10 operational support personnel and evaluate the adequacy of their retained knowledge, as appropriate, in the areas of environmental protection; radiation, mine, and industrial safety; industrial hygiene; maintenance, testing and surveillance; fire protection; emergency preparedness and quality assurance.

Basis:

These criteria and approach ensure that the training-related qualification requirements discussed in Supporting Objective P.2.3 are implemented.

References:

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986

DOE 5480.7, Fire Protection, November 16, 1987

DOE 5480.10, Contractor Industrial Hygiene Program, June 26, 1985

DOE 5480.11, Radiation Protection for Occupational Workers, June 29, 1990

DOE 5480.15, Department of Energy Laboratory Accreditation Program for Personnel Dosimetry, December 14, 1987

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities,
July 9, 1990

DOE 5480.20, Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991

P.3 Objective: All facility personnel exhibit an appropriate awareness of safety and environmental protection requirements and, through their actions, demonstrate a commitment, ability and fitness to comply with those requirements.

P.3.1 Sub-Objective: Confirm that instructions for personnel appraisals require attention to health, safety and protection of the environment.

Criteria:

1. Confirm that instructions for personnel appraisals include requirements to evaluate attention given to health, safety and protection of the environment.

2. Confirm that instructions exist for including attention to health, safety, and protection of the environment in the managerial appraisal program.

Approach:

1. Review the Westinghouse personnel appraisal policy to confirm that supervisors and managers are required to evaluate the employee's efforts to comply with all requirements of health, safety and the protection of the environment.

2. Review at least three unidentified employee appraisals to determine that attention to health, safety and protection of the environment were included in these appraisals. Interview at least three Westinghouse employees to determine if their supervisor/manager considered the employee's respect for health, safety, or protection of the environment in their informal and formal appraisals of their performance.

Basis:

Proper respect for health, safety and protection of the environment is a primary objective of the WIPP program. Meeting this objective requires the cooperation and attention of each and every WIPP employee. The most certain way to assure this cooperation and attention is to make it an important part of each employee's performance appraisal.

References:

Doe 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86.

P.3.2 Sub-Objective: A fitness-for-duty program is in place and effectively implemented.

Criteria:

1. A clear, written policy on Fitness For Duty is available to and understood by all employees and sub-contractors. The program should assure that:

   - o Prospective employees are informed of the program.
   - o Employees are periodically retrained on fitness for duty requirements and provided information on drugs, alcohol and other fitness impacts.
   - o Personnel are encouraged and feel free to report any conditions impacting their fitness for duty or that of their co-workers.
   - o An employee assistance program is available and well publicized.
   - o Compliance with fitness for duty requirements is a condition of unescorted subcontractor facility access.

2. Managers and supervisors are trained in techniques used to identify and handle personnel suspected of being unfit for duty.

3. Senior management support for the program is evident.

Approach:

1. Review the facility Fitness For Duty program to determine that it clearly includes;

   - o Applicant screening and unescorted employee requirements
   - o Reporting requirement for conditions impacting fitness for duty
   - o Training and retraining requirements
   - o Inclusion of Sandia, and subcontractor employees

   Interview five Westinghouse/Sandia non-management, three first line management and two subcontractor personnel to determine;

   - o Knowledge of the facility Fitness For Duty program
   - o Perceived management support for the program
   - o Date of last training, the subject matter thereof, and effectiveness
   - o Knowledge of employee assistance programs
   - o Willingness to report conditions impacting the fitness of themselves and coworkers

2. Review management/supervisor training to establish that they are adequately informed in techniques used to identify and handle personnel who are potentially unfit for duty.

3. Interview the Westinghouse individual responsible for the Fitness For Duty program to determine:

   - o Extent of senior management support
   - o Scope of Employee Assistance programs
   - o Scope of Fitness For Duty training and retraining
   - o Tracking of personnel requiring training and retraining
   - o Means of publicizing the Employee Assistance program
   - o Coordination with local law enforcement agencies

Basis:

Criteria are consistent with INPO guidance concerning fitness for duty. These criteria will ensure management and public confidence
in the capability of WIPP personnel to safely perform their duties.

Reference:

INPO 86-009: Guidelines for the Organization and Administration of Nuclear Power Stations

DOE 5480.4 Environmental Protection, Safety, and Health Protection Standards, 5/16/89

P.3.3 Sub-Objective: Employees understand the importance of training in safety, health and environmental subjects and utilize the training in their daily work.

Criteria:

1. Employees are current in their health, safety and protection of the environment training and their overall attendance records have exhibited a positive attitude towards receiving this training.

2. Employees have demonstrated use of their health, safety and protection of the environment training in their day to day work activities.

Approach:

1. Review overall employee training records to establish that employees are generally current in training related to health, safety and protection of the environment. Established by interviews or additional record reviews that where employees are not current, the reasons are not the result of indifference or other attitude problems on the part of the employee or their supervisors.

2. Interview at least four employees to establish that they have obtained useful information from their health, safety and protection of the environment training, and that they can cite examples of using this training in their everyday work. During walk around observe conformance of personnel to safe-working practices and wearing of safety equipment.

Basis:

1. An integral part of obtaining an awareness of safety and environmental protection requirements is an appropriate employee training program. Such a program can only be effective if employees are willing to attend the training sessions and find the information provided directly
applicable in their daily work.

M.1 Objective: A formal and well understood program is established to develop a WIPP site-wide culture that places the highest priority on safety and protection of the environment, formality and discipline of operations, and inquisitive employee attitudes.

M.1.1 Sub-Objective: Policies, plans and procedures are established that will support the desired safety culture of placing the highest priority on safety and protection of the environment, formality of operations, and inquisitive employee attitudes.

Criteria:

1. The policies, procedures, goals and objectives of DOE-HQ, AL, WPO, and WIPP contractors consistently place the highest priority on safety, protection of the environment, and inquisitive employee attitudes.

2. Specific policies and procedures of DOE-HQ, AL, WPO, and WIPP contractors require discipline and formality of operations.

3. Expectations by senior management at DOE-HQ, AL, WPO, and WIPP contractors concerning safety and environmental protection are clearly defined, supported and communicated to their employees through intermediate management levels.

4. The goals and objectives of DOE-HQ, AL, WPO, and WIPP contractors encourage excellence in activities and include specific objectives for the continued enhancement of the safety culture.

5. Stop work authority is clearly understood by management and non-management personnel at DOE-HQ, AL, WPO, and WIPP contractors and they recognize its positive value to health, safety, and protection of the environment.

Approach:

1. Review policies of DOE-HQ, AL, WPO, and WIPP contractors for commitments to:

   - o Safety
   - o Environmental Protection
   - o Employee Openness

2. Review Conduct of Operations and Conduct of Maintenance policies and upper tier procedures to ensure requirements for discipline and formality of operations are present.

3. Interview the first two levels of senior managers of DOE-HQ, AL, WPO, and WIPP contractors to assess the means utilized to define and communicate their expectations to the WIPP Project organization.

4. Review DOE-HQ, AL, WPO, and WIPP contractors Goals and Objectives for commitment to:
   - o Excellence
   - o Enhancement of the "Safety Culture"
   - o Priority of safety goals over all other goals and objectives
   - o Consistency of the safety culture across the organizations
   - o Assignment of responsibility
   - o Assessing and improving process and effectiveness as regards safety goals.

5. Interview a minimum of five non-management and three first line management employees of DOE-HQ, AL, WPO, and WIPP contractors to determine their knowledge of:
   - o Stop work authority
   - o Management policies reviewed in Approach 1
   - o Senior management expectations

Basis:

Management policies and expectations for the organization of DOE-HQ, AL, WPO, and WIPP contractors should be clearly defined and formally documented. These policies and expectations should reflect management's commitment to safety environmental protection, and employee openness and inquisitiveness consistent with INPO guidelines.

References:

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations.

DOE 5820.2A, Radioactive Waste Management, 9/26/88.

DOE 5480.1B, Environment, Safety and Healthy Program for DOE Operations, 3/27/90.

DOE 5480.5, Safety of Nuclear Facilities, 9/23/86.

M.1.2 Sub-Objective: Facility management personnel are made aware of safety issues and occurrences at WIPP and other facilities that could affect their operation, and lessons learned are applied.

Criteria:

1. A structured program is in place to encourage employees to express safety or environmental protection concerns and this program formally tracks and responds to the concerns.

2. A structured program of operating experience review exists for levels of Westinghouse management requiring application of lessons learned from past occurrences at WIPP and other facilities safety issues.

3. Conditions potentially adverse to safety, commitments and "open items" are formally tracked to completion, status reports periodically provided to management, and resolution escalated to higher levels of management when appropriate.

4. A structured program exists for reporting and trending of facility performance.

5. Work activities are comprehensively tracked, trended and reported to management.

6. An effective Incident Reporting Program exists, including an appropriate and consistently interpreted threshold for classification of occurrences.

Approach:

1. Review the Employee Awareness Program for:

   - o Accessibility for the employees
   - o Formal tracking and resolution of employee concerns,
   - o Trending of employee concerns
   - o Closure of items with the employee

2. Review the Operating Experience Review Program for:

   - o Formal evaluation of operating experience
   - o Review of lessons learned by appropriate levels of management
   - o Tracking and closure of resultant action items

3. Review the Facility Action Tracking Systems for:

   - o Inclusion of all site action items

- o Formal closure requirements
- o Status Report distribution to responsible parties
- o Reporting of action item aging
- o Requirements for escalation of delinquency reporting to higher levels of management

4. Interview at least three management personnel to assess the use and value of the facility reporting systems. Review facility procedures to determine if a formal program exists for reporting and trending of facility performance. Review two performance reports for ease of use, clarity and scope.

5. Review procedures for reporting and trending of facility performance to determine if work backlogs are included. Review two performance reports for inclusion of backlogs.

6. Review unusual occurrence reporting procedures to ensure that unusual events are reported to and reviewed by management for safety implications. Events should be classified in accordance with DOE 5484.1 and DOE 5000.3A. Review recent reports for consistency with the reporting procedure. Review management's action on past unusual occurrence reports.

Basis:

As required by INPO guidelines (Reference 1) and DOE Orders (References 2, 3 & 4) Management is responsible to monitor and obtain feedback on the effectiveness of operations by DOE, Westinghouse, Sandia, and other contractors and subcontractors.

References:

INPO 86-009, Guidelines for the Organization and Administration of Nuclear Power Stations.

DOE 5484.1, Environmental Protection, Safety and Health Protection Information Reporting Requirements, 10/17/90.

DOE 5000.3A, Occurrence Reporting and Processing of Operations Information, 5/3/90.

DOE 5820.2A, Radioactive Waste Management, 9/26/88.

DOE 5480.1B, Environment , Safety and Health Program for DOE Operations, 3/27/90.

DOE 5480.5, Safety of Nuclear Facilities, 9/23/86.

M.1.3 Sub-Objective: The philosophy of openness on matters affecting safety, health and environment is supported by an effective public information program and line management practices.

Criteria:

1. Public information programs release information regarding safety and environmental protection on a regular basis.

2. A formal and proactive program exists to inform employees and media representatives of normal and off-normal events at the WIPP facility in a timely manner.

3. A credible public outreach program exists to encourage local citizens and other potentially affected parties to become involved in safety and environmental protection issues at an early stage.

4. Training is required for employees, providing the basis for and stressing management's commitment to safety and environmental protection.

5. Management encourages openness of all personnel in regard to health, safety and environmental matters.

Approach:

1. Review the Public Information Program to determine:

   - o Frequency of general information releases
   - o Availability of comprehensive facility background information
   - o Target audiences and objectives for the information developed for them

2. Review Public Information Program for media notification plans. Review the five most recent media releases for:

   - o Timeliness
   - o Accuracy
   - o Clarity

3. Review the Public Outreach Program to determine the adequacy of the scope and frequency of contacts with citizens and interest groups. Determine the results of efforts to date including:

   - o The number and demographics of citizens involved through the Public Outreach Program

- o Actions taken as a result of citizen input

4. Review General Employee Training for commitment to:

   - o Health and safety requirements and expectations,
   - o Environmental protection requirements and expectations,
   - o Employee openness expectations,
   - o Expressing employee concerns,
   - o Fitness For Duty requirements and expectations.

5. Interview at least five non-management employees to determine the impact of management practices and attitudes on the willingness of employees to be open in discussions of problems and inquisitive in performance of their duties.

Basis:

Management must create an atmosphere of concern for health, safety, and environmental protection within Westinghouse and its' subcontractors in order for employees, contractors, and the public to effectively foster input on current and potential problems.

M.1.4 Sub-Objective: Facility Management commitment to the safe operation of the facility is evident from personal involvement, interest and knowledge.

Criteria:

1. Westinghouse and Sandia management clearly and personally communicate expectations regarding safety and environmental protection to their employees.

2. Senior management of Westinghouse and Sandia are actively and personally involved in direction of WIPP activities including:

   - o Approving candidates for key management positions and any position having a direct impact on safety and environmental protection
   - o Approving policies applicable to WIPP
   - o Touring the facility periodically to monitor conditions and practices
   - o Directly interfacing with Independent Oversight Organizations
   - o Setting goals and objectives for the WIPP organization
   - o Periodically assessing WIPP programs important to safety
   - o Motivation of operating managers to achieve outstanding safety performance in their areas

3. A Management Observation Program has been implemented.

4. Westinghouse and Sandia management personnel at all levels routinely observe their employees working and make themselves available to hear employee concerns.

5. Westinghouse and Sandia personnel demonstrate a conservative approach to operational activities and their decisions reflect a sense of responsibility for safety and environmental protection.

6. Westinghouse and Sandia managers establish high standards of performance, and both reinforce the implementation of these standards when performance does not meet expectation, and reward the implementation when it exceeds expectation.

7. All levels of Westinghouse and Sandia management proactively support independent oversight of their areas of responsibility.

Approach:

1. Interview the senior managers of Westinghouse and Sandia to assess the means utilized to define and communicate expectations of their organization.

2. Interview the senior managers of Westinghouse and Sandia to assess their practices in:

   - o Approving candidates for management positions
   - o Approval of policies
   - o Touring the facility
   - o Interface with independent oversight organizations
   - o Setting goals for the organization
   - o Assessing functional programs and performance
   - o Providing positive reinforcement of superior health, safety, and environmental protection performance
   - o Attendance at safety meetings

3. Review the Management Observation Program and pertinent records of observations for effectiveness.

4. Interview at least three management personnel to determine their practices and perceptions in:

   - o Senior management attitudes and support for safety, health and environmental protection
   - o Observing their employees at work
   - o Participation in the Management Observation Program
   - o Attendance at safety meetings
   - o Interface with the independent oversight organizations
   - o Establishing standards for health, safety, and environmental protection
   - o Reinforcing of standards for health, safety, and environmental protection
   - o Expectations regarding a conservative approach toward operations

5. Review at least two recent incident reports and other investigations to determine if evidence exists of the lack of a conservative approach to operations and/or proceeding in the face of uncertainty.

6. Review any formal programs or policies for positive reinforcement of safety or environmental protection performance.

7. Coordinate with the review of the Independent Oversight Organization (F.4) to determine the Oversight Groups assessment of management's attitude toward independent oversight and the contractor senior manager's

participation with the Oversight Group.

Basis:

Consistent with INPO guidelines, all levels of management personnel must demonstrate by their actions that they fully support health, safety, and environmental policies and goals.

References:

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations.

DOE 5480.1B Environment, Safety, and Health Program for Department of Energy Operations, 3/27/90.

M.2 Objective: All WIPP Site functions, assignments, responsibilities and reporting relationships of individuals and organizations are clearly defined, understood and effectively implemented by line management responsible for control of safety so that there is no ambiguity, duplication or avoidance of responsibility.

M.2.1 Sub-Objective: Responsibility, authority and accountability of each line element of WIPP site line management, from the top level of management through shift supervisors, is clearly defined by policy and is evident in practice.

Criteria:

1. Policies exist defining the responsibility, authority, and accountability of each WIPP-Project management position including, WIPP management by DOE-HQ, AL, WPO, and WIPP contractors from the top level of management to the operating shift supervisors.

2. The Westinghouse line organization is established as the principal focus of Westinghouse management, of its WIPP responsibilities, the principal source of information, and the source of Westinghouse management direction.

3. Specific and sufficient responsibility, authority, and accountability have been defined by policy, for conduct of WIPP programs by DOE-HQ, AL, WPO, and WIPP contractors.

4. Functional responsibility and interfaces for the WIPP programs are clearly understood by WIPP personnel.

5. Contractor managers are prepared for their responsibilities by virtue of education, training and experience.

6. The senior executives of principal WIPP contractors have appropriate, and when necessary direct, access to executive DOE management on matters of safety and environmental protection.

7. The WIPP line organizations of DOE-HQ, AL, WPO, and WIPP contractors are unencumbered by excessive duties or significant duties unrelated to the day-to-day operation of the WIPP facility.

8. WIPP subcontractor tasks, responsibilities, authorities, and interfaces are clearly defined and understood, including accountability for subcontractor performance.

9. WIPP management personnel at all levels of DOE-HQ, AL, WPO, and WIPP management understand and are implementing their responsibilities and authorities.

Approach:

1. Review Organization Policy and resulting Position Descriptions for WIPP selected management positions at three levels of WIPP management by DOE-HQ, AL, WPO, and WIPP contractors to determine clarity of responsibility, accountability, and authority.

2. Review policies defining the programs listed in Criterion 2 to ensure that responsibility is clearly defined for line functions within the Westinghouse site organization.

3. Select at least three WIPP, DOE-HQ, AL, WPO, and WIPP programs and interview the responsible WIPP program managers to determine the adequacy of:

   - o The program manager's authority,
   - o The program manager's accountability for results,
   - o Resources
   - o The impact of collateral duties,
   - o Contractor and subcontractor interfaces,
   - o Contractor and subcontractor accountability.

4. Interview at least five non-management and three management personnel from WIPP management, DOE-HQ, AL, WPO, and to determine:

   - o Knowledge of responsibilities for the three programs reviewed,
   - o Sources of information concerning WIPP operations,
   - o Sources of direction,
   - o Impact of collateral duties,
   - o Delegation practices of the managers and their immediate superior,
   - o Clarity of responsibilities, authority and accountability of contractors and subcontractors.

5. Review the qualifications of at least six WIPP management positions, including the managers for education, training, and experience.

6. Interview the senior WIPP contractor managers to ensure adequate access to executive DOE managers for matters concerning safety and environmental protection.

7. Interview at least three WIPP contractor managers to determine whether collateral duties impact on their ability to carry out their basic job function.

8. Examine relevant procurement documents to determine whether subcontractor roles are clearly defined.

Interview at least two subcontractors to determine whether subcontractors understand their roles and what measures are employed to measure subcontractor performance.

9. From the above, assess whether WIPP contractor managers at all levels are effectively discharging their responsibilities.

Basis:

Management is responsible for the organization and coordination of work in order that responsibilities, authorities, and accountabilities are clearly understood and that responsibility for safety is prevalent throughout the organization. Documentation of the organization and coordination of the work combined with
implementation of the documented policies and procedures are equally important.

References:

Dept. of Energy Notice SEN-6D-91 Departmental Organizational and Management Arrangements, 5/16/91.

DOE memorandum dated 2/21/90 re: Clarification of the Roles of Primary WIPP Contractor Organizations.

Environmental Restoration and Waste Management Policy Statement: WIPP Operational Safety WMP-1-90, 4/19/90.

M.2.2 Sub-Objective: Effective coordination and communication exist among line organizations.

Criteria:

1. WIPP managers at DOE-HQ, AL, WPO, and WIPP contractors encourage and effectively foster teamwork and cooperation among WIPP organizations and contractors.

2. Directives and other management information flow quickly and accurately through the management chain and other formal channels of communication.

3. An adequate program exists for dissemination of general information regarding WIPP, both positive and negative, to employees.

Approach:

1. Interview at least three non-management and three management personnel to determine:

   - o Sources of information concerning WIPP operations,
   - o Delegation practices of the managers and their immediate superior,
   - o Management attitude toward cooperation and teamwork,
   - o Management practices which foster teamwork,
   - o Effectiveness of information flow through and across management.

2. Review practices for dissemination of information to employees, determining:

   - o Regularity,
   - o Timeliness,
   - o Emphasis on safety and environmental protection,
   - o Adequacy

3. Examine documents which disseminate information to employees, including routine newsletters. Determine whether this information is comprehensive, timely, credible, and adequate.

Basis:

A basic responsibility of management is to ensure that effective coordination and communication exists between and within various levels of the organization.

M.2.3 Sub-Objective: Clear written and working understandings between Westinghouse as O&M contractor and Sandia as Technical Advisor and other contractors and subcontractors are in place and are demonstratably operable. It is clear in all these understandings that Westinghouse as O&M contractor has primary responsibility and authority for health, safety, and protection of the environment.

Criteria:

1. There exists adequate and clear written understanding between DOE and WIPP contractors and between contractors regarding responsibilities for operations, operations support, health, safety and protection of the environment. Individual employees of DOE, Westinghouse, Sandia personnel, and other contractors understand and respect this agreement.

2. WPO has formally concurred in the Westinghouse-Sandia agreement. Individual WPO employees are aware of important responsibilities of each party involved in the agreements and understanding of criteria 1.

Approach:

1. Review the written understanding between DOE, Westinghouse, Sandia and other contractors which establish clear responsibilities for operations, operational support, health, safety and the environment and specifically assuring that prime responsibilities are identified. Interview at least two Westinghouse and two Sandia employees to assure their understanding of the agreement(s).

2. Review the WPO concurrence documentation for the Westinghouse-Sandia agreement(s) and similar documentation of other relevant regarding responsibilities foroperations, operational support, health, safety, and the environment to assure that these concurrences are complete and consistent with contractual language. Interview sample employees from WPO, AL, DOE headquarters, and contractors and other contractors to assure that they understand and are respecting the agreement(s) in their areas of responsibility. Review past experiences and VORs that may reflect in these responsibilities.

Basis:

DOE, Sandia, Westinghouse, and other contractors have major responsibilities at the WIPP facility. The overall organization ultimately responsible for operations, operational support,

health, safety and protection of the environment, that organization must be formally identified, and employees must recognize that responsibility.

References:

Dept. of Energy Notice SEN-6D-91, 5/16/91

M.3 Objective: The DOE WIPP Project Office (WPO) has the capability to oversee management, safety and environmental protection activities of contractor operations.

M.3.1 Sub-Objective: WPO exercises sufficient autonomy from WIPP contractor organizations to properly discharge its oversight responsibilities.

Criteria:

1. WPO management responsibilities with regard to the WIPP contractor and WIPP activities are clearly defined. The WPO is accountable to either the AL or EM in a clearly defined, and unambiguous way.

2. WPO managers have sufficient authority to carry out their assigned functions and clearly understand their authority, responsibilities, accountabilities and interfaces with WIPP activities. Authorities are commensurate with responsibilities.

3. Assigned WIPP contractor tasks, responsibilities, authorities and interfaces are clearly defined and understood.

4. WPO exercises sufficient autonomy from the WIPP contractor. A non-adversarial, mutually supportive relationship between WPO and WIPP contractors exists. WPO selectively overviews aspects of the WIPP contractor activity but is not enmeshed in minute details of specific technical or managerial areas which would relate to direct management of operations.

Approach:

1. Review written responsibilities, authorities and accountabilities of the WPO for level of completeness and clarity and the assignment of authority to carry out such responsibilities.

2. Interview at least two WPO management personnel to assess their knowledge of the WIPP contractors and of WPO responsibilities, authorities and accountabilities. Identify the following:

   - o Examples of supportive relationships,
   - o Adversarial, non-supporting relationships,
   - o Reporting structure between WIPP contractor and WPO,
   - o Physical independence (office location, shared personnel, if any) from WIPP contractor,
   - o WPO responsibilities, accountabilities, authorities and assignment of duties,
   - o Tasks being performed by WPO,
   - o How the flow of information between WPO and WIPP contractor occur,
   - o Standards and expectations of WIPP contractors by WPO,

- o Expectations of WPO by AL and EM.

3. Interview at least two WIPP contractor personnel to assess their knowledge of WPO responsibilities, authorities and accountabilities. Identify the following:

   - o Supportive relationships
   - o Adversarial, non-supportive relationships,
   - o Reporting structure between WIPP contractor and WPO,
   - o WPO level of attendance at WIPP contractor meetings,
   - o Activities that WPO is involved with and level of involvement,
   - o Authority of WIPP contractor to act without WPO approval/review,

4. Review reading files of Senior WPO managers, minutes of WIPP/WPO management meetings, and management correspondence to AL or DOE-HQ to establish that WPO is providing independent evaluation and guidance of the contractors in a non-adversarial, supportive relationship without unnecessary involvement in day to day activities.

Basis:

Criteria are consistent with INPO Guidelines utilizing WPO in the role of corporate oversight to provide an independent review of facility operators.

References:

INPO 90-020 Performance Objectives and Criteria For Corporate Evaluations.

DOE 5482.1B Environment, Safety and Health Appraisal Program, 9/23/86.

DOE 5700.6B Quality Assurance, 3/28/90.

M.3.2 Sub-Objective: WPO has sufficient numbers of skilled and trained personnel to oversee safety and environmental aspects of contractor activities at the WIPP site during the test phase of operations.

Criteria:

1. The WPO staff has sufficient manpower and resources to accomplish assigned tasks. WPO has an established policy to assure that personnel are available when necessary to perform assigned tasks and help resolve problems.

2. WPO personnel have sufficient experience, education, training, and technical/professional development to enable them to oversee the safety and environmental protection aspects of contractor activities.

3. The responsibilities, accountability and authority of each organizational position are clearly defined and understood. Interfaces with other supporting groups are understood.

4. A written overtime policy is in effect as a part of ensuring continued coverage during the test phase.

Approach:

1. Review the current written WPO organizational staffing evaluation which established staffing guidelines. Review any other staffing basis. Determine existing staffing complement including any open positions and length of
time open. Review shift/day coverage assignments for WPO personnel. Review the established method to provide 24-hour support when necessary to observe testing or resolve problems.

2. Compare a selection of at least three WPO personnel resume's and job descriptions to establish degree of correlation. Review the staff training records/plans for these individuals to ascertain the extent of upgrading of personnel qualifications to job descriptions.

   Review FSAR for qualification requirements of specific personnel, if such requirements exist.

3. Review selected WPO staff job descriptions to assure that the authority, accountability and responsibility for each position has been established. Interview at least two selected WPO staff to determine understanding

of the above. Identify the positions responsible to interface with other departments. Determine if authority and accountability for each interface position within WPO has been established and incorporated into appropriate procedures.

4. Determine by document review or interview if an overtime policy consistent with WPO's oversight requirements have been established.

Basis:

Criteria are consistent with INPO guidelines utilizing WPO in the role of corporate oversight to provide an independent review of facility operations.

References:

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluations

DOE 5482.1B Environment, Safety and Health Appraisal Program, 9/23/86

DOE 5480.1B Environment, Safety and Health Program for Department of Energy Operations, 3/27/90

DOE 5480.4 Environmental Protection, Safety and Health Protection Standards, 5/16/89

M.3.3 Sub-Objective: WPO fosters a safety culture that gives high priority to safety and protection of the environment.

Criteria:

1. Written policies provide clear direction placing the highest priorities on safety and protection of the environment. These policies have a high degree of credibility among WPO and WIPP personnel. WPO and WIPP contractor activities support these policies.

2. Managers and supervisors frequently observe plant activities to evaluate plant conditions, management effectiveness, and management interfaces with personnel.

3. A program is in place to encourage and respond to employee questions and suggestions on safety and environmental protection. Management is receptive and encourages employees to bring problems to them, and provides feedback on actions taken in response to these concerns. Incentive/recognition programs for outstanding safety performance are in place and well known.

4. WPO Management assures that safety and environmental protection concerns that are identified are brought to their attention, a cause is identified, and appropriate and timely corrective action is accomplished. Administrative controls are implemented for activities affecting safety and environmental protection.

Approach:

1. Review written WPO policies to determine if they provide clear direction placing the highest priorities on safety and environmental protection. Establish by interviews of two WIPP contractor personnel that these policies have been distributed, received and understood by personnel in appropriate disciplines and job classifications.

2. Establish by interviews of two WPO management and two WIPP contractor personnel that WPO management frequently observes plant activities to appraise plant conditions. Compare any WPO policies/programs on plant observation requirements to actual practice as determined by these interviews.

3. Review procedures and notices encouraging and informing WPO employees of their responsibility to question or suggest improvements to safety or environmental

programs. Evaluate formal programs and interview at least two WPO individuals regarding their knowledge of such programs.

4. Review the WPO process for reporting, tracking, identifying cause and taking appropriate and timely corrective action for those discrepancies identified as a result of WPO oversight activities. Review the list of open items and their closure dates to establish that the program has been properly implemented. Determine if a management escalation process is in effect to raise issues that are not receiving timely attention.

Basis:

Criteria are consistent with INPO guidelines utilizing WPO in the role of corporate oversight to provide an independent review of facility operations.

References:

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluations

INPO 90-15 Performance Objectives and Criteria for Operating and Near-Term Operating License Plants

DOE 5480.1B Environment, Safety and Health Program for Department of Energy Operation, 3/27/90

DOE 5480.4 Environmental Protection, Safety and Health Protection Standards, 5/16/89

M.3.4 Sub-Objective: WPO has sufficient trained and skilled personnel to properly manage the WIPP transportation program.

Criteria:

1. Personnel have packaging and/or transportation experience necessary and sufficient to properly manage the WIPP transportation program.

2. Personnel have obtained packaging and transportation training necessary and sufficient to properly manage the WIPP transportation program.

3. The transportation management plan provides a clear line of authority and responsibility to provide sufficient management control and oversight of contractor administrative and operational activities.

4. Determine the line of authority and responsibility for management control and oversight of the subcontractor, Dawn Trucking.

Approach:

1. Interview the WPO transportation manager and two staff members to determine levels of experience.

2. Interview two WPO transportation staff members to determine extent of initial training and adequacy of recurring training. Determine that training is ongoing and is sufficient to maintain personnel current level of knowledge.

3. Review the transportation management plan for clarity and completeness. Review selected records to determine that DOE has sufficient management control over the transportation contractor.

4. Interview WPO transportation manager and two staff personnel, and review applicable documentation to determine that the line of authority and responsibility has been established where authority and responsibility has been delegated to WID personnel, interview responsible WID personnel and review applicable WID records.

Basis:

Effective management of the transportation program is essential to ensure safe transportation of TRU waste to the WIPP site. WPO must exercise proper managerial controls of the trucking contractor or have properly delegated suitable responsibility to WID.

References:

Doe 1540.2 Hazardous Material Packaging for Transportation - Administrative Procedures, 12/19/88.

DOE 5480.1B Environment, Safety and Health Program for DOE Operations, 3/27/90.

DOE 5700.6B, Quality Assurance, 3/28/90.

DOE 5820.2A, Radioactive Waste Management, 9/26/88.

DOE 5480.3 Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances and Hazardous Wastes, 7/9/85.

DOE 5482.1B Environment, Safety and Health Appraisal Program, 9/23/86

49 CFR 100 - 177

49 CFR 390 - 397

10 CFR 71

M.4 Objective: The Albuquerque Operations Office (AL) has the capability to adequately support WPO in its responsibilities to oversee health, safety and environmental protection.

M.4.1 Sub-Objective: AL has sufficient number of skilled and trained personnel to support the WPO, both on a routine basis and during periods of unusual or off-normal operations.

Criteria:

1. The responsibilities, accountability and authority of each AL organizational position related to operations, support, health, safety, and environment at WIPP are clearly defined and understood. The WPO is accountable to the AL in a clearly defined, and unambiguous manner. The AL is accountable to the DOE in a similarly defined manner.

2. The AL staff has sufficient manpower and resources to accomplish assigned tasks. AL personnel are available when necessary to perform assigned tasks on a routine basis and during periods of unusual or off-normal operations.

3. AL personnel assigned to the WIPP Project have sufficient experience, education, training and technical/professional development and sufficient understanding of their responsibilities, to enable them to carry out their WIPP responsibilities as needed in routine as well as off-normal operations.

Approach:

1. Obtain and review the written responsibilities, accountabilities and authority of the Albuquerque Operations Office (AL) regarding the WIPP Project. Determine if responsibilities and accountabilities and authorities of the WPO to AL and of AL to DOE headquarters are clearly and unambiguously established.

2. Identify positions, names and number of personnel and percentage of time spent by AL personnel assigned to the WIPP Project. Interview at least two AL and two WPO personnel to establish the extent and sufficiency of AL's involvement in the WIPP Project including extent of AL reviews of WIPP operations. Interview selected WPO personnel to determine their understanding of responsibilities of AL and if adequate communication channels exist. Perform similar interviews with selected personnel from DOE headquarters. Review samples of AL actions in implementing its responsibilities for operations, support, health, safety, and environment of WIPP, including its review of WIPP UORs.

3. Review a selection of AL support personnel

qualifications, training records and determine the degree of completion. Review the overall AL staffing complement and not any vacancies and their duration to determine the AL ability to obtain and retain sufficient staff.

Basis:

It is industry practice for project functions to be adequately staffed with well defined roles and lines of communication established. The referenced DOE notice outlines general guidance for DOE Field Office responsibilities concerning of Program Offices under its direction.

Reference:

INPO 90-015 Performance Objectives and Criteria for Nuclear Power Plant Evaluation (OA.1)

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluation (1.1.A)

Department of Energy Notice SEN-6D-91, dated 5/16/91

DOE 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86

M.4.2 Sub-Objective: The AL management has demonstrated a commitment to support WPO through their actions and specific written directives.

Criteria:

1. AL management standards, expectations and priorities for WIPP are effectively communicated to WPO and WIPP management and staff.

2. AL policies/directives reflect AL's active and competent implementation of AL's WIPP responsibilities and have a high degree of credibility and acceptance among WPO and WIPP personnel. WPO and WIPP experience and activities reflect adequate implementation by AL of its responsibilities.

Approach:

1. Interview AL senior management to determine the extent of existing AL written management directives to assure standards, expectations, and priorities for WIPP have been clearly established. Also, determine the methods of communicating the AL standards to the WPO and WIPP contractor management. Interview at least two WPO and two WIPP contractor management personnel to determine whether these standards have been effectively communicated and the extent of their knowledge of these standards.

   - o Review AL directives regarding effective communications to WIPP.
   - o Identify AL management responsible for the development of standards, expectations, and priorities and the process to be used.
   - o Evaluate communication flow throughout AL.

2. Review AL written directives to determine if strong support of WPO and WIPP is documented. Determine if these documents identify those AL individuals responsible for ensuring that sufficient AL direction and support is provided to WPO. Interview WPO and WIPP management to determine the extent of AL support of WIPP. Review AL's involvement in reviewing and responding to WIPP UORs.

Basis:

It is industry practice for management functions to be well defined and adequately staffed, to have clear lines of communication established, and to be effectively implemented.

References:

INPO 90-015 - Performance Objectives and Criteria for Nuclear Plant Evaluation (OA.1)

INPO 90-020 - Performance Objectives and Criteria for Corporate Evaluation (1.2.A)

M.4.3 Sub-Objective: Clear agreements are in place and operating properly to assure that AL can obtain and provide adequate financial and program management and support for the WIPP responsibilities to oversee health, safety and protection of the environment.

Criteria:

1. A process exists for obtaining and providing adequate resources and is understood, adhered to, and effectively implemented by AL personnel.

2. Expenditure authorization is completed prior to the expenditure of funds.

3. AL management policy requires timely and prudent administration, thorough justification and proper control of the expenditure of funds.

Approach:

1. Determine by interview of at least two selected AL management personnel the existing process for resource allocation, and the extent of understanding, adherence and adequacy of this process. Review AL procedures which establish and communicate this resource allocation process.

2. Review monthly budget expenditure reports provided to AL to determine if funds exist for current expenditures signifying that the budget process is under management control. Review records of dates of budget authorization by AL and compare with records of WIPP expenditures. Determine root causes of delayed authorizations.

3. Determine by interview that AL management has set standards/policy to prudently administer, thoroughly justify and properly control the approval and expenditures of funds. Determine whether AL management believes that DOE-HQ is assuring adequate funding to enable WIPP to operate safely without adverse environmental impact. Evaluate ALs effectiveness in planning of resource needs and obtaining resource commitments from DOE-HQ.

Basis:

It is industry practice to establish a comprehensive, effective, and timely budgeting process, including appropriate levels of review to assure safety and environmental protection are not compromised.

References:

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluation (1.1.A)

DOE 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86

M.5 Objective: A clearly defined, traceable and functioning organizational chain of command exists from the responsible DOE headquarters program organization to AL and WPO to assure that all involved individuals and organizations know and discharge their responsibilities for health, safety and environmental protection.

M.5.1 Sub-Objective: The DOE headquarters responsibilities for WIPP activities, including packaging of waste, transportation and operation of the WIPP facility, are clearly assigned.

Criteria:

1. DOE Headquarters (DOE-HQ) organizations have clearly identified responsibilities and accountabilities for waste packaging, transportation and WIPP facility operations. These responsibilities and accountabilities are known and understood by the DOE-HQ WIPP staff, by AL WIPP staff, and by WPO.

2. The DOE-HQ WIPP staff are adequate in number, competence, and training to carry out those assignments.

Approach:

1. Review written EM, DP, NS, and EH policies and directives which identify WIPP program responsibilities and authorities to establish that:
   - o Responsibilities are clearly defined
   - o Accountabilities are clearly defined
   - o Access to senior DOE management is clearly defined.

   Determine that this documentation is current to reflect the proposed bin scale test phase of operations.

2. By interviews and review of policies and procedures determine if procedures for resolving inter-organization conflicts of understanding.

Basis:

Approach is extracted from INPO guidance concerning organization and administration. These criteria will ensure adequate definition of responsibility between various principle DOE offices, field offices, and operating contractors.

References:

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations

M.5.2 Sub-Objective: The point at which responsibility for waste streams at the generator locations is transferred to WIPP managers is clearly identified.

Criteria:

1. The point of responsibility transfer and transfer responsibilities and interfaces should be clearly defined in WPO and Westinghouse documents and in documents involving other relevant contractors, and personnel and management responsible for waste handling should clearly understand the point of transfer.

Approach:

1. Review the contracts and other relevant agreements and documentation with Westinghouse and other contractors and with responsible waste generators to ensure that the point of transfer is clearly and consistently defined. Review DOE, AL and WIPP policies and procedures to determine that a clear and consistent point of transfer exists. Interview the WIPP Waste Handling Manager and at least two waste handling operators, and selected waste generators to determine their understanding of the point of transfer.

Basis:

Criteria are consistent with INPO guidelines to assure the effectiveness of management. Criteria are based on DOE Order 5480.19 Chapter 1 requirements for a clear definition of operations responsibilities and INPO guidelines requiring clearly defined interfaces with outside organizations.

References:

DOE 5480.19 Conduct of Operations Requirements for DOE facilities.

INPO 86-009 Guidelines for the organization and administration of nuclear power stations.

DOE 5820.2A Radioactive Waste Management, 9/26/88.

M.5.3 Sub-Objective: The headquarters responsibilities are properly discharged.

Criteria:

1. EM individuals designated responsibility for directing WIPP Program activities are familiar with their responsibilities and have demonstrated by their involvement proper discharging of their duties.

2. Responsible DOE field and contract managers are familiar with their EM counterparts and recognize and acknowledge their managerial positions.

3. Formal mechanisms exist to ensure that the various organizations with responsibility for WIPP properly communicate and coordinate their activities. Evidence exists that these communication mechanisms are being used effectively, and that coordination is effective.

Approach:

1. Interview at least four DOE-HQ employees responsible for the WIPP program (EM-30), including senior line management, to establish the extent of their direct knowledge, and involvement in the existing WIPP, WPO, and AL status, problems, and accomplishments.

2. Interview at least two each of Westinghouse, WPO and AL line managers to establish their familiarity with the DOE-HQ counterpart's involvement in and direct knowledge of WIPP activities.

3. Review DOE-HQ formal mechanisms for interfacing between various organizations with programmatic (EM, DP) or oversight responsibilities (NS, EH) for WIPP to establish that these mechanisms are clear and inclusive. Interview at least one senior DOE-HQ official from each of these organizations to establish that they are familiar with these formal interfacing mechanisms,that the interfaces are adequate in practice, and that programmatic and oversight responsibility are discharged with competence and timeliness.

Basis:

Criteria are consistent with INPO guidelines to assure the effective management and coordination between DOE-HQ organizations. These organizations include EM, the program manager; DP, the primary user; and NS and EH, the DOE oversight organization.

References:

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations

INPO 90-020 Performance Objectives and Criteria for Corporate Evaluation

DOE 5820.2A, Radioactive Waste Management, 9/26/88

M.6 Objective: Adequate oversight and DOE internal oversight of WIPP program activities is provided.

M.6.1 Sub-Objective: Department of Energy independent oversight organizations have performed recent audits of the WIPP facility and operations and their recommendations and findings have been adequately accommodated.

Criteria:

1. The DOE oversight organizations have clearly defined and understood responsibilities for WIPP oversight and have discharged their responsibilities for performing health, safety, and protection-of-the-environment audits of the WIPP facility consistent with their organizational responsibilities.

2. DOE-HQ, AL, WPO and Westinghouse have established an adequate and effective system to assure that all DOE oversight and audit findings are properly considered, accommodated, responded to, and closed out in a timely manner. There are no existing unresolved DOE audit findings which would prevent start of the bin scale test phase of operations at WIPP.

Approach:

1. Compare recent audits of the WIPP facility by WPO, AL, NS-HQ, EH-HQ, and EM-HQ with their organizational responsibilities for performing such audits. Evaluate the timeliness of audits and audit reports. Assure that written reports of these audits, with clear statements of findings or recommendations have been made available to DOE management, Westinghouse, and other appropriate WIPP contractors.

2. Review the oversight audit tracking system of criteria 2 to assure that each external DOE oversight audit finding is properly identified, assigned, evaluated, and closed out in a timely manner. Trace at least two audit findings through the audit-response system to assure that adequate and timely analysis and review, including management review, of these findings were made. Establish by review of the audit tracking system that no audit finding necessary to be resolved prior to start of bin scale testing remains outstanding.

Basis:

The DOE has overall responsibility for assuring that their facilities, including WIPP, are operated with proper regard for health, safety, and protection of the environment. A substantial portion of this responsibility for WIPP is discharged through formal audits, either overall or focused in specific disciplines of DOE's WIPP management and its WIPP contractors. It is

imperative to establish that these audits have been conducted, that DOE's WIPP management and its WIPP contractors have received and acted upon the findings, and that DOE is satisfied with these actions.

References:

(See Health & Safety Proclamation)

M.6.2 Sub-Objective: The DOE-funded independent oversight group, the New Mexico Environmental Evaluation Group (EEG), has developed a clearly defined charter and internal oversight procedures consistent with that charter, has demonstrated its independence from DOE and other outside influences, has performed timely evaluations of the WIPP facility and operations, and EEG's recommendations and findings have been properly reported to and adequately accommodated by the WIPP project.

Criteria:

1. The EEG has a clearly defined charter and related internal procedures to define its operations, internal review procedures, and criteria for dissemination of their findings.

2. The EEG has demonstrated by the scope of its reviews and recommendations and its compliance with its charter and internal procedures regarding independence and distribution of its findings that it is independent of any DOE or other outside influences.

3. The EEG has performed recent evaluations of the WIPP facility and it recommendations and findings have been carefully considered and appropriately accommodated.

Approach:

1. Review the EEG charter and internal procedures to confirm that there are clear instructions to all EEG members for defining their methods of operations, their requirements for internal validation of proposed findings, and the criteria for releasing these proposed findings to outside organizations, including DOE or WIPP.

2. Interview at least three members of the EEG technical staff, including the Director and/or Deputy Director, to determine if they believe they are under any outside pressures, from DOE or others, to limit or modify the scope of their reviews or the extent of their recommendations or findings. Also establish by interview and document review that EEG has followed its internal procedures and has demonstrated independence, objectivity, and timeliness in its reviews and in the distribution of its recommendations and findings.

3. Evaluate recent EEG correspondence and interactions with DOE and WIPP facility personnel to assure that EEG has conducted recent assessments of WIPP operations with full access to necessary information relating to WIPP and that EEG's recommendations and findings have

been adequately evaluated and accommodated prior to the start of the bin scale test operations.

Basis:

The EEG has been established and funded by agreement between DOE and the State of New Mexico to provide the State independent oversight of the WIPP program. In order to perform this function there must have a clearly defined charter and internal procedures to implement this charter. EEG must also have full access to the facility, its programs, and its people. EEG must be free of outside influences, for or against any aspect of the WIPP program, and its advice and recommendations to DOE and the WIPP contractors must be carefully considered and accommodated as appropriate.

References:

Appendix B, Working Agreement for Consultation and Cooperation to Agreement for Consultation and Cooperation Between Department of Energy and State of New Mexico on the Waste Isolation Pilot Plant, updated April 18, 1988.

F.1 Objective: There are established organizations that are adequately staffed and trained and with the appropriate organizational structure, procedures and equipment to support facility operation.

F.1.1 Sub-Objective: There is an adequate emergency preparedness organization and program.

Criteria:

1. Organization and administration of the emergency preparedness and response functions ensure effective planning, implementation and control during emergencies.

2. An approved emergency plan and supporting documents exist and have been tested to ensure effective emergency preparedness and response. The emergency plan incorporates required emergency preparedness program features as specified by current DOE Orders.

3. Emergency response training develops and improves the knowledge and skills of all personnel to effectively respond to and mitigate emergencies.

4. Facilities, equipment, personnel and other resources are in place and adequate to support emergency response operations.

5. Provisions and procedures are in place to support correct classification of emergencies, assessment of consequences, notification of emergency response personnel, and to recommend appropriate protective actions.

6. Emergency provisions and procedures are in place to ensure protection of all personnel in an emergency, including minimization and control of exposure to hazards, and assurances of adequate fire, rescue and medical support.

7. Emergency drills and exercises are conducted prior to start-up and at least annually thereafter to test and verify the adequacy of the emergency plan.

8. A hazards assessment is prepared, documented and maintained which considers the broad range of emergency events that could affect the WIPP program.

Approach:

1. Interview individuals responsible for and with authority over all aspects of development, maintenance and implementation of the emergency preparedness program; review the Emergency Plan; review administrative procedures for emergency preparedness; review program plans for training and qualification of

emergency response personnel; review agreements with offsite organizations for emergency support and response. Ensure that the emergency preparedness program includes the necessary elements of staffing, management support, resources, training, planning and offsite interface, to cope with emergencies. Ensure that an Emergency Readiness Assurance Program is developed in compliance with DOE Orders.

Review the emergency response organization roster. Compare the positions with the day-to-day positions of personnel assigned to emergency response teams. Ensure that the emergency response organization includes personnel experienced in each area required to support emergency response, and that qualified primary and backup response personnel are assigned for each position.

2. Review the Emergency Plan and supporting documents and compare them against the requirements of DOE Order 5500.3A. Ensure that the program documents incorporate features specified by current DOE Orders.

3. Review the training materials for on-site responders to assess technical accuracy and comprehensiveness of these materials. Review the testing methods to verify that they adequately sample training content and ensure an understanding of appropriate procedures, equipment, interfaces, and responsibilities associated with emergency response. Review the emergency preparedness training records of persons in ten emergency response positions to verify that required training was satisfactorily completed. Interview at least ten emergency response organization positions to verify that they have an adequate understanding of position duties and responsibilities.

4. Review the Emergency Plan for commitment and definition of facilities, equipment and resources for emergency response. Conduct walkthru of emergency response facilities and observe equipment, documents, and displays to verify implementation of the Emergency Plan. Conduct a site walkthru to observe provisions for medical, fire, hazmat, radiological response and monitoring equipment. Review surveillance procedures for emergency response equipment and facilities to ensure their continued maintenance. Observe communications capabilities and networks utilized for emergency response, to confirm their operability. Observe utilization of emergency response equipment and resources in an emergency drill to confirm operability and ability of personnel to utilize equipment and

resources.

5. Review assessment, classification, notification and protective action procedures to ensure that adequate guidance is available to support personnel response to emergencies. Observe a demonstration of meteorological monitoring and dose assessment systems to verify these compatabilities. Conduct a facility walkthru to observe implementation of emergency monitoring and emergency alarm systems. Observe testing of onsite notification systems to verify operability and adequacy. Interview personnel responsible for classification of emergencies to determine if the classification scheme is consistent with operating procedures and technical specifications.

6. Observe emergency facilities and equipment for respiratory protection, personnel protection, decontamination, and personnel/habitability monitoring to verify implementation of emergency plan commitments.

   Review procedures and emergency drill reports to verify abilities to perform accountability of all personnel and to verify appropriate training and response of non-emergency personnel towards emergencies.

   Perform walkdown of facilities and equipment review procedures and interview appropriate onsite and offsite personnel to verify that provisions are adequate and in place for transportation and treatment of contaminated/injured personnel, fire/rescue support, and protection of security personnel during emergencies.

7. Observe drills conducted during the ORR period; review emergency drill/exercise scenarios and critique reports; and conduct interviews with a cross section of onsite and offsite emergency response personnel to verify that drills/exercises are adequately planned, controlled and critiqued, and that they demonstrate abilities to carry out key response functions in support of a WIPP emergency.

8. Review the FSAR Accident Analysis Section and other hazards assessment documents for the WIPP program to ensure that comprehensive hazard assessment has been conducted and that the emergency plan is responsive to the full spectrum of accidents.

Basis:

An effective emergency planning preparedness, and response

program and organization are necessary to help ensure the safety and health of workers, the public and property and the environment in the event of an emergency involving DOE operations. Emergency management programs should be in place to enable organizations to respond to an emergency in a timely, efficient, and effective manner, resulting in improved mitigation of consequences and recovery. The basis for these programs should be hazard assessments specific to the DOE operations and assessment of potential consequences of accidents or events.

References:

DOE 5500.3A Planning and Preparedness for Operational Emergencies, 4/30/91.

DOE 5500.1B Emergency Management System, 4/30/91.

DOE 5500.2B Emergency Categories, Classes, and Notification and Reporting Requirements, 4/30/91.

DOE 5500.10 Emergency Readiness Assurance Program, 4/30/91.

DOE 5500.4 Public Affaira Policy and Planning Requirements for Emergencies, 8/13/81.

29 CFR 1910.120 OSHA Final Standard for Hazardous Waste Operations and Emergency Response.

F.1.2 Sub-Objective: There is an adequate engineering support organization and program.

Criteria:

1. The organizational structure is clearly defined and staffing and resources are sufficient to accomplish tasks assigned to the organizational elements.

2. Responsibilities, authority, and interfaces for each organizational position are clearly defined and understood.

3. Goals, objectives, and standards for performance of engineering support activities are adequately established, communicated, and reinforced.

4. Procedures and controls that assure safe and reliable WIPP operations are adequately employed in the conduct of engineering activities .

5. The effectiveness and level of expertise of engineering support are periodically and adequately assessed.

6. Actions and controls within engineering support demonstrate an adequately conservative approach toward activities being undertaken at WIPP.

Approach:

1. Obtain organization charts and associated WIPP documents and procedures which establish and define the scope of responsibilities for the engineering support organizational elements, including interfaces with contractors. Confirm that the organization is well defined and, from resume reviews and interviews, that the required disciplines are adequately represented by competent personnel. Confirm that the staff is assigned consistent with efficiently executing the scope of responsibilities.

2. Obtain and review applicable WIPP policies and procedures to establish that there are clearly defined engineering support management authorities, responsibilities, and interfaces both within engineering organization and with other WIPP organizations.

3. Obtain programs, procedures, etc. utilized by engineering support management to communicate their expectations for performance. Verify that such procedures/programs exist and that tangible evidence is available to demonstrate that management's expectations

for excellence in engineering products are understood by personnel. Interview four engineering support management and staff personnel to assist in the confirmation process.

4. Obtain and review the body of procedures which control the flow of work into, among, and out of the engineering support organization. Confirm that appropriate checks and balances exist which would preclude or mitigate the propagation of errors in design. Interview four engineering support personnel to confirm their understanding of governing and applicable programs, processes, and procedures.

5. Determine the number of quality assurance, quality control audits conducted of engineering support. Evaluate the principal results of these audits. Through discussions with at least 5 maintenance and operating personnel and management, develop an understanding of the adequacy of engineering, as viewed by operations and maintenance with three design changes. Determine backlog of design-change work orders and the time to complete work orders. Determine if responsibility for completing work orders is clearly defined.

6. Interview 5 personnel within engineering support (a mix of management and staff). Through the interview process discern whether or not the responses to questions discussed during the interview are indicative of a conservative approach to WIPP operations and design. Search for recent instances where engineering support was requested by operations/maintenance. Evaluate how engineering support responded.

Basis:

It is industry practice to establish an engineering support organization which clearly defines its management's authority, responsibility, and accountability and which serves to provide the technical expertise necessary to support the needs of operations, maintenance, and WIPP management personnel.

References:

INPO 90-015, Performance Objectives and Criteria for Operating and Near-Term Operating License Plants, August 1990.

DOE 5480.20, Personnel Selection, Qualification, and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991

F.1.3 Sub-Objective: There is an adequate environmental protection organization and program, to include Air Quality, Surface Water, Groundwater, Solid and Hazardous Waste, Hazardous Material Handling, Environmental Monitoring, Hazardous Substance Release Reporting, and Environmental Protection Quality Assurance.

1. Environmental protection activities are conducted in accordance with formal well-defined, and documented programs, with clear responsibilities in the part of DOE-WIPP management and its contractors, supported by environmental protection staffs that are adequately trained and competent to effectively carry out the program.

2. A program is in effect for DOE-WIPP management and its contractors to monitor gases or air streams exhausted or vented to the atmosphere from any site, facility, or process for significant pollutants of hazardous substances, including both radioactive and nonradioactive materials.

3. DOE-WIPP management and its contractors have effective programs designed to prevent or minimize damage to the surface water or drinking water quality.

4. A groundwater protection management program, based on a formalized plan, is in place and is effective and responsibilities are assigned for the groundwater monitoring program and any hydrogeologic characterization studies.

5. A program is in place for DOE-WIPP management and its contractors to ensure that the physical, chemical, and radiological characteristics of all hazardous wastes generated at the facility are adequately characterized, and that wastes are safely accumulated, stored (less than 90-days) and transferred off-site for disposal.

6. A program is in effect for DOE-WIPP management and its contractors to manage the procurement, handling and storage of toxic and chemical materials, including pesticides, herbicides, PCBs, and petroleum and petroleum products.

7. A radiological environmental monitoring program is in place for DOE-WIPP management and its contractors to provide accurate and adequate surveillance of the radiological effects of facility operations on the environment.

8. A program is in place for DOE-WIPP management and its

contractors to plan and effectively implement all actions required to manage responses to and reporting of releases of hazardous substances to the environment.

9. An effective environmental quality assurance (QA) program and an adequate QA organization are in effect.

Criteria:

1. Environmental protection programs are defined in formal policies, standards, and procedures.

2. A plan for monitoring air-effluent sources that addresses the elements listed in DOE Order 5400.1, Chapter IV, Section 4 has been formalized in a document and has received appropriate review and approval.

3. Required programs for protection of the surface water have been developed following guidelines established in the applicable regulations or local rules.

4. There is a plan that describes a Program to develop, all the elements specified in DOE Order 5400.1, Chapter III, Section 4.a, that comprise a Groundwater Protection Management Program.

5. There is a formal, facility-wide waste program in place for all site generators of hazardous and mixed wastes that describes procedures and roles and responsibilities for identifying, characterizing and managing all solid, hazardous, and mixed waste streams.

6. There is a formal waste minimization program and plan.

7. There is a formal program that defines the use of toxic and chemical materials on the site.

8. Inventory control procedures are in place for monitoring and limiting the type and quantity of toxic and chemical materials purchased.

9. Procedures are established and implemented to prevent the release of toxic and chemical materials to the environment.

10. The Hazardous Waste program is formalized through a set of controlled procedures and related documents.

11. Environmental studies and pre-operational surveillance required to be conducted prior to start up have been completed.

12. There are site-specific response action plans or equivalent documents that outline the nature and scope of the response action program and outlines specific responsibilities for and procedures to assess all releases potentially subject to reporting and notification requirements.

13. The environmental QA program is formalized in a controlled set of documents such as quality assurance manuals, quality assurance plans, and implementing procedures.

Approach:

1. Review the program documentation. Review programs conducted by environmental management for completeness and adequacy. Interview staff from the responsible organizations and check training records to assure they are capable of conducting the program. Interview managers responsible for environmental protection to assess their understanding of their responsibilities and to assure they have sufficient authority to successfully carry out the environmental protection program.

2. Review the Environmental Protection program to ensure there is an adequate system to verify that procedures for any activities that might impact the environment from normal operations and off-normal events is in place and operating.

3. Review documentation and interview staff to ensure that procedures address all activities necessary to implement environmental policies, that they are technically correct and current, and have a level of detail appropriate for the activities to which they apply.

4. Review the air quality program to ensure that a plan for monitoring air-effluent sources that addresses the elements listed in DOE Order 5400.1, Chapter IV, Section 4 has been formalized in a document and has received appropriate review and approval.

5. Review Air Quality documentation to ensure the air quality plan has identified all potential emission sources and has defined all those that require effluent monitoring/sampling, and has documented the basis for not monitoring/sampling specific sources.

6. Review detailed operating procedures for monitoring/sampling equipment and laboratory analyses

to assure that they are appropriate for the pollutant being monitored and have been developed, reviewed, and bear appropriate approval signatures.

7. Ensure SPCC plans are reviewed on a regular basis. Plans must be reviewed and recertified at least every three years, but should be reviewed and amended at any time when substantive changes may occur. SPCC and BMP plans contain specific spill reporting instructions as required by the applicable regulation.

8. Review spill plans that involve emergency responses and notification, to make certain that up-to-date contact names and telephone numbers are provided at all times.

9. Review all elements of the Groundwater Protection Management Program to ensure they have been identified, and responsibilities for each element have been defined by division, department, or individual position.

10. Review documents, such as hydrogeological characterization studies, sampling plans, analytical methods, quality assurance documents, and standard operating procedures to ensure they have been referenced, the existing well network has been described, and details of construction and abandonment are referenced.

11. Review documentation, make field observations and interview staff to ensure there is a formal, facility-wide waste program in place for all site generators that describes procedures and roles and responsibilities for identifying, characterizing and managing all solid, hazardous, and mixed waste streams.

12. Review documentation and make field observations and interview staff to ensure there is a formal waste minimization program and plan.

13. Review documentation, interview staff and make field observations to ensure that inventory control procedures are in place for monitoring and limiting the type and quantity of toxic and chemical materials purchased and procedures are established and implemented to prevent the release of toxic and chemical materials to the environment.

14. Review documentation, make field observations and interview staff to ensure the radiological monitoring program is well documented and includes rationale and design criteria, extent and frequency of monitoring and measurements, and quality assurance programs.

15. Review documentation, interview staff and make field observations to ensure site-specific response action plans or other equivalent documents that outline the nature and scope of the response action program and that it outlines specific responsibilities for and procedures to assess all releases potentially subject to reporting and notification requirements including annual release reports.

16. Review documentation, interview staff and make field observations to ensure the environmental QA program is formalized in a controlled set of documents such as quality assurance manuals, quality assurance plans, and implementing procedures. This includes document control, computer software, vendor facilities for waste disposal and contract laboratories.

17. Review UORs to determine possible deficiencies in the environmental protection program.

18. Review the off-gas monitoring system for bin-test experiments to determine its adequacy and reliability in normal and off-normal operations.

19. Identify critical potential sources for environmental release and review plans, procedures, and systems to control these releases.

Basis:

DOE 5400.1 requires the preparation of an environmental management program which should include all procedures necessary to establish and implement an effective environmental program.

DOE 5400.1, General Environmental Protection Program, Chapter IV, contains requirements and guidance for environmental monitoring programs concerned with measuring and monitoring effluent from DOE Operations. Performance tests and monitoring are required for specified pollutants and sources that are regulated under 40 CFR 60, Standards of Performance for New Stationary Sources and under 40 CFR 61, National Emission Standards for Hazardous Air Pollutants.

Regulations promulgated by 40 CFR 112 require that surface water receptors be protected from release of oils by implementation of aggressive Spill Prevention, Control, and Countermeasures (SPCC) plans addressing each potential source. DOE Order 5400.1, General Environmental Protection Program, provides for establishment of an environmental protection program that assures compliance with applicable Federal, State, and local environmental protection laws and regulations.

DOE 5400.1, General Environmental Protection Program, Chapter III, Section 4.a, requires that a specific program plan, the Groundwater Protection Management Program Plan, be in place by May 9, 1990. This plan must be reviewed annually and updated every three years.

Regulations promulgated under the Resource Conservation and Recovery Act require solid, hazardous, and mixed waste be characterized and managed in a manner to ensure the safe accumulation, storage, treatment and/or disposal of such wastes.

The Toxic Substance Control Act (TSCA) regulations govern the manufacture, use, handling, storage and disposal of PCBs.

The Federal Insecticide, Fungicide, and Rodenticide (FIFRA) Act regulates the registration, application, certification, storage labeling and disposal of pesticides.

DOE 5400.1, General Environmental Protection Program, Attachment I-1, Mandatory Environmental Protection Standards, states "To the extent legally applicable to a particular activity, standards contained in the following legislation, regulations, and Executive Orders are mandatory for DOE Operations." Regulations applicable to petroleum and petroleum product include the Clean Water Act as amended.

The National Oil and Hazardous Substance Pollution Contingency Plan requires reporting, containment, countermeasures, cleanup, and disposal of spills.

DOE 5400.4 outlines the roles and responsibilities for implementing the requirements of CERCLA and SARA.

DOE 5500.2A requires immediate notification to DOE Headquarters Emergency Operations Center and the National Response Center as soon as possible (always within 24 hours) after discovery of a hazardous material spill or release to the environment (in excess of reportable quantities) as a result of DOE operations.

DOE 5400.1, General Environmental Protection Program, Chapter IV, Section 10, requires that a quality assurance program, consistent with DOE 5700.6B, be established which describes key elements that must be included in a quality assurance program.

References:

DOE 5000.3A, Occurrence Reporting and Processing of Operations Information, 5/3/90.

DOE 5400.1, General Environmental Protection Program, 6/29/90.

DOE 5400.3

DOE 5400.4

DOE 5400.5, Radiation Protection of the Public and the Environment, 6/05/90.

DOE 5500.3A, Planning and Preparedness for Operational Emergencies, 4/30/91.

DOE 5700.6B, Quality Assurance, 3/28/90.

DOE 5820.2A, Radioactive Waste Management, 9/26/88.

DOE 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes, 7/9/85.

DOE 5484.1, Environmental Protection, Safety and Health Protection Information Reporting Requirements, 10/17/90.

DOE 5500.2B, Emergency Categories, Classes, Notification and Reporting Requirements, 4/30/91.

DOE 5482.1B, Environment Safety and Health Appraisal Program, 9/23/86.

40 CFR 61, 112, 165, 171

40 CFR 262, 263, 264, 265

40 CFR 268, 270, 280, 300

40 CFR 370, 372, 761
NQA-1

QAMS-415

F.1.4 Sub-Objective: There is an adequate fire protection program.

Criteria:

1. The fire protection organization is defined and staffed to meet the needs of the facility.

2. A fire emergency response team is established, staffed, trained, and equipped to deal with the identified fire hazards.

3. Administrative procedures are established to control specific fire hazards.

4. All site fire hazards are identified and evaluated on a continuing basis. A fire risk analysis is documented and complete.

5. Requirements for life safety are specified, implemented and maintained.

6. The maximum credible fire will not cause property damage in excess of limits established in DOE Order 5480.7 or interrupt operations for a period longer than that defined for the facility.

7. Exposure from the consequences of fire to offsite property and personnel is controlled.

8. Fire suppression systems are available as specified in fire protection program documents.

Approach:

1. Review the management safety policy for a clear statement on the consideration of fire protection. Review the fire protection organization chart to establish that the necessary positions are in place. For each position, review functional descriptions to identify responsibilities and authorities.

   Review the qualifications of individuals assigned to the positions and interview representative individuals in the fire protection organization to determine staff qualifications. Compare position qualifications with the requirements of DOE Order 5480.7.

2. Review fire emergency response team organization to determine total number of team members and functions. Review regular staffing assignments to determine number of available members during day shift and back shift.

Interview selected fire emergency team leaders. Review team member training programs and training records. Review fire protection program documents to determine the presence of fire fighting strategies, routine plant familiarization tours for all members, and conformance with state or national requirements. Inspect fire fighting equipment for compliance with nationally accepted standards.

3. Identify and review administrative procedures related to fire protection. Verify that administrative procedures are in place for combustible and flammable materials, hot work including cutting and welding, smoking, and fire protection system impairments. Inspect existing conditions to determine implementation of the identified procedures.

4. Review the site FSAR and Fire Risk Analysis to determine that all facility areas and fire hazards are included. Determine that credible operating parameters are considered, including unusual operations, ventilation requirements, maintenance activities, and radiation control parameters.

   Review the fire protection program and identify the requirements for periodic review. Review station modification procedures to determine the requirement for fire protection review in modification approval cycle. Interview engineering and fire protection personnel to determine the level of understanding of the review process.

5. Review FSAR, Fire Risk Analysis, and design control documents to verify that the requirements of National Fire Protection Association 101, Life Safety Code, are specified. Verify that construction has implemented these requirements through design and the requirements are maintained through regular inspection. Review the fire inspection program and inspection reports for verification of continuing compliance with these requirements. Inspect the facility to observe existing conditions for compliance.

   Fire emergency procedures are established with initial and regular training provided to all employees. Review site fire emergency procedures to verify that fire reporting, site fire alarm signals, personnel actions, and evacuation are covered. Review visitor safety training to determine that fire alarm signals, evacuation procedures, and assembly areas are identified. Review regular employee training programs to determine that current fire emergency information is

included.

Identify and review procedures for fire emergencies pertaining to underground activity. Determine that evacuation, areas of refuge, surface and underground coordination are included.

6. Review the Final Safety Analysis Report and Fire Risk Analysis to determine the fire loss limit objectives are established in accordance with DOE Order 5480.7, Section 6.f. Interview the fire protection engineer to determine that the loss limit objectives are understood and considered for all fire protection program areas.

7. Review the Fire Risk Analysis, the fire fighting plans, and fire emergency procedures. Determine that the Fire Risk Analysis addresses the offsite exposure risk and identifies design features as well as fire emergency preparations to prevent fire and fire initiated contaminants posing a danger to the public, including liquid runoff, from escaping the site. Determine that fire fighting plans limit actions which would cause contaminant release.

8. Review design criteria for fire protection systems, including fire suppression systems, fire detection systems, water supply systems, water distribution systems, fire barriers, and portable extinguishers. Verify that design criteria includes installation and acceptance testing. Identify system inspection and testing procedures. Review inspection and testing procedures and records for fire detection, fire suppression, and fire alarm systems identified in WIPP limiting conditions of operation. Determine that fire protection systems are designed, installed, tested, inspected and maintained in accordance with recognized standards.

Basis:

The fire protection program must be initiated by management to function effectively across all lines of facility operations. The fire protection program must address the specific hazards of the WIPP facility and incorporate the concept of "defense in depth". Fire protection systems must be designed to accomplished defined objectives. Fire emergencies are infrequent occurrences which require immediate action to protect personnel, the public, operations, and property.

References:

DOE 5480.7, Fire Protection, Nov. 16, 1987

DOE 6430.1A, General Design Criteria

DOE/EV-0043, Standard on Fire Protection for Portable Structures

DOE 5484.1, Environmental Protection, Safety and Health Protection Information Reporting Requirements, 10/17/90.

National Fire Protection Association Standards

30 CFR 57, Subpart C

Title 29 CFR 1910, Subpart L

Title 29 CFR 1910.120

F.1.5 Supporting objective: There is an adequate maintenance organization and program.

Criteria:

1. An adequate and approved WIPP maintenance/design plan adequately documents organizational responsibilities for the maintenance decision process and defines maintenance/modification program elements including corrective maintenance, preventive maintenance, design modification, temporary repair/modifications, surveillance and predictive maintenance including the maintenance organizations and programs for work by contractors at WIPP. Adequate maintenance of the bin test equipment and its safety systems is included.

2. An adequate formal work control process provides:

   a. Equipment deficiency identification, prioritization and corrective action tracking and equipment history.
   b. Formal work authorization, job planning, scheduling and backlog measures.
   c. Work controlled by written procedures using qualified personnel.
   d. Post-maintenance testing (PMT) to assure equipment operability.
   e. Clear definition of responsibilities for initiating work requests, for developing and evaluating design changes, for evaluating safety implications, for approving completed work, and for ensuring that work is completed as scheduled are in place.

3. Technical support from engineering and other functional specialties is available and adequately specified to ensure: a) configuration management requirements are met, b) health and safety of the workforce and protection of the environment are maintained during maintenance activities, c) appropriate design insights are incorporated in failure analysis and industry experience feedback for the maintenance/modification program, and d) modifications and design changes do not exceed LCOs, violate OSRs, or in any other way violate safety requirements.

4. Adequate staffing and resources are provided to assure quality work and work backlogs consistent with the WIPP missions.

5. An effective procurement and material control process provides parts, materials, and services for work

activities.

6. An adequate maintenance performance assessment program has been implemented.

Approach:

1. Review maintenance/modification program documentation and procedures governing the work control process to assess the programmatic aspect of the organization and plans. Interview maintenance and engineering managers to determine if the maintenance/modification program coverage defines the system/component maintenance decision process regarding level of maintenance/modification, upgrades, replacement, deferment, or temporary repairs.

2. Conduct interviews with job planners, maintenance, and operations supervisors, engineering, and WIPP experimenters to determine the effectiveness of work packages, work priorities and schedules, and the safety culture on site. Select at least two systems important to waste handling operations and review corrective maintenance/modification and preventive maintenance performed in the past year. Sample work packages and compare history retrieval/analysis capabilities to industry standards and program specifications. Determine management standards for deferred or canceled preventive maintenance. Review rework criteria and sample at least ten work plans to verify post-maintenance testing is in place for systems important to waste handling operations' equipment, including test equipment and safety systems for Bin experiments. Review UORs related to maintenance design modifications, and present and past WIPP experiments.

3. Review performance indicators and trending used by WIPP management to measure the adequacy of the maintenance on-site. Interview at least two senior maintenance managers to determine the effectiveness of communications and support from QA, engineering, operations, safety, RADCON, and persons responsible for present and past WIPP experiments. Determine the degrees of coordination between these technical support and operational groups and maintenance for integration of the quality assurance, configuration management, ALARA and safety programs on site.

4. Analyze the work backlog to assure the effectiveness of the prioritization methods, spare parts and other support need delays, and balance of resources/staffing to workload.

5. Review records of work delays due to lack of materials and compare performance to management goals established. Review the process used for determining parts and materials needed and control of materials management records for procurement specifications, materials availability, storage locations and special criteria for preventive maintenance or shelf-life. Interview materials management personnel to determine the effectiveness of communications and interfaces with maintenance, quality assurance and engineering for ensuring that material needs are consistent with equipment configurations, operating experience feedback, quality and regulatory requirements. Interview at least three maintenance supervisors and planners, and Bin experimenters, to determine their level of satisfaction with materials support and any specific shortcomings that are not being addressed.

6. Interview maintenance and operations managers, as well as experimenters, to determine the performance indicators and other measures of performance used to assess the adequacy of the maintenance program and its implementation. Review procedures or plans covering the assessment process for adequacy. Review assessments conducted in the past year to determine the scope, criteria and thoroughness of the assessments and the management response to findings. Assess the adequacy of the performance assessment process for improving equipment availability and maintenance effectiveness.

Basis:

An effective maintenance organization is necessary to retain design basis requirements for fulfilling the WIPP mission. Specific controls are unique to maintenance activities which significantly impact safety and equipment reliability. Management's general approach to maintenance sets the organization's cultural bias toward safety, configuration management and equipment availability.

References:

DOE 4330.4A Maintenance Management Program, 4/9/91

INPO 85-038 Guidelines for the Conduct of Maintenance at Nuclear Power Stations (12/88)

F.1.6 Sub-Objective: There is an adequate quality assurance organization and program.

Criteria:

1. The quality assurance program to be implemented by DOE & WIPP management and its WIPP contractors is clearly defined and documented, has well defined interfaces and responsibilities, and includes a well defined and adequate system for audits and sureveillance, document review, corrective action, and follow up. The QA program is sufficiently independent of line responsibility for operations. There are adequate procedures for systematic review and audit of the QA program.

2. Quality assurance staff for DOE-AL is adequately trained and qualified to perform overview activities.

3. Reports are distributed to the appropriate level of management, as required by DOE Orders.

4. Administrative controls are implemented to maintain control of the quality assurance program elements for and by DOE WIPP Project Office and other offices of DOE-WIPP management. (audit/surveillance system, document review system, corrective action and follow-up system).

5. Quality assurance staff of DOE WIPP Project Office and of other offices of DOE-WIPP management is adequately trained and qualified to perform overview activities.

6. Quality assurance/reports are distributed to the appropriate level of DOE-WIPP management, as required by DOE Orders. The reports reflect adequate and timely QA reviews.

7. Adequate administrative controls are implemented by DOE-WIPP management and by Westinghouse to maintain control of the quality assurance program elements by. (all appropriate elements of ASME/NQA-1).

8. Adequate administrative controls are in place for the pass down of QA requirements to sub-contractors with objective evidence available to show approval of sub-contractors QA Programs, appropriate design and procurement activities, as well as, objective evidence of audits/surveillance and verification of sub-contractor corrective actions.

9. Quality assurance staff for WIPP Prime Contractor and

for other WIPP contractors is adequately trained and qualified to perform listed functions.

10. DOE-WIPP reports are distributed to the appropriate level of management and contractor management, as required by DOE Orders.

11. Assure operations surveillance provide for independent verification that audits/surveillance are properly conducted and data are reviewed and analyzed in a timely manner.

12. Acceptance test and inspection are verified to be accurate and complete for systems important to safe waste handling.

13. Calibration of measurement, test, and monitoring systems are assured and verified. A reliable system for quality assurance of the bin-test data is in place, tested and verified.

Approach:

1. Identify and evaluate Quality Assurance Program documents for adequacy. Compare these documents with the applicable requirements of ASME/NQA-1. Also consider DOE 4700.1, DOE 5700.6b.

2. Review DOE-AL QA staff's qualification and training records (Position Description, Resume, Auditor certification, ...etc.) to assure compliance with procedural requirements and DOE Orders. Review audit/surveillance schedules to assure positive overview activity is planned.

3. Select QA Management reports, as well as past QA audits/surveillance reports to assure that reports are distributed to the proper DOE/Contractor level for corrective action if required.

4. Identify and evaluate Quality Assurance Program documents for adequacy. Compare these documents with the applicable requirements of ASME/NQA-1. Also consider DOE 4700.1, DOE 5700.6b.

5. Review DOE-WIPP Project Office QA staff's qualification and training records (Position Description, Resume, Auditor certification, ...etc.) to assure compliance with procedural requirements and DOE Orders. Review audit/surveillance schedules to assure positive overview activity is planned.

6. Select QA Management reports, as well as past QA audits/surveillance reports to assure that reports are distributed to the proper level of DOE/Contractor level for corrective action if required.

7. Identify and evaluate Quality Assurance Program documents for adequacy. Compare these documents with the applicable requirements of ASME/NQA-1. Also consider DOE 4700.1, DOE 5700.6b.

8. Select a sample of two sub-contracts to assure that QA requirements have been passed down to the sub-contractor, appropriate procurement and design activities have been overviewed, and audit or surveillance have been conducted.

9. Review Contractors QA staff's qualification and training records (Position Description, Resume, Auditor certification, ...etc.) to assure compliance with procedural requirements and DOE Orders. Interview members of the QA staff to determine adequacy of qualification and overall program knowledge. Review audit/surveillance schedules to assure positive overview activity is planned. Review WIPP ORUs to determine possible deficiencies in the QA program.

10. Select QA Management reports, as well as past QA audits/surveillance reports to assure that reports are distributed to the proper level of DOE/Contractor level for corrective action if required.

11. Review operators work statements to assure independent inspections have been accomplished.

12. Review operators work statements to assure tests and inspections are verified to be accurate.

13. Sample instruments and gages to assure proper calibration has been accomplished and records of such calibration are traceable to the NBS. Review the specifications, tests, and installation of the system for transferring bin-test data and the system for quality assurance of data transfer.

Basis:

Experience in the DOE and Commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for design changes, procurement control, corrective action, reporting, training, and close out of open corrective actions. DOE 5700.6B requires formal

application of quality assurance requirements, including assessment against recognized standards. DOE 5700.6B also states that NQA-1 is the preferred standard for quality assurance for nuclear facilities. In addition DOE 5820.2A requires NQA-1 for waste transportation activities. Additionally, DOE 4700.1 and industry practices on configuration management will be considered during this evaluation.

References:

DOE 4700.1 Project Management System, March 6, 1987

DOE 5700.6B Quality Assurance, March 28, 1990

DOE 5820.2A Radioactive Waste Management, September 26, 1988.

DOE 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86.

ASME/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

F.1.7 Sub-Objective: Radiological protection programs and procedures provide appropriate direction, effectively support safe operation of the facility, and ensure adequate protection of workers, the public, and the environment in accordance with DOE Orders.

Criteria:

1. Organization and administration of the radiological protection program ensures effective implementation and control of radiological protection activities.

2. Training and qualification programs for radiation protection personnel are adequate and personnel possess the experience, knowledge, and abilities necessary to perform their jobs safely.

3. Programs to evaluate and control internal and external radiation exposure assure effective monitoring and measurement of worker and public radiological exposures.

4. Programs to minimize the generation of solid radioactive waste are effective.

5. Programs to control radioactive material are effective in: (1) providing adequate packaging, labeling, accountability, and safe transportation of such material; and (2) minimizing the contamination of areas, equipment, and personnel.

Approach:

1. Review the organizational structure of the radiation protection group and its relationship to the line management structure at WIPP. Determine if the organizational structure is clearly defined. Determine if the Radiation Protection Manager has direct access to senior line management, thus providing organizational independence.

   Review the authorized staffing levels against the current staffing levels and determine if an adequate staff is available to support operations.

   Review the formal WIPP radiation safety and ALARA policies to determine if they adequately incorporate corporate and WIPP facility objectives and responsibilities.

   Review operations group policies and guidance to determine if they clearly incorporate WIPP radiation

safety and ALARA policies and state that proper radiological controls are also the responsibility of the operations group.

Interview the Radiation Protection Manager and two staff members to determine if adequate resources are provided by upper management. Specifically, determine if adequate staffing of technical, functional, and supervisory positions exists and if adequate staff and equipment are available for emergent work. Determine if the corporate and facility objectives are adequately promulgated to the staff. Determine if the Radiation Protection staff understands its responsibilities as stated in the Radiation Protection policies, including authority in controlling work activities to protect workers.

Interview two managers and two operations personnel from the facility staff to determine their awareness of Radiation Protection policies and the understanding of their responsibilities. Determine if they understand the Radiation Protection group's authority in controlling work activities to protect workers. Determine if appropriate responsibilities have been assigned to facility staff, including maintenance and operations personnel, in radiological protection-related areas, such as minimizing exposure, spread of contamination, and generation of radioactive waste.

Review three operations group operating procedures and three radiation protection procedures to determine their adequacy in supporting normal and accidental activities. Determine if they are clear, concise, current, and readily available to the user.

Review the facility's layout to determine adequate space and equipment are available to support radiological protection activities (i.e. counting room, personnel decontamination facilities, overpack facilities, and storage space for supplies and equipment.)

2. Review WIPP compliance with orders in regard to the training requirements specified in Order DOE 5480.11 to determine if WIPP's training program for radiation protection personnel is adequate. (Note: Coordinate this Sub-objective with Objectives P.1, P.2, and P.3. This section provides additional detail for the radiological protection functional area and is included here for continuity within this functional Sub-objective).

Determine if performance indicators will be used to identify adverse trends in performance of radiological worker and control personnel.

Interview a supervisor and two technicians in each radiation protection group, radiological engineering, operational health physics, and dosimetry and analytical technology (and others as deemed appropriate), to determine the level of understanding and training provided and assess its suitability for their job functions.

Observe radiologically significant evolutions during the bin scale test to determine if radiation workers practice radiological safety precautions taught in radiation worker safety training.

3. Review WIPP compliance with orders of WIPP with regard to internal and external radiological exposure control and determinations required by DOE 5480.11. Determine whether WIPP's program provides for adequate identification and addressing of noncompliances in the control of internal and external radiation exposure. Verify that a program exists to track weaknesses through the implementation of corrective actions. Determine if performance indicators will be used to identify adverse trends in the performance of activities to control exposures.

   Verify that the external dosimetry program has been approved by the DOE Laboratory Accreditation Program.

   Verify that the facility's internal dosimetry program has been properly reviewed and a quality assurance audit performed on the contracted facility. Review the adequacy of support to operations due to utilizing an offsite internal dosimetry assessment service.

   Interview the supervisor and two technicians in the dosimetry group to determine the understanding of their responsibilities, procedures, and program. Review three of their procedures to determine their adequacy in supporting normal and accidental activities. Determine if they are clear, concise, current, and readily available to the user.

   Review the exposure control records to determine WIPP compliance with the DOE Order.

   Review the ALARA program and determine how radiation exposure potentials have been reduced and assess its ability to reduce radiological exposures during future

operations.

Review the airborne radiological exposure control program and the procedures associated with airborne exposure control.

Observe radiologically significant evolutions during the bin scale test to specifically assess:
- ALARA exposure controls
- airborne radioactivity controls
- use of portable instrumentation and dosimetry
- ability to control radiation during overpack operations

4. Review surveillance procedures and techniques for the release of clean materials.

Review programs and procedures intended to reduce the volume of radioactive material generated from the facility.

Determine if personnel are aware of waste reduction policies and if waste collection containers are provided for clean waste and radioactive waste to minimize radwaste generated.

Interview one supervisor and two technicians to determine their awareness and ability to control solid radwaste generation in accordance with DOE Order and facility procedures.

Observe waste handling activities during the bin scale test to determine if personnel are aware of policies and if waste collection containers contain material that typically should not be disposed of as radioactive waste or material that could be cleared as non-radioactive.

5. Review whether WIPP's procedures and practices in the following areas are in compliance with DOE Orders:
- posting, packaging, and labeling
- material accountability
- shipping and transportation
- contamination control

Determine if performance indicators will be used to determine the frequency of personnel contaminations and discovery of radioactive contamination in clean areas.

Interview a supervisor and two technicians to determine if personnel are aware of their radioactive material control and contamination control procedures and to

determine their abilities to implement them. Review their use of portable radiological instruments and ability to calibrate instruments properly and safely. (Note: Review of their calibration of continuous air monitors, fixed air samplers, effluent monitors, and area radiation monitors will be assessed under the hardware objectives H.1, H.2, H.3, and H.4. Review of material packaging will be coordinated with objective F.2.)

Observe control of radioactive materials in regard to the above procedures and practices as they may occur during the bin scale test.

Basis:

This review is based on functional requirements contained in DOE Orders and its applicable references, INPO guidelines, and ANI criteria listed below.

References:

DOE 5480.11, Radiation Protection for Occupational Workers, and its applicable references, 6/29/90.

DOE 5480.4, Environmental Protection, Safety and Health Protection Standards, and its applicable references, 5/16/89.

DOE 5820.2A, Radioactive Waste Management, 9/26/88.

DOE 5400.5, Radiation Protection of the Public and Environment, 6/05/90.

DOE 5484.1, Environmental Protection, Safety and Health Protection Information Reporting Requirements, 10/17/90.

INPO 88-010, Guidelines for Radiological Protection at Nuclear Power Stations, as applicable to the WIPP facility.

ANI/MAELU, Engineering Inspection Criteria for Nuclear Liability Insurance; Section 2, Training; Section 4, Radioactive Waste; Section 8, Radiation Protection; Bulletin 80-1A, Dosimetry.

F.1.8 Sub-Objective: There is an adequate security organization and program.

Criteria:

1. The WIPP facility has a formal security program adequate to support operations by protecting the facility, its property and personnel from unauthorized intrusion, theft, or emergencies.

2. The WIPP security organization has adequate equipment and trained personnel, including support from local and regional law enforcement agencies, to support realistically identified needs of the WIPP facility and personnel.

3. The WIPP security organization has demonstrated its effectiveness through planned exercises and its day to day operations.

Approach:

1. Review the overall scope of the WIPP Security Program as documented in approved plant manuals, to establish that it provides protection for the facility, its property, and personnel in compliance with DOE Order 5632.6. Assure that this scope includes both routine operations as well as a realistic spectrum of unusual or emergency conditions.

2. Review the staffing, qualifications and training requirements of the Security Facility Staff and relate these capabilities to the Security organization's documented mission. Establish that necessary written agreements with local, state and federal law enforcement agencies are in place to supplement the WIPP Security staff as required. Establish that personnel records and training requirements of WIPP Security personnel are readily available and current. Assure by interviewing at least three security personnel that they are familiar with their support function to the WIPP facility and recognize their obligations to support the WIPP programs emphasis on health, safety, and protection of the environment.

3. Review the scope and appraisals, both self-appraisals and outside evaluations, of Security organization exercises to establish their readiness to perform their duties under realistic, unusual or emergency conditions.

Interview at least four WIPP employees not in the security organization to establish that they view the day to day operations of the WIPP Security organization as supportive of facility operations and professional in its conduct.

Basis:

Although not a classified DOE facility, WIPP nevertheless has an important DOE mission as well as valuable physical and personnel resources. It is important that these resources be protected by a competent and dedicated security force. The ORR review is to establish that the general scope, personnel qualifications, and demonstrated competence of the Security program and force is adequate to support the test bin phase of operations.

References:

DOE 5632.6, Physical Protection of DOE Property and Unclassified Facilities, 12/05/89.

DOE 5632.9, Issuance Control and Use of Badges, Passes and Credentials, 12/19/88.

DOE 5480.16, Firearms Safety, 10/10/90.

F.1.9 Sub-Objective: There is an adequate training organization and program.

Criteria:

1. The organizational structures for training and qualification and requalification programs are well defined and understood, including the responsibilities of all personnel involved in managing, supervisory and implementing training.

2. A training and qualification and requalification system is defined and implemented.

3. Training requirements for temporary employees, contract personnel and visitors are established and are appropriate for the tasks assigned.

4. Training and retraining schedules are maintained to keep all personnel qualified/certified.

Approach:

1. Review WIPP documentation to determine whether an organizational structure is defined. Interview at least five individuals involved in implementing training and qualification and requalification programs to determine if they understand their responsibilities.

2. Review WIPP documentation to determine if a training system is identified. Review documentation for at least two programs to determine if the system is being implemented as defined.

3. Review training requirements for temporary personnel and visitors. Review at least five training records to determine if these requirements are being followed.

4. Review methods established to monitor the qualification/certification status of WIPP personnel. Interview at least three supervisors to determine how they ensure that their personnel maintain needed qualifications/certifications.

Basis:

DOE 5480.5 and DOE 5480.20 require that training and qualification programs be established for facility personnel based on job requirements and that records for those programs be maintained in an auditable manner.

References:

DOE 5480.5, Safety of Nuclear Facilities, September 23, 1986.

DOE 5480.20, Personnel Selection, Qualification and Staffing Requirements at DOE Reactor and Non-Reactor Nuclear Facilities, February 20, 1991.

F.1.10 Sub-Objective: Industrial hygiene and safety programs, policies, and procedures have been developed which are consistent with the hazards present or anticipated in the working environment as well as with DOE Orders and MSHA and OSHA standards. The overall program is effectively managed to promptly address and remedy hazards and systems are in place to communicate information to workers in order to prevent occupational injuries and illnesses.

Criteria:

1. A formal safety and health program has been developed which includes procedures and policies consistent with DOE Order and OSHA.

2. Sufficient resources are available and dedicated to occupational safety and health to operate an effective program. Personnel, equipment and reference materials are available to administer the program.

3. Appropriate recordkeeping procedures have been established to document injuries, illnesses, and accident occurrences and to permit the ready analysis of such records. Inspection and training records are maintained to help ensure that conditions are addressed and employees are aware of requirements.

4. The training function is appropriately staffed to effectively perform all required training. The content of training programs adequately addresses all requirements and hazards at the facility, is effectively communicated, and records are maintained.

5. Sufficient workplace surveillance exists to seek and track safety and health hazards. Regular and periodic audits are conducted to assess workplace conditions. Monitoring and evaluation equipment is available and used to document employee exposure to hazards.

6. Noncompliance conditions are documented, corrective action dates established, and tracking programs implemented to assure prompt abatement of observed hazards. Where engineering or administrative controls are not readily implemented, personal protective equipment is available and used to provide interim employee protection.

7. A system exists and is utilized whereby employees may identify safety and health hazards to their supervisor for corrective action without fear of reprisal. Employees are aware of their access rights to information including medical and monitoring records

and Material Safety Data Sheets.

Approach:

1. A review of all relevant aspects of the formal safety and health program will be undertaken to evaluate the content for accuracy, adequacy and consistency with DOE orders and OSHA.

2. Safety and health resources such as staffing, equipment and the availability of reference resources will be evaluated to determine whether knowledge and tools exist to operate and manage an effective program.

3. A review of all records will be performed to determine whether they are properly maintained. This review will include injury and illness records, inspection records and training records.

4. The training program will be reviewed for content and the effective communication of information. Selected employees at various levels will be interviewed to determine their knowledge of information regarding hazards.

5. A physical walkaround of selected areas of the facility will be performed to observe actual work site conditions and practices, to assess compliance with existing requirements, and the effectiveness of internal audits.

6. Prior reports of findings will be reviewed to determine whether corrective actions have been promptly and properly undertaken and to evaluate the tracking system employed to assure that such actions have been completed.

7. Employee interviews will be conducted to determine the extent of their knowledge regarding worker rights such as complaint procedure and access to information.

Basis:

Industry practice, OSHA and DOE Orders require that occupational safety and health programs ensure that employees are informed of potential hazards that may be encountered in the work place and that the associated controls are in place to maintain risks at an acceptable level. Effective procedures must be established and enforced to protect the employees' safety and health.

References:

DOE 5480.1B, Environment, Safety and Health Programs for Department of Energy Operations, March 27, 1990.

DOE 5480.4, Environmental Protection, Safety and Health Protection Standards, May 16, 1989.

DOE 5480.8, Contractor Occupational Medical Program, November 16, 1987.

DOE 5480.9, Construction Safety and Health Program, 11/18/87.

DOE 5480.10, Contractor Industrial Hygiene Program, June 26, 1985.

DOE 5483.1A, Occupational Safety and Health Program for DOE Contractor Employees at Government-Owned Contractor-Operated Facilities, June 23, 1983.

DOE 5481.1B, Safety Analysis and Review System, 5/19/87.

DOE 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86.

29 CFR 1910, Occupational Safety and Health Standards

29 CFR 1926, Occupational Safety and Health Standards for Construction

F.2 Objective: The TRU waste packaging and transportation equipment and programs for the Dry Bin Scale Test Program will provide assurance that properly categorized TRU waste will be properly loaded, packaged, transported and unloaded at the WIPP Facility in compliance with health, safety, and environmental requirements.

F.2.1 Sub-Objective: TRU wastes shipped to WIPP meet the WIPP Waste Acceptance Criteria (WAC)

Criteria:

1. WIPP waste acceptance criteria and schedules relevant to specific test phases are effectively communicated to responsible DOE and contractor waste shipment originators.

2. Validated procedures, trained personnel and necessary test equipment are in place at the selected point of waste origin to classify, segregate and package TRU waste in accordance with WIPP-WAC and to inspect, verify, and document the characteristics of each waste unit.

3. Management controls ensure the proper number of waste containers are loaded and maintained within the WIPP-WAC characteristic profile to meet the Bin Scale Test Program Schedule.

4. The waste packaging process has been satisfactorily audited by WPO management or other oversight functions, and findings and recommendations have been effectively addressed.

5. Procedures and agreements exist for rejecting or holding wastes if verification of WIPP waste acceptance criteria can not be met and maintained.

Approach:

1. Interview cognizant WPO Technical Support personnel and research waste acceptance criteria evolution. Review previous studies and program documentation. Determine relevant outstanding issues concerning the waste acceptance criteria, Bin Scale Test program elements and TRU packaging procedure, especially the definition of responsibilities and time constraints for classifying, shipping, holding and receiving the first waste shipment. Assess the clarity of communications and mutual acceptance of responsibilities among INEL, DAWN, DOE-AL, WPO and WIPP. Obtain copies of latest WAC, and directions or procedures communicating the criteria and relevant shipping schedules.

2. Travel to INEL and review program documentation and procedures for WIPP waste classification, segregation, packaging and loading. Observe a planned demonstration of WIPP waste shipment preparation. Review test equipment requirements for verifying the waste

characteristic profile. Review personnel qualification records and test equipment calibration logs. Determine a) if any WIPP Bin Scale test waste was prepared previously, b) if procedures, personnel and equipment qualifications were valid at the time of preparation, c) if time constraints for holding this waste within the WAC exist, and d) what procedures exist for maintaining the WAC validated status or rejecting the waste lot prior to shipment.

Assess the INEL contingency plan for mitigating the environmental impacts of fire, explosion or accidental release of hazardous components of mixed waste.

3. Review storage site plans for implementing each element of the approved certification plan with special emphasis on prevention of pressure build-ups during interim storage and other methods used to maintain the waste certification. Interview personnel assigned to certified WIPP TRU surveillance to assess their knowledge of the surveillance tasks and notification/action criteria. Verify through management interviews that the shipping schedule communication and change process is understood, especially the quantity and mix of waste characteristics.

4. Review the last WPO/DOE-AL management audit of the WIPP waste certification & packaging process conducted at INEL. Determine the status of findings and recommendations. Review the WIPP-WAC certification committee audit tracking system database to assess the effectiveness of INEL management in closing out action items and the timeliness, usefulness and accuracy of the WIPP-WAC certification committee database.

5. Review INEL and WIPP procedures governing maintenance of waste certification during interim storage, shipping and receipt at WIPP to assess the alternatives and criteria used to reject waste destined for or received at WIPP. Assess the implementation of instructions for completing shipping papers and the appropriate WIPP Data package. Review procedures for determining and implementing disposition of rejected wastes.

Basis:

The WIPP mission of research toward TRU waste disposal requires relatively strict scientific control of tests and experiments. Waste Acceptance Criteria and a certification plan for achieving and maintaining these criteria were developed to keep the WIPP facility within state and federal

environmental regulations during this research phase and to allow the scientific experiments to proceed with a defined waste characterization envelope. Effective management control of the groups involved in this process is essential to allow initiation of the WIPP Bin Scale Test.

References:

DOE 5820.2A Radioactive Waste Management (9/88)

WIPP-DOE-069 Attachment 1 (Waste Acceptance Criteria)

WIPP-DOE-157 (WIPP Data Package)

F.2.2 Sub-Objective: WIPP TRU waste shipments are packaged, loaded, secured, and documented following approved procedures and in compliance with all applicable Federal and State requirements.

Criteria:

1. BINs are designed and fabricated to meet design specifications and TRUPACT requirements.

2. BINs are stored in segregated storage and maintained in good condition while in storage.

3. Standard Waste Boxes (SWB) are designed and fabricated to meet TRUPACT design specifications requirements.

4. SWBs are stored in segregated storage and maintained in good condition while in storage.

5. TRUPACT containers are designed and fabricated to meet the NRC approved design.

6. Procedures properly implement administrative controls for loading the BINs. If possible, waste loading into the BIN will be observed and is available on video tape. BIN loading into SWBs has been demonstrated.

7. SWBs are properly loaded into the TRUPACT. The loading operation will be demonstrated.

8. Shipping and receiving radiation surveys of TRUPACTs are accomplished according to established Health Physics procedures. Records of radiation surveys are maintained on file. Determine if Radiation surveys at INEL and WIPP are coordinated, using the same radiation standard and 'name brand' instruments and using instruments calibrated against the same standard.

9. TRUPACTs are loaded on the transporter in accordance with established procedures. TRUPACTs are easily identifiable by emergency response personnel appropriately numbered in accordance with the shipping papers.

10. The transport vehicle is visually inspected to determine its general condition and capability to transport assigned shipments.

11. The shipper assumes traditional roles of authority and responsibility in preparing the shipment and offering the shipment to the carrier.

12. Shipping papers are prepared by properly trained

personnel in accordance with the provisions of 49 CFR 172.

13. Procedures are in place for proper notification to States in accord with the requirements of 10 CFR 71 Subpart G.

Approach:

1. Review design requirements for the BINs. Review procurement records and receipt documentation which verifies BINs meet all requirements.

2. Visit BIN storage area(s) to observe security/segregation and environment of the storage location(s) at WIPP and INEL. Review inspection procedures which require examination of BINs for integrity prior to use.

3. Review design requirements for the standard waste boxes. Review procurement records and receipt documentation which verifies SWBs meet TRUPACT requirements.

4. Visit SWB storage area(s) to observe security/segregation and environment of the storage location(s). Review procedures which require examination of SWBs for integrity prior to use.

5. Review the NRC approved Certificate of Compliance. Review fabricator and WIPP documentation that TRUPACTs are fabricated in accordance with the NRC approved design. Verify that TRUPACTS containers that were constructed but did not meet design requirements are stored and appropriately marked to prevent their use.

   Interview individuals with responsibility for receipt of the TRUPACT. Review documentation which certifies that TRUPACT containers have been fabricated in compliance with the quality control requirements. Assure that TRUPACT fabrication certification has been independently verified.

6. Interview individuals responsible for loading. Review loading procedures and observe the loading of a BIN with TRU-waste, and loading BIN to SWB. Verify closure procedures and proper training of personnel.

7. Assure that documented, validated procedures are utilized for loading the TRUPACT and that personnel are properly trained. Verify that loading is in compliance with Department policy and directives and in compliance

with the Certificate of Compliance. (Reference: 10 CFR 71, Subparts A, G, & H)

8. Interview responsible individuals and observe radiation surveys and the documentation thereof.

9. Interview responsible individuals and observe an actual loading. Observe that transport vehicles are properly placarded in accordance with the provisions of 49 CFR 172. Verify that procedures are in place for loading TRUPACT on transporter and that personnel are properly trained.

10. Observe that transport vehicles are carefully inspected by facility personnel and the inspection is documented with established checklists. Observe that TRUPACT tie-downs are inspected prior to release of shipment to assure the proper loading and securing of the TRUPACT packages (Reference: DOE 1540.1, 4.b (1) (b)). Determine that procedures are in place for all inspections and checklists are included in procedures.

11. Interview responsible individuals to determine the role of the shipper vs role of WIPP. Determine who is responsible for safety oversight of the carrier. Does the shipper have a "yard tractor" for spotting the transporter for loading with personnel properly trained and adequate procedures.

12. Review shipping papers for the simulated shipment of TRU-waste. Determine that copies are maintained on file. Determine if the shipping papers identify each TRUPACT and indicate the contents of each TRUPACT by the ID number of the TRUPACT. Determine that the ID number on the TRUPACT is readable/visible by emergency response personnel.

    Determine that shipping papers comply with the provisions of 49 CFR 172, Emergency Communications. And that the technical name of the TRU-waste contents is properly shown. Verify that the 24 hour telephone is listed. Call the 24 hour telephone to determine its correctness and to determine the proper training of the individual who answers the telephone. Visit the response room at WIPP and determine that procedures are in place for use of the duty responder outlining actions to be taken (i.e. proper sequence, available immediate directions, etc.)

    Determine how shipping paper information related to technical and emergency response is forwarded and entered into TRANSCOM.

13. Determine what responsibilities has been established for advance notification to States and that the notification meets the requirements of 10 CFR 71.

Basis:

Proper shipment preparation is essential to transport operations. Strict reguatory compliance to NRC and DOT regulations is required and supported by DOE 1540.1, 1540.2, and 5480.3. Procedures and training must demonstrate that the TRU Waste will be properly packaged, loaded, secured, placarded, and documents prepared for all requirements.

References:

DOE 1540.1

DOE 1540.2, Hazardous Material Packaging for Transport - Administrative Procedures, 12/19/88.

DOE 5483.1

10 CFR 71

49 CFR 172

TRUPACT Certificate of Compliance

F.2.3 Sub-Objective: Transportation of transuranic waste is by properly licensed vehicles, licensed and trained drivers using verified procedures.

Criteria:

1. TRUPACT transporters (trailers) are properly licensed (and registered) to operate in all jurisdictions through which they will travel.

2. All drivers are properly licensed and trained in all aspects of their responsibilities.

3. Transportation procedures properly implement administrative controls which are needed to assure regulatory compliance.

4. Dawn Trucking is a registered DOT carrier, and meets DOE carrier qualifications.

Approach:

1. Interview individuals responsible for the TRUPACT transporters. Review the process by which the transporters were designed, selected, purchased, received, and accepted. Determine the number of TRUPACT transporters.

   Determine how many TRUPACT transporters had flaws (cracks), and how were these deficiencies addressed. Determine if the deficiencies were reported in accordance with the DOE Unusual Occurrence requirements.

   Determine if the TRUPACT transporter repair or re-certification were covered by a corrective action program. Determine how and when the repairs were completed. Evaluate the WIPP oversight of the repair process, e.g. did WIPP assure that qualified welders were used? Determine that there are procedures which direct periodic checks of the TRUPACT transporters.

2. Interview Dawn Trucking management personnel. Review driver qualification files to verify they contain: medical verification that drivers meet the requirements of the Controlled Substance Testing Program, have been properly trained, and are properly licensed (commercial drivers license with hazardous material rider).

   Drivers will be interviewed to determine: (1)experience prior to being employed by Dawn Trucking, (2)length of employment with Dawn, (3)experience since

employment, and (4)what training and/or retraining has occurred since date of hire.

3. Interview Dawn Trucking management personnel. Determine that procedures have been prepared, verified, and implemented.

4. Interview management personnel from Dawn Enterprises (Dawn Trucking is a subsidiary of Dawn Enterprises, Farmington, NM). Determine Dawn Enterprises and Dawn Trucking experience in trucking and determine their experience with radioactive materials.

   Review the process by which Dawn Trucking leases the tractors it uses. Determine if they always use a tractor that is properly registered with DOT (DOT # on door panel). Determine who is responsible for maintenance of the tractors and if it is adequately performed. Determine who is responsible for oversight of the preventive maintenance program . Determine who is responsible for regulatory compliance of the tractors. Determine if Dawn Trucking carrier the proper amounts of liability insurance.($1M for trucking; $5M for haz. mat, re: 49 CFR 393)

   Determine if the DOT has completed any inspections of Dawn Trucking. Determine Dawn Trucking's DOT rating.

Basis:

As the selected carrier, Dawn Trucking Company will be responsible for the Bin waste shipments and will represent the entire DOE/WIPP Program during the transport phase. They must be in strict compliance with all DOT and State licensing requirements for drivers and vehicles and have supporting procedures and training programs, as well as experience, to adequately and safely fulfill this function.

References:

49CFR172, 393 and 399

DOE 1540.1

DOE 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Material, Hazardous Substances, and Hazardous Waste, 7/9/85.

Dawn Management Plan

F.2.4 Sub-Objective: Routing from INEL, the point of origin, to the WIPP facility is in accordance with all Federal and State permitting requirements, and agreements and systems to support WIPP shipments are operationally ready.

Criteria:

1. The proposed route meets the requirements of the Hazardous Materials Regulations.

2. The proposed route meets the requirement(s) of State (ID, WY, UT, CO, NM), and local jurisdictions and Tribal Nations.

3. TRANSCOM is operationally ready to support the WIPP program.

4. Emergency preparedness procedures and resources are ready for potential transportation incidents involving WIPP shipments.

5. Upon arrival at the WIPP Facility, systems are established for inspection and receipt of shipment. In-transit storage area is adequate.

Approach:

1. Determine that an established route has been established that meets the requirements of 49 CFR 177.825(b) for highway route controlled quantities (HRCQ); or, if less than HRCQ, the route meets the requirements of 49 CFR 177.825(a) for radioactive material shipments. Determine if there are designated areas where the driver may or must stop for tire checks (every 100 miles), refueling, emergency repairs, examine securing devices (first 25 miles and periodically thereafter), and for rest periods or exchange of drivers. Determine if DOE has established a series of "safe havens" for WIPP shipments should the carrier encounter inclement weather, or require a location for repairs, etc.

2. Examine all routing agreements between DOE and the transit states and assure that the designated route meets any DOE commitments.

3. Interview responsible personnel to determine the existence of implemented and verified procedures, a quality assurance program, operator training, etc., for TRANSCOM. Observe actual operation of TRANSCOM.

Determine if:

the TRANSCOM "shipping screen" (able to be viewed by States) is suitable for emergency response purposes.

the format and content of TRANSCOM information is suitable for emergency preparedness/response personnel.

TRANSCOM covers the entire route, 24 hours/day. If the GPS satellite system is used for determination of geographical position, what is the time between position update? Any blind spots?

Determine the availability of backup communications. Determine the suitability of cellular telephone as a communications backup. Determine if drivers and escorts or alternate drivers are trained to use the cellular telephone. Determine if there any gaps in the "responder cell" coverage for the entire route.

4. Interview responsible personnel from ID (INEL), Rocky Flats Plant, Albuquerque Operations Office (including the nearest RAP and/or RAT), WIPP, and Oak Ridge Operations Office to determine that their emergency preparedness/response program(s) include plans and contingencies for response to a transportation incident involving a TRUPACT and that clear lines of responsibility have been established.

Determine if DOE/DOE contractor personnel are properly trained to support an emergency response to a TRUPACT incident. Determine that training includes appropriate portions of DOT regulations which may impact the TRUPACT.

Determine the extent of State, Local and Tribal emergency response personnel training through training records available at WIPP. Review exercises and drills conducted to determine if they're generally "satisfied" with their ability to properly respond to a transportation incident involving a TRUPACT loaded with TRU waste.

Basis:

The route selection must be in accord with the federal requirements as well as all commitments made by DOE to the States. The TRUPACT will traverse five states during the Dry Bin Scale Test program, with the potential for accidents in each of

these states. DOE must have demonstrated capabilities to respond to all level of accidents. Such capabilities include training and drills with local and state emergency responders, in addition to prompt response by the designated DOE response team.

References:

DOE 1540.1

DOE 5480.3, Safety Requirements for the Packaging and Transportation of Hazardous Materials, Hazardous Substances, and Hazardous Wastes, 7/9/85.

DOE 1540.2, Hazardous Material Packaging for Transport - Aministrative Procedures, 12/19/88.

DOE 5480.1B, Environment, Safety, and Health Program for Department of Energy Operations, 3/27/90.

DOE 5700.6B, Quality Assurance, 3/28/90.

DOE 5482.1B, Environment, Safety and Health Appraisal Program, 9/23/86.

Federal Regulations: 49 CFR 100 - 177, 49 CFR 390 - 397, 10 CFR 71.

F.3 Objectives: There are adequate support programs with appropriate requirements, procedures and assigned staff to support safe facility operations and waste handling.

F.3.1 Sub-Objective: There exists an adequate configuration management program to assure necessary change and drawing control of plant structures, systems and components and to assure changes are reflected in training, procedure development and maintenance.

Criteria:

1. A Configuration Management policy exists, responsibilities and interfaces for configuration management are clearly defined, and the policy is clearly communicated to all levels of the organization.

2. Current plant design requirements should be readily available to facility personnel and used in designing plant changes, preparing facility procedures and troubleshooting.

3. Management should ensure that changes to the facility are warranted and properly controlled.

4. Design documentation should be maintained current and should reflect the facility as built configuration.

Approach:

1. Review configuration management policy to determine;
   - o Scope of configuration management controls
   - o Responsibilities of involved organizations
   - o Principal interfaces required to maintain configuration management
   - o Review and approval of proposal changes
   - o Scope of configuration control drawings
   - o Control of vendor manuals

2. Interview two engineering personnel to determine;
   - o Availability of design requirements
   - o Accuracy of design documents
   - o Backlog of design changes
   - o Backlog of drawing changes
   - o Backlog of facility modifications

3. Interview the responsible manager for configuration management to determine;
   - o Backlog of design changes
   - o Backlog of drawing changes
   - o Backlog of facility modifications
   - o Prioritization scheme for facility changes
   - o Interface with maintenance, training and operations personnel concerning impacts of new and revised design requirements.

4. Review a recent plant change to determine;
   - o Consistency of physical plant and design documents
   - o Reviews made for impacts on operations, maintenance and training
   - o Changes made to procedures

This review will be coordinated with sub objectives: H.1.3, H.3.1, H.3.3, H.3.3, H.3.5, H.4.3, H.4.4, H.4.5 and H.5.3

Basis:

Criteria are consistent with INPO guidance and DOE Orders. These criteria ensure that the activities associated with plant configuration and changes thereto are appropriately controlled to maintain the facility asbuilt configuration in conformance with design requirements.

References:

INPO 86-009 Guidelines for the Organization and Administration of Nuclear Power Stations

INPO 87-006 Report on Configuration Management in the Nuclear Industry

DOE 5480.19 Conduct of Operations Requirements for DOE Facilities, 7/09/90.

ASME NQA-1 Quality Assurance Program Requirements for Nuclear Facilities.

F.3.2 Sub-Objective: There exists a program of self-assessment to measure safety performance and to determine root causes of unusual occurrences (UOR).

Criteria:

1. A self-assessment program which ensures that technically competent personnel who are trained in root cause analysis and self-assessment techniques is established.

2. The self-assessment program shall ensure that those conducting the investigation are independent of the cause of the unusual event.

3. The "lessons learned" which are developed as a result of the self-assessment and root cause analysis shall be recommended and shall be incorporated into the corrective action system to prevent recurrence.

4. The self-assessment program should contain provisions to call in personnel with special expertise to assist in the UOR investigation.

Approach:

1. The self-assessment program will be reviewed in order to determine if the programmatic aspects ensure that technically competent, and independent personnel conduct investigations. Training records and resumes of two (2) personnel assigned to perform self-assessments will be evaluated to verify their technical qualifications and qualifications relating to familiarity with and formal training in root cause analysis techniques.

2. Through a review of the self-assessment program plan, ensure and verify that the program's implementing procedures specify selection and assignment of personnel to perform self-assessments who are independent of the area being evaluated. Review two (2) completed self-assessments and verify that personnel performing the assessments were independent of the area assessed.

3. Review two (2) completed self-assessments to determine the specific findings and/or recommendations generated as a result of the self-assessment. Verify that corrective actions are required to be initiated to address the findings/recommendations. Verify that adequate priority is assigned to the corrective actions. Verify if corrective actions have been

completed. Verify that publicity is given to root causes and corrective actions.

4. Through a review of the self-assessment program procedures, verify that management/personnel responsible for execution of the program are directed to ensure that assessment teams be supplemented with special expertise (if required) to assist in the UOR investigation. Through discussions with cognizant personnel identify and review a self-assessment where outside, special expertise was required.

Basis:

A self-assessment program which specifies the skills and knowledge required to perform UOR investigations and ensures that corrective actions are implemented to prevent recurrence.

References:

SEN-6D

DOE 5480.19, Conduct of Operations Requirements for DOE Facilities, 7/09/90.

DOE 5000.3A, Occurrence Reporting and Processing of Operations Information, 5/03/90.

F.3.3 Sub-Objective: There exists an adequate review and oversight of unresolved safety question determinations.

Criteria:

1. A program which ensures that unresolved safety questions are addressed has been established. This program shall address safety questions raised both by internal and external personnel agencies.

2. The program shall ensure that the concerned person or agency will receive a response that considers the safety consequences of the safety question.

3. The program shall also contain provisions to resolve differing professional opinions and provide escalation to site and DOE management for those issues which cannot be resolved at a lower level.

Approach:

1. Verify that programs are defined and procedures are in place which specify methods used to identify, address, and reconcile questions concerning the safety of the WIPP. Verify that programs and procedures address the methods for questions raised both by internal and external personnel and agencies.

2. Verify that the procedures reviewed in Approach 1 specify a timely response be provided to personnel/agencies who raise the question. The response need not be a single response at the end of the process but should be comprised of intermediate responses which acknowledge receipt of the question and a judgment as to the safety significance of the question. Review three instances and verify that responses were provided to originators of the question in a timely manner.

3. Based upon a review of the procedures which define the program, verify that the procedures acknowledge that a conflict in professional opinions can occur. Verify that the procedures specify a conflict resolution process which involves management escalation to achieve a definitive response and resolution.

Basis:

An unresolved safety question program which ensure that safety question can be raised and properly resolved is essential to ensure that the health and safety of site personnel and the public.

References:

DOE 5481.1B, Safety Analysis and Review System, 5/19/87.

DOE 5480.5, Safety of Nuclear Facilities, 9/23/86.

DOE 5001.3A

F.3.4 Sub-Objective: An adequate records management program exists to assure that all important documents, records and related information is maintained current and readily retrievable.

Criteria:

1. The records management program defines responsibilities for determining what documents will be controlled in a system, methods to be used for acquisition, identification, storage, retention, and retrieval of documents and controls to be exercised for changes, distribution and removal.

2. The records management program scope includes receipt or preparation, review and approval, and distribution of documents generated externally and internally in a timely manner.

3. The records management program includes processes, interfaces and responsibilities for controlling design bases and technical documents such as calculations, specifications, drawings, vendor manuals, records of maintenance, test results, etc.

4. Necessary documents are kept current and legible and are either available at appropriate plant locations or can be provided in a timely manner.

5. A system exists either as part of the overall records management program, or separately, to manage the experimental data obtained during the bin scale test phase. This system should ensure chain of custody from Sandia to appropriate entities within DOE and/or Westinghouse, as well as all appropriate measures to ensure integrity of experimental data.

Approach:

1. Review the applicable sections of the FSAR and WIPP Quality Assurance Manuals and the site programs and procedures which define their records management program. Verify that program responsibilities are assigned and processes are defined and communicated. Interview cognizant managers and tour records management facilities to determine their criteria for success, results of most recent performance assessments, and that the records management program elements are functioning.

2. Through interviews and discussions with records management personnel and a random sampling of at least

ten document requests by ORR members, half internal documents and half externally generated documents, verify that the document control centers can retrieve documentation satisfactorily.

3. Review records management program and implementing procedures in engineering, maintenance, operations and materials management to ensure responsibilities and processes are documented for controlling technical documentation. Sample the efficiency of the system by selecting one system important to safe waste handling and requesting at least fifteen documents associated with design, procurement, construction, maintenance and operability determinations of one or two significant equipment in that system.

   Interview records management personnel to determine if problems or delays are experienced in documenting revisions to drawings and specification and completion of documentable operations or maintenance activities.

4. Inspect the documents provided in the sample test (approach 3) for legibility and currency. Review the selected equipment for pending and recently completed modifications and determine the currency of the associated drawings provided. Assess the timeliness of the three most recent maintenance or operating activities documented with the work control center records.

   Interview at least three operating or maintenance supervisors to assess their satisfaction with the distribution of technical documentation.

5. Review and inspect the system for obtaining, recording, transmitting and transferring experimental data from the Bin tests. Assure there are procedures to protect the integrity of the data.

Basis:

An effective records management program is necessary to ensure that proper information is available for planning, decision-making and performance audits in modern processing facilities. Timeliness and availability of records, especially technical documentation, is important for ensuring the safety and health of workers and protection of the environment.

References:

INPO 90-015 Performance Objectives and Criteria for Operating and New-Term Operating License Plants, August 1990.

F.4 Objective: A program has been established to identify, evaluate and resolve recommendations and findings made by oversight groups, official review teams and audit organizations.

F.4.1 Sub-Objective: A program for identifying, reviewing and cataloging deficiencies or recommendations is established and adequately implemented.

Criteria:

1. Administrative procedures exist which establish a system for identifying, reviewing and documenting deficiencies resulting from all official reviews and audits of WIPP activities.

2. The corrective action procedures and policies, that are used at the facility, are current and up-to-date.

Approach:

1. Perform a review of the existing administrative procedures for identifying deficiencies or recommendations resulting from all audits/surveillance's, TSAs, and other overview group evaluations. Determine if the procedures have been properly implemented.

2. Select a large sample of review findings from completed reports to assure items have been identified, reviewed and documented in the program.

Basis:

Experience in the DOE and Commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for corrective action and follow-up systems. DOE 5700.6B requires formal application of quality assurance requirements, including assessment against recognized standards. DOE 5700.6B also states that NQA-1 is the preferred standard for quality assurance for nuclear facilities. In addition DOE 5820.2A requires NQA-1 for waste transportation activities. Additionally, DOE 4700.1 and industry practices on configuration management will be considered during this evaluation.

References:

DOE 4700.1, Project Management System, March 6, 1987.

DOE 5700.6B, Quality Assurance, March 28, 1990.

DOE 5820.2A, Radioactive Waste Management, September 26, 1988.

ASME/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

4.2 Sub-Objective: A system for prioritizing and tracking corrective actions and recommendations is established.

Criteria:

1. Administrative procedures are sufficient and effective for prioritizing and tracking deficiencies identified by internal and external overview and audit groups.

2. The corrective action procedures(s) and policies are current and up-to-date.

Approach:

1. Select a large sample of past deficiencies identified by previous overview and audit groups and determine if proper root cause analysis has been performed, and whether corrective action items have been prioritization and are being tracked by responsible individuals.

2. Perform a review of the procedures that control corrective action prioritization and tracking and assure implementation by sampling procedures in the work place to assure the latest revisions are being implemented.

Basis:

Experience in the DOE and Commercial nuclear industry is that quality assurance program elements are sometimes not fully addressed to implement effective QA Programs. Documentation is generally weak, as well as, controls for corrective action and follow-up systems. DOE 5700.6B requires formal application of quality assurance requirements, including assessment against recognized standards. DOE 5700.6B also states that NQA-1 is the referred standard for quality assurance for nuclear facilities. In addition DOE 5820.2A requires NQA-1 for waste transportation activities. Additionally, DOE 4700.1 and industry practices on configuration management will be considered during this evaluation.

References:

DOE 4700.1, Project Management System, March 6, 1987.

DOE 5700.6B, Quality Assurance, March 28, 1990.

DOE 5820.2A, Radioactive Waste Management, September 26, 1988.

ASME/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989.

F.4.3 Sub-Objective: A program exists to track and resolve all remaining issues that must be resolved prior to initiation of the WIPP Test Phase of Operations.

Criteria:

1. Administrative procedures for WIPP corrective action tracking systems provide the ability for a global overview of all deficiencies/issues and corrective actions associated with the initiation of the WIPP Test Phase.

2. Management has assigned responsibilities and developed schedules for developing and implementing corrective actions necessary to resolve WIPP Test Phase start up issues. Administrative procedures are in place to assure all necessary corrective actions have taken place prior to initiation of WIPP Test Phase startup.

Approach:

1. Review relevant procedures for deficiency identification and corrective action tracking to assess constraints on their purpose or jurisdiction and identify personnel responsible for managing these systems. Interview cognizant system managers to determine the ability to extract and/or consolidate data from active files and inactive history associated with the WIPP Test Phase Start-up.

2. Review a random selection of ten high priority corrective action plans from 1989-1990 to assess the management commitment and effectiveness in correcting deficiencies in a timely manner. Interview cognizant managers from WIPP, WPO, & DOE-AL to assess their plans for identifying and tracking corrective actions necessary to resolve WIPP Test Phase Start-up issues. Assess the compatibility of closure definitions, interfacing support requirements, schedule and responsibility conflicts between the three groups. Assess the ability of management to meet the plans discussed or developed prior to startup.

Basis:

Industry experience shows that the ability of management to effectively identify, prioritize, and track deficiencies and to develop and control proper corrective actions through closure is an accurate gauge of the mission readiness of their organization. Although most large organizations operate under well documented quality assurance plans, only the better organizations effectively implement this vital portion of the QA plan.

References:

DOE 5700.6B, Quality Assurance, March 28, 1990.

ASME/ANSI/NQA-1, Quality Assurance Program Requirements for Nuclear Facilities, 1989