



Westinghouse

Government Services Group



WASTE ISOLATION DIVISION

P.O. BOX 2078
CARLSBAD, NEW MEXICO 88221
PHONE: (505) (505) 234-8618

OP:00:01079

UFC:1200.00

November 7, 2000

Mr. S. Zappe
New Mexico Environmental Department
P. O. Box 26110
Santa Fe, NM 87602

Subject: TRANSMITTAL OF WIPP FINAL OCCURRENCE REPORTS

Dear Mr. Zappe:

Enclosed are the WIPP Final Occurrence Reports, ALO—WWID-WIPP-1999-0008, ALO—WWID-WIPP-1999-0007, ALO—WWID-WIPP-1999-0006, ALO—WWID-WIPP-2000-0001, ALO—WWID-WIPP-2000-0002, and ALO—WWID-WIPP-2000-0003, which is being sent to you at the request of the Department of Energy Carlsbad Field Office. Please place this report in your reading room.

If you have any questions regarding this information, please contact Mr. J. R. Bennett at (505) 234-8931.

Sincerely,

M. M. Bowditch, Manager
Document Services

MMB:ljt

Enclosure

001110





Westinghouse

Government Services Group

WASTE ISOLATION DIVISION

P.O. BOX 2078
CARLSBAD, NEW MEXICO 88221
PHONE: (505) 234-7200 FAX: (505) 234-7083

OP:00:00103

UFC:1000.00

October 24, 2000

Mr. D. S. Hurtt, Team Leader
Office of Public Affairs
Carlsbad Area Office
U.S. Department of Energy
P.O. Box 3090
Carlsbad, NM 88221-3090

Subject : REQUEST FOR REVIEW AND TRANSMITTAL OF WIPP FINAL OCCURRENCE
REPORTS APPROVED BY DOE FACILITY REPRESENTATIVE

Reference: DOE Memorandum WIPP:WPSO:T&JHM 92:0460 from Mr. M. H. McFadden, to Mr. R. D. Boyer, dated May 15, 1992, subject: Placement of Final Occurrence Reports in Local Public Reading Rooms

DOE Memorandum WIPP:WPSO:PA:PBS 93-0121 from Ms. P. Baratti-Sallani to Mr. R. D. Boyer, dated September 28, 1993, subject: Distribution of Final Occurrence Reports to WIPP Reading Rooms

Dear Mr. Hurtt:

The DOE Facility Representative has approved the attached WIPP Final Occurrence Reports. Accordingly, the reports are being sent for your review and approval for distribution to the WIPP Public Reading Rooms. To comply with reporting requirements as specified in DOE Order 232.1A, *Occurrence Reporting and Processing of Operations Information*, following your approval the reports will be delivered to the WIPP Public Reading Rooms as soon as practical.

If you have any questions, please call Mr. Joe Franco at Extension 8641.

Sincerely,

D. P. Reber, Manager
Operations

APPROVED

D. S. Hurtt, Team Leader
Office of Public Affairs

JRB:jlmm

Attachment(s)

cc: (without attachments)
B. E. Smith, CAO
D. Galbraith, CAO

ALO--WWID-WIPP-1999-0008

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-1999-0008

HYDROCHLORIC ACID SPILL

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 12/09/1999 | 09:32 (MTZ) |
| Initial Update: | 12/14/1999 | 08:58 (MTZ) |
| Latest Update: | 01/28/2000 | 10:02 (MTZ) |
| Final: | 01/28/2000 | 15:10 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences:** 1**Original OR:**

5. Division or Project: WIPP**6. Secretarial Office:** EM - Environmental Management**7. System, Bldg., or Equipment:** HCL acid container.**8. UCNI?:** No**9. Plant Area:** General Facility**10. Date and Time Discovered:** 12/08/1999 14:30 (MTZ)**11. Date and Time Categorized:** 12/08/1999 16:00 (MTZ)**12. DOE Notification:****13. Other Notifications:**

| Date | Time | Person Notified | Organization |
|------------|-------------|-----------------|--------------|
| 12/08/1999 | 14:35 (MTZ) | [REDACTED] | DOE-CAO |

14. Subject or Title of Occurrence:

HYDROCHLORIC ACID SPILL

15. Nature of Occurrence:

03) Personnel Safety
A. Occupational Illness/Injuries

16. Description of Occurrence:

At approximately 1430 on December 8, 1999, an employee was handling a 2.5 liter bottle of 37% HCL solution. While placing the bottle on a transportation cart, it was dropped and broken. The resultant spill was entirely contained within the catch basin which is an integral part of the cart. Nine employees in or near the vicinity of the spill were exposed to the fumes from the spilled acid. No one suffered from direct contact with the acid.

17. Operating Conditions of Facility at Time of Occurrence:

Does not apply.

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The general area was evacuated. The appropriate incident response procedures were invoked. The response team neutralized the acid and packaged the materials for disposal as site-generated hazardous waste. By approximately 1800, the area had been cleared, ventilated, and incident response terminated.

All nine personnel who had been exposed to the fumes received initial evaluation by the site medical facility nurses. The maximally exposed individual complained of mild respiratory tract irritation and watering eyes. As a precautionary measure, all nine personnel were then transported to the hospital in town for further evaluation. No one was admitted for in-patient care.

20. Direct Cause:

- 3) Personnel Error
 - A. Inattention to Detail

21. Contributing Cause(s):

- 3) Personnel Error
 - C. Communication Problem
- 4) Design Problem
 - A. Inadequate Work Environment

22. Root Cause:

- 3) Personnel Error
 - B. Procedure Not Used or Used Incorrectly

23. Description of Cause:

The root cause of the event was a failure by the employee to follow standard laboratory practices and procedures. The employee used an approved transport container for three bottles of acid, and then attempted to place three more bottles in a cardboard box which had been placed on the cart. One of the latter three bottles slipped from the employee's hand and struck a bottle already in the cardboard box. The bottle broke and spilled acid into the catchment basin which is an integral part of the transportation cart.

The direct cause relates to the employee's failure to apply proper attention to the details of the task.

The consequences of the spill were amplified by two significant contributing factors: 1)The employee attempted to clean up the spill individually and did not immediately inform the Central Monitoring Room of the event as required by facility procedures. 2)The involved hazardous materials locker was located in a high-traffic breezeway between two buildings. Several doors lead into the breezeway from work spaces, contributing to the exposure of eight additional employees to the acid fumes.

24. Evaluation (by Facility Manager/Designee):

Initial failure by the employee to promptly notify the Central Monitoring Room (CMR) of a hazardous material spill delayed the deployment of response teams. Another employee incidentally entered the area and determined there was a problem - acid fumes were heavy in the area, the involved employee's effort to soak up the acid with "spill pillows" was resulting in high exposure for that employee, and no one had been notified. This second employee ensured the CMR was called, and as other passers-by entered the affected area, directed them to block access doors and verbally inform other employees in the immediate area to evacuate. From the time the CMR was notified, follow-up response to the event was appropriate and in accordance with established procedures.

Further medical evaluation of the nine involved individuals was conducted by the contract physician on 12-13-1999. This evaluation resulted in one lost work day for one individual. That individual was determined to have eye irritation which, in the opinion of the physician, warranted a day off work. The individual returned to work after one lost day.

The local newspaper, Carlsbad Current Argus, published a small article about the event in its December 9th edition. The article is factual, neutral, and should not result in embarrassment or discredit to WIPP.

25. Is Further Evaluation Required?: No**26. Corrective Actions**

(* = Date added/revised since final report was approved.)

1. Evaluate the training program for laboratory workers to determine if it adequately addresses the process and precautions related to handling and transporting hazardous material.
Action completed with the determination that the program is adequate.

| | |
|---|------------------------------------|
| Target Completion Date: 01/10/2000 | Completion Date: 01/10/2000 |
|---|------------------------------------|
2. The involved worker will be retrained in accordance with the defined laboratory training program.

| | |
|---|-------------------------------------|
| Target Completion Date: 03/15/2000 | *Completion Date: 02/21/2000 |
|---|-------------------------------------|
3. Have an independent laboratory organization perform an evaluation of all WIPP laboratory processes and procedures relative to hazardous materials.

| | |
|---|-------------------------------------|
| Target Completion Date: 03/01/2000 | *Completion Date: 02/04/2000 |
|---|-------------------------------------|
4. Take administrative action to ensure future procurement orders for hazardous materials specify containers which are coated with plastic or are similarly protected to minimize breakage.

| | |
|---|------------------------------------|
| Target Completion Date: 12/15/1999 | Completion Date: 12/09/1999 |
|---|------------------------------------|
5. Purchase a transportation cart designed to more effectively contain and cushion hazardous materials while handling them.

| | |
|---|------------------------------------|
| Target Completion Date: 01/10/2000 | Completion Date: 01/05/2000 |
|---|------------------------------------|
6.

| | |
|--|--|
| | |
|--|--|

Relocate the hazardous materials storage lockers to a more suitable, low traffic area of the facility.

Target Completion Date: 01/14/2000

Completion Date: 01/14/2000

7. Update the facility chemical hygiene plan.

Target Completion Date: 03/01/2000

*Completion Date: 02/28/2000

27. Impact on Environment, Safety and Health:

This event resulted in one lost work day when the contract physician determined eye irritation in one individual warranted a day off work.

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Evaluation of traffic patterns in relation to hazardous materials storage locations should receive higher priority than has been the practice. Release of such materials in a high-traffic area can result in exposures to incidental passers-by which would be otherwise avoided.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

The FR agrees with the direct cause cited. Based upon the information available and facts presented in the root cause analysis of the hydrochloric acid spill, the corrective actions planned and those implemented by the M&OC are reasonable and should preclude recurrence of similar events. M&OC personnel initial, immediate responses to this incident was exceptional.

Entered by: 

Date: 01/28/2000

ALO--WWID-WIPP-1999-0007

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-1999-0007

FAILURE OF MONTHLY SHIFT TO FILTRATION OPERABILITY TEST

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 11/10/1999 | 15:34 (MTZ) |
| Initial Update: | 12/07/1999 | 08:55 (MTZ) |
| Latest Update: | 12/07/1999 | 08:55 (MTZ) |
| Final: | 12/30/1999 | 13:26 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences:** 1**Original OR:**

5. Division or Project: WIPP

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Underground Ventilation Filtration System

8. UCNI?: No

9. Plant Area: UG Ventilation

10. Date and Time Discovered: 11/10/1999 08:00 (MTZ)

11. Date and Time Categorized: 11/10/1999 09:30 (MTZ)

12. DOE Notification:

13. Other Notifications:

| Date | Time | Person Notified | Organization |
|------------|-------------|-------------------------|--------------|
| 11/10/1999 | 08:05 (MTZ) | Facility Representative | DOE-CAO |

14. Subject or Title of Occurrence:

FAILURE OF MONTHLY SHIFT TO FILTRATION OPERABILITY TEST

15. Nature of Occurrence:

01) Facility Condition
C. Safety Status Degradation

16. Description of Occurrence:

At approximately 1130 on November 9, 1999, Facility Operations Personnel attempted to perform the monthly operational test of the shift to filtration function of the underground ventilation system. This test failed when the Exhaust Filter Building isolation (inlet) damper failed to open.

17. Operating Conditions of Facility at Time of Occurrence:

In Waste Storage/Disposal Mode in underground.

18. Activity Category:

06 - Facility/System/Equipment Testing

19. Immediate Actions Taken and Results:

At the time of the test failure, a normal tagout/lockout was in place, isolating control power to the 41-B-700C underground ventilation fan. The Facility Shift Manager (FSM) knew the location and nature of the tagout/lockout, and further knew this was the only abnormal plant condition existing at the time. The FSM assumed the deenergized control power was involved in the test failure in some way and directed that personnel working under the tagout/lockout place their work in a safe configuration so the tags could be cleared.

Engineering personnel were summoned to assist in a review of control logic diagrams associated with the shift-to-filtration test circuit. A review of the drawings was completed at approximately 1345 and confirmed that the deenergized control power to the 700C fan did in fact create a condition which effectively disabled the shift-to-filtration function of the ventilation system.

After clearing the tags and reenergizing the fan 700C control power, the shift-to-filtration function was tested again at approximately 1530. This test confirmed the function was operational as the ventilation system properly shifted into filtration mode.

The system has remained in an operable condition and a thorough evaluation of the event was begun to determine if an Unreviewed Safety Question existed.

20. Direct Cause:

- 4) Design Problem
 - B. Inadequate or Defective Design

21. Contributing Cause(s):**22. Root Cause:**

- 4) Design Problem
 - B. Inadequate or Defective Design

23. Description of Cause:

As the underground ventilation electrical control system was originally designed and installed, deenergizing control power to any one of the three normal underground ventilation fans creates a condition which disables the shift-to-filtration function of the underground ventilation system. The original electrical systems designers apparently did not relate this interconnection of control functions to a potential limitation in operational flexibility. Having had no previous experience with this problem, current Operations and Engineering personnel were generally unaware of this feature of the electrical controls.

24. Evaluation (by Facility Manager/Designee):

The WIPP Safety Analysis Report (SAR) establishes that the underground ventilation system shift-to-

filtration function supports the "defense in depth" philosophy, and is not defined as a "safety SSC". The WIPP Technical Safety Requirements document (TSR) states that if a Defense-In-Depth SSC fails to operate or becomes unavailable during Waste Handling operations, those operations shall be stopped and the facility placed in the Waste Storage/Disposal Mode. Further, when in Storage/Disposal Mode, no specific requirements are identified in the event of Defense-In-Depth SSC failures, other than to initiate corrective actions in a timely manner.

Until the USQ evaluation had been completed and determined that a USQ did not exist, the Facility Manager directed that waste handling, scheduled to begin at 0800 on November 10, be placed on hold. The underground remained in Waste Storage/Disposal Mode. That USQ evaluation was completed at approximately 1030 on November 10, 1999. After this confirmation that a USQ did not exist, Waste Handling Mode was again established in the underground. This self-imposed delay of waste handling operations lasted for approximately 2 1/2 hours. This facility operations delay meets the requirements of ORPS criteria 1.C.ON(1). This delay has no appreciable effect of the overall facility schedule and no effect whatever on waste receipt schedules.

A standing Shift Instruction was written, prohibiting tagout/lockout of the control power for any of the three normal underground ventilation fans unless the facility is first placed in the Waste Storage/Disposal Mode. The review of circuit design shows that this unexpected condition (disabling shift-to-filtration functions) exists with loss of control power to any one of the fans. This apparent circuit design flaw had never been noted before this event wherein a deenergized fan control power circuit and the monthly functional test were coincidental.

Engineering analysis is ongoing, with the goal of defining a technically valid change in circuit design which will allow the control power to be deenergized to any of the fans, and still maintain operability of the shift-to-filtration system.

UPDATE CONCURRENT WITH FINAL REPORT SUBMITTAL: Engineering personnel have identified a simple change in circuit design which will eliminate this problem. An Engineering Change Proposal and Change Order have been prepared, evaluated, and approved to install a key-operated switch in the control circuit. When operated, this switch will bypass a contactor and allow the shift-to-filtration function to operate as designed when control power to any of the fans has been deenergized.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. Identify a technically valid change in circuit design which will allow the control power to be deenergized to any of the fans and still maintain operability of the shift-to-filtration system.

| | |
|---|------------------------------------|
| Target Completion Date: 12/06/1999 | Completion Date: 11/23/1999 |
|---|------------------------------------|
2. Implement design changes required to ensure shift-to-filtration function operability when control power to a fan is deenergized.

| | |
|--|-------------------------------------|
| *Target Completion Date: 03/15/2000 | *Completion Date: 03/15/2000 |
|--|-------------------------------------|
3. Issue necessary operating procedure changes to address new circuit design. Cancel existing standing order which prohibits deenergizing fan control power unless the facility is in the Waste

| | |
|-------------------------------------|------------------------------|
| Storage/Disposal Mode. | |
| *Target Completion Date: 03/17/2000 | *Completion Date: 04/12/2000 |

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

None

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

Overall, the M&OC's response, root cause analysis, evaluation and corrective actions changes planned or taken to implement design and procedure changes to ensure operability of shift-to-filtration function described are reasonable.

Entered by: [REDACTED]

Date: 12/30/1999

35. DOE Program Manager Input:

36. Approvals:

Approved by: [REDACTED] Facility Manager/Designee

Date: 12/07/1999

Telephone No.: (505) [REDACTED]

Approved by: [REDACTED] Facility Representative/Designee

Date: 12/30/1999

Telephone No.: (505) [REDACTED]

Approved by: Approval delegated to FR

Date: 12/30/1999

Telephone No.:

ALO--WWID-WIPP-1999-0006

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: SURFACE OPERATIONS MANAGEMENT ASST.

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-1999-0006

RELATED CONTINUOUS AIR MONITOR EVENTS

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 10/11/1999 | 07:40 (MTZ) |
| Initial Update: | 12/14/1999 | 09:42 (MTZ) |
| Latest Update: | 12/14/1999 | 09:42 (MTZ) |
| Final: | 12/30/1999 | 11:34 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences:** 1**Original OR:**

5. Division or Project: WIPP

6. Secretarial Office: EM - Environmental Management

7. System, Bldg., or Equipment: Continuous Air Monitors (radiological)

8. UCNI?: No

9. Plant Area: Facility-wide

10. Date and Time Discovered: 10/08/1999 11:00 (MTZ)

11. Date and Time Categorized: 10/08/1999 11:30 (MTZ)

12. DOE Notification:

13. Other Notifications:

| Date | Time | Person Notified | Organization |
|------------|-------------|-------------------------|--------------|
| 10/08/1999 | 11:45 (MTZ) | FACILITY REPRESENTATIVE | DOE/CAO |

14. Subject or Title of Occurrence:

RELATED CONTINUOUS AIR MONITOR EVENTS

15. Nature of Occurrence:

- 10) Cross-Category Items
 - A. Collectively Significant Related Occurrences

16. Description of Occurrence:

Two individual events involving Continuous Air Monitors (CAM) were reviewed and determined to have common aspects related to their initiation. On August 17, 1999 during operational check and alignment activities, a CAM alarm was inadvertently initiated. This CAM monitors exhaust air from the underground waste storage area and the alarm caused an automatic shift of the underground ventilation system into the filtered mode. This ventilation system operating mode causes underground exhaust air to be routed through HEPA filters before exhausting to the environment. Root cause analysis of this event determined that a procedure violation caused the CAM alarm activation. Because this procedure violation did not result in an adverse effect on performance, safety, or reliability (the ventilation system responded as designed), the event was not classified as reportable under DOE Order 232.1A (ORPS). Corrective actions were developed and implemented.

On August 27, 1999, an alarm (later determined to be caused by radon) on this same CAM resulted in automatic shift of underground ventilation to filtration mode. Shortly after the event, the system was taken out of filtration mode and placed into "bypass" mode. This recovery was made in violation of the

governing procedure. Once again, no adverse effect on performance, safety, or reliability was involved.

Examination of the causal factors from the investigative reports on these two events have a common factor of procedure violation. While the events share that commonality, further consideration of the two events has highlighted a more fundamental issue, an issue which is the basis for initiating this occurrence report.

The focus of further investigation and discussion is the common failure of operating personnel to comply with procedures regarding CAMs. The CAM system is not designated as Safety Class or Safety Significant, but forms a fundamental part of the Defense-in-Depth approach used at WIPP to ensure personnel and environmental protection. WIPP management believes that further investigation is warranted, and appropriate action be taken to reinforce procedural compliance in general, and the contribution the CAM system provides to our safety philosophy in particular.

17. Operating Conditions of Facility at Time of Occurrence:

Routine waste disposal mode, maintenance checks in progress

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

Procedural modifications have been made to clarify and reinforce requirements associated with CAM operation and recovery of facility systems after CAM alarms. Shift instructions and crew meetings have been held to reinforce expectations of strict procedural compliance.

20. Direct Cause:

- 3) Personnel Error
 - B. Procedure Not Used or Used Incorrectly

21. Contributing Cause(s):

- 2) Procedure Problem
 - A. Defective or Inadequate Procedure

22. Root Cause:

- 6) Management Problem
 - E. Policy Not Adequately Defined, Disseminated, or Enforced

23. Description of Cause:

Findings from the Root Cause Analysis indicate causal factors as follows:

ROOT CAUSE - Facility Operations and Radiological Control management has not consistently enforced a strong level of compliance to Conduct of Operations requirements in the areas of procedural compliance, procedure adequacy, or control of processes.

DIRECT CAUSE - Facility Operations and Radiological Controls personnel, partly as a result of not understanding management expectations, do not consistently make operational decisions that coincide with procedures or conduct of operations requirements.

CONTRIBUTING CAUSES - Some Emergency Response procedures have not received required periodic reviews. As a result, appropriate changes are not always made to reflect current operating philosophy.

24. Evaluation (by Facility Manager/Designee):

The basic causes of the two events are related to Conduct of Operations principles. Remedial actions have served to highlight the importance of these principles. Consideration of necessary longer term actions is ongoing.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

- | | | |
|----|---|------------------------------|
| 1. | A Conduct of Operations Team will be established under the guidance of the Operations Department manager to assist the operating groups in implementation and consistent application of Conduct of Operations principles. | |
| | Target Completion Date: 12/31/1999 | Completion Date: 12/30/1999 |
| 2. | The initiation of a CONOPS Team and basic CONOPS principles will be communicated to all employees at an "all-hands" meeting. | |
| | Target Completion Date: 12/17/1999 | Completion Date: 12/15/1999 |
| 3. | Emergency response procedures will be reviewed and changes submitted as necessary to ensure the procedures clearly specify expected operator actions. | |
| | Target Completion Date: 12/31/1999 | Completion Date: 12/30/1999 |
| 4. | Develop and implement a formal program to qualify personnel as Radiological Control Engineers. | |
| | Target Completion Date: 07/01/2000 | *Completion Date: 06/28/2000 |

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Training and enforcement of Conduct of Operations principles must be a continuing process, and must receive increased attention by facility management.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

The FR agrees that the M&OC's continued emphasis on CONOPS integrated at all levels of the organization will result in continued safe operations and adherence to procedural compliance by all personnel. Corrective actions, planned and those completed, are timely and reasonable.

Entered by: [REDACTED]

Date: 12/30/1999

35. DOE Program Manager Input:

36. Approvals:

Approved by: [REDACTED] Facility Manager/Designee

Date: 12/14/1999

Telephone No.: (505) [REDACTED]

Approved by: [REDACTED] Facility Representative/Designee

Date: 12/30/1999

Telephone No.: (505) [REDACTED]

Approved by: Approval delegated to FR

Date: 12/30/1999

Telephone No.:

ALO--WWID-WIPP-2000-0001

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-2000-0001

Related Radioactive Material Entry Occurrences

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 05/05/2000 | 10:35 (MTZ) |
| Initial Update: | 05/19/2000 | 11:20 (MTZ) |
| Latest Update: | 08/30/2000 | 12:20 (MTZ) |
| Final: | 09/05/2000 | 05:28 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences:** 1**Original OR:**

5. Division or Project: WID/WIPP**6. Secretarial Office:** EM - Environmental Management**7. System, Bldg., or Equipment:** 411 - Waste Handling Building - Radioactive Materials Area**8. UCNI?:** No**9. Plant Area:** CH Bay**10. Date and Time Discovered:** 05/03/2000 10:37 (MTZ)**11. Date and Time Categorized:** 05/04/2000 10:40 (MTZ)**12. DOE Notification:****13. Other Notifications:****14. Subject or Title of Occurrence:**

Related Radioactive Material Entry Occurrences

15. Nature of Occurrence:

10) Cross-Category Items

A. Collectively Significant Related Occurrences

16. Description of Occurrence:

On April 26, 2000, at approximately 0755 two individuals entered the posted Radioactive Materials Area (RMA) of the Waste Handling Building. One individual was wearing his Thermoluminescent dosimeter (TLD) and an Electronic Personal Dosimeter (EPD), and was signed in to the appropriate Radiation Work Permit. In accordance with the requirements of the general RWP for non-radworker trained personnel, he did not have the additional TLD required for the individual he was escorting. At approximately 0815 the two individuals were observed by Waste Handling Operations and Radiological Controls personnel who were working on the East Dock. The individuals were directed to leave the RMA immediately. The Radiological Controls Manager notified the Central Monitoring Room of the incident at 1115. The Facility Manager Designee was notified and initiated an investigation of the event. A critique of the incident with all involved personnel has been conducted and statements from the individuals have been submitted. The incident was initially determined to be non reportable per the ORPS criteria based on the initial information, but upgrading to a reportable condition was not precluded should additional information from the continuing investigation of the event warrant it. A Corrective Action Request (CAR) was initiated to formalize the evaluation of the incident and to generate and track corrective actions that may result from the root cause analysis.

On May 3rd at 1037 notification was made to the CMR that a WID employee, whose Radiation Worker Annual Refresher Training had expired on April 30, 2000, entered the RMA on May 1st and May 3rd. A

review was conducted of the RMA entry log to verify the number and times the individual made entry into the RMA. The review confirmed that the individual entered the RMA on May 1st for approximately 30 minutes to observe waste processing and again on May 3rd for approximately 1 hour and 10 minutes to observe training activities. He was instructed not to enter RMAs until the required training was completed and the individual's TLD was removed and returned to the Dosimetry Lab. The TLD will be retained until his training is completed. The Waste Handling Manager notified the Central Monitoring Room of the incident at 1037. The Facility Manager Designee was notified and initiated an investigation of the event. A critique of the incident with all involved personnel has been conducted and statements from the individuals have been submitted. The incident was initially determined to be non reportable per the ORPS criteria based on the initial information, but upgrading to a reportable condition was not precluded should additional information from the continuing investigation of the event warrant it. A CAR was initiated to formalize the evaluation of the incident and to generate and track corrective actions that may result from the root cause analysis.

On May 4th the FMD determined that the two events combined warranted an ORPS categorization. At 1040 on May 4, 2000 the events were categorized as Cross-Category Items; Potential Concerns/Issues; Off-Normal; Other events as determined by the FM/FMD.

17. Operating Conditions of Facility at Time of Occurrence:

In Waste Handling Mode with waste processing in progress in the CH Bay

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

In response to the event on 4/26/2000 the personnel were immediately removed from the RMA. The TLD for the Escort was removed, read, and retained by the Dosimetry Lab. The personnel were directed to provide a statement to the FMD. A meeting was conducted with all involved individuals to collect the facts about the event. The Radiation Work Permits involved were reviewed and were found to be proper. A corrective action request was generated. Access into the RMA has been denied for the involved personnel.

In response to the event on 5/03/2000 the person was directed to not enter the RMA and his TLD was removed and retained by the Dosimetry Lab. The Responsible Manager notified the CMR and verified that all of his personnel were current on training. Technical training provided a list to Dosimetry of the personnel whose training had lapsed and their TLDs were removed from service. A meeting was conducted with all involved individuals to collect the facts about the event. A corrective action request was generated. Access into the RMA has been denied for the involved individual until the required training has been completed.

20. Direct Cause:

3) Personnel Error

B. Procedure Not Used or Used Incorrectly

21. Contributing Cause(s):

- 5) Training Deficiency
 - A. No Training Provided

22. Root Cause:

- 6) Management Problem
 - A. Inadequate Administrative Control

23. Description of Cause:

The causes of the events were derived from a Root Cause Analysis performed by a selected Root Cause Analysis Team (RCAT) in accordance with WIPP procedure.

In the first event, the root cause was failure to adequately control access/entry into Radiological Materials Areas; inadequate administrative control. The RCAT determined that there was failure to adequately provide controlled access/entry into Radiological Areas and ensure RCT personnel fully understood the processes and procedures in place for access/entry of radiation workers and visitors.

In the second event, the root cause was failure to provide an adequate process for removal of expired radiation worker's TLDs; inadequate administrative control. The RCAT determined that no formal method/process was in place for the removal or collecting of TLDs from radiation workers whose Radiological Worker Training had lapsed.

Recommended corrective actions were identified in the Root Cause Analysis and evaluated by the responsible management. The following are the corrective actions developed to address the issues identified in the Root Cause Analysis:

- 1) The dosimeters of the involved workers were withdrawn, pending completion of remedial training. For the first event, this involved the two personnel attempting to enter the RMA. For the second event, this involved the worker whose qualification expired. This action is complete. All involved personnel have completed the required remedial training.
- 2) The individuals having oversight responsibilities were counseled concerning their actions and responsibilities. For the first event, this involved the RCT. For the second event, this involved the employee's manager. This action is complete.
- 3) The site training records were reviewed to identify all other site personnel whose radiological training had expired. This action is complete. The dosimeters of all such identified personnel were removed from the storage rack in the gatehouse and returned to the dosimetry department.
- 4) A letter was issued from the WID Radiation Safety and Emergency Management Manager to all WID radiological workers and their associated management. The letter re-emphasized responsibilities and requirements concerning radiological controls, and requested each manager to conduct a work place meeting with their workers to review this information prior to entry into an RMA. This action is

complete.

5) The WID General Manager conducted an all-hands meeting on May 5th which included a review of proper conduct of operations and responsibilities concerning radiological controls. This action is complete.

6) The on-the-job refresher training provided to Subject Matter Experts has been modified to clarify that no qualification grace period exists. This action is complete.

7) The policy concerning dosimetry required to enter the RMA has been re-evaluated. WIPP reinstated the requirement for each individual to wear a separate dosimeter. This change provides consistency with other DOE sites and simplifies the entry process. The procedure that specifies the requirements for visitor dosimetry has been revised. During the revision process for the procedure, written direction was issued from the Radiation Safety and Emergency Management Manager to the Dosimetry team lead directing the interim implementation of this change.

8) A system has been developed and implemented to remove TLDs from service once the associated qualification has expired. The WID Dosimetry Department obtains written notification from WID Training concerning employees whose radiological qualifications will expire. Using this information, Dosimetry removes the associated TLDs from the rack in the gatehouse prior to the first work day of the new month. This action is complete.

24. Evaluation (by Facility Manager/Designee):

The combined events warrant a categorization of off normal.

The categorization was changed to match the occurrence. The categorization was updated from Cross-Category Items Potential Concerns/Issues Off-Normal to Cross-Category Items Collectively Significant Related Occurrences Off-Normal.

06/26/00 - The Root Cause Analysis (RCA) is in its final stages of completion. The corrective actions related to the RCA are to be established by 7/31/00. The update from ORPS will follow the RCA corrective actions.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

- | | |
|----|---|
| 1. | The dosimeters of the involved workers were withdrawn, pending completion of remedial training. For the first event, this involved the two personnel attempting to enter the RMA. For the second event, this involved the worker whose qualification expired. |
| | Responsibility: WID Radiation Safety and Emergency Management Manager. |
| | Target Completion Date: 05/04/2000 |
| | Completion Date: 05/04/2000 |

2. The individuals having oversight responsibilities were counseled concerning their actions and responsibilities. For the first event, this involved the RCT. For the second event, this involved the employee's manager.

Responsibility: WID Radiation Safety and Emergency Management Manager and WID Operations Manager

| | |
|---|------------------------------------|
| Target Completion Date: 07/19/2000 | Completion Date: 07/19/2000 |
|---|------------------------------------|
3. The site training records were reviewed to identify all other site personnel whose radiological training had expired.

Responsibility: WID Radiation Safety and Emergency Management Manager.

| | |
|---|------------------------------------|
| Target Completion Date: 05/04/2000 | Completion Date: 05/04/2000 |
|---|------------------------------------|
4. A letter was issued from the WID Radiation Safety and Emergency Management Manager to all WID radiological workers and their associated management. The letter re-emphasized responsibilities and requirements concerning radiological controls, and requested each manager to conduct a work place meeting with their workers to review this information prior to entry into an RMA.

Responsibility: WID Radiation Safety and Emergency Management Manager.

| | |
|--|------------------------------------|
| *Target Completion Date: 05/04/2000 | Completion Date: 05/04/2000 |
|--|------------------------------------|
5. The WID General Manager conducted an all-hands meeting on May 5th which included a review of proper conduct of operations and responsibilities concerning radiological controls.

Responsibility: WID General Manager.

| | |
|---|------------------------------------|
| Target Completion Date: 05/04/2000 | Completion Date: 05/04/2000 |
|---|------------------------------------|
6. The on-the-job refresher training provided to Subject Matter Experts has been modified to clarify that no qualification grace period exists.

Responsibility: WID Technical Training Manager

| | |
|---|------------------------------------|
| Target Completion Date: 07/18/2000 | Completion Date: 07/18/2000 |
|---|------------------------------------|
7. The policy concerning dosimetry required to enter the RMA has been re-evaluated. WIPP reinstated the requirement for each individual to wear a separate dosimeter. The change was incorporated in the WID procedure. This change provides consistency with other DOE sites and simplifies the entry process.

Responsibility: WID Radiation Safety and Emergency Management Manager.

| | |
|---|------------------------------------|
| Target Completion Date: 08/08/2000 | Completion Date: 08/08/2000 |
|---|------------------------------------|
8. A system was developed and implemented to remove TLDs from service once the associated qualification had expired. The WID Dosimetry Department obtains written notification from WID Training concerning employees whose radiological qualifications has expired. Using this information, Dosimetry removes the associated TLDs from the rack in the gatehouse prior to the first work day of the new month.

| |
|---|
| Responsibility: WID Radiation Safety and Emergency Management Manager and WID Training Manager. |
|---|

| |
|------------------------------------|
| Target Completion Date: 05/05/2000 |
|------------------------------------|

| |
|-----------------------------|
| Completion Date: 05/05/2000 |
|-----------------------------|

27. Impact on Environment, Safety and Health:

N/A

28. Programmatic Impact:

N/A

29. Impact on Codes and Standards:

N/A

30. Lessons Learned:

Management emphasis on procedural compliance and posting adherence is necessary to maintain a level of awareness for operations.

31. Similar Occurrence Report Numbers:

1. N/A

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

FR concurs with the managing and operating contractor's (M&OC) immediate and corrective actions taken were reasonable and timely and should prove effective. Continual emphasis by the M&OC on procedural compliance, training requirements, and adherence to postings by all personnel is expected to preclude recurrence of similar type incidents.

Entered by: 

Date: 09/05/2000

35. DOE Program Manager Input:

36. Approvals:

Approved by: [REDACTED] Facility Manager/Designee

Date: 08/30/2000

Telephone No.: (505) [REDACTED]

Approved by: [REDACTED] Facility Representative/Designee

Date: 09/05/2000

Telephone No.: (505) [REDACTED]

Approved by: Approval delegated to FR

Date: 09/05/2000

Telephone No.:

ALO--WWID-WIPP-2000-0002

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-2000-0002

SR-90 Source Not placed back in storage area

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 06/19/2000 | 10:45 (MTZ) |
| Initial Update: | 07/20/2000 | 14:52 (MTZ) |
| Latest Update: | 07/20/2000 | 14:52 (MTZ) |
| Final: | 09/05/2000 | 05:38 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences:** 1**Original OR:**

5. Division or Project: WID/WIPP**6. Secretarial Office:** EM - Environmental Management**7. System, Bldg., or Equipment:** 451 - Support Building - Analytical Lab**8. UCNI?:** No**9. Plant Area:** Analytical Lab**10. Date and Time Discovered:** 06/16/2000 07:46 (MTZ)**11. Date and Time Categorized:** 06/16/2000 09:00 (MTZ)**12. DOE Notification:****13. Other Notifications:****14. Subject or Title of Occurrence:**

SR-90 Source Not placed back in storage area

15. Nature of Occurrence:

01) Facility Condition

D. Loss of Control of Radioactive Material/Spread of Radioactive Contamination

16. Description of Occurrence:

At 0746 on June 16, 2000 the Radiological Control Manager notified the Central Monitoring Room Operator of a Sr-90 radioactive source not in the proper storage place. The source was left in the Analytical Calibration Lab from the swingshift Radiological Control Technician (RCT) and was not placed in the storage safe as required. The swingshift RCT left the site at 0130 on June 16, 2000. At 0738 on June 16, 2000 an on-coming dayshift RCT began operability checks on equipment in the Analytical Calibration Lab when she found the source. She immediately notified her manager. The manager instructed the RCT to place the source in its proper location and to document the event. The manager then notified the Central Monitoring Room Operator.

17. Operating Conditions of Facility at Time of Occurrence:

In Waste Storage Mode. No waste stored on surface.

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The Sr-90 source was immediately placed back in the storage room and in the safe. The RCT who found the source notified the Radiological Control Manager. The Manager discussed the event with the FMD and is going to conduct further investigation.

20. Direct Cause:

- 3) Personnel Error
 - A. Inattention to Detail

21. Contributing Cause(s):

- 3) Personnel Error
 - D. Other Human Error

22. Root Cause:

- 3) Personnel Error
 - A. Inattention to Detail
-

23. Description of Cause:

After review of the event and interview of the Radiological Control personnel involved the Radiological Control Manager and Team Leader it was determined that the root cause of the event was inattention to detail. The person who left the source unattended has over 20 years experience and he understood the process and procedure for source control. The direct cause was not placing the source back in the safe after use, even though the person knew and understood the procedure, inattention to detail. A contributing cause to the event was that the RCT was preparing to leave the next day on a two month leave of absence for medical treatment (out of the state of New Mexico). In his interview he stated that his frame of mind was not as focused on the job as it normally is.

The source is a sealed source and is in container which contains a springloaded door to allow closure after use. The room in which the source was left is limited access for authorized personnel and contains a cypher lock on the door. There was no authorized access into the room after 1600 on June 15, 2000, until 0700 on June 16, 2000. There were no radiological exposures to the workers during this time.

24. Evaluation (by Facility Manager/Designee):

Review of the event was completed on July 13, 2000. The event root cause was due to inattention to detail. The actions performed by the RCT who found the source were immediate and correct. The Radiological Controls Manager will conduct a follow up meeting with the RCTs on source control and accountability. A toolbox meeting was held after the event and personnel attention to detail, source control and accountability will be re-emphasized at the follow up meeting scheduled for July 13, 2000 to preclude a similar event from occurring. The Radiological Control Manager also briefed the RCT who left the source outside of the safe. The briefing was conducted by phone due to departure of the RCT for

previously scheduled medical treatment.

This event was reported based on procedural criteria which were established at a level several orders of magnitude lower than the threshold values referenced in DOE M 232.1-1A. The WIPP Occurrence Reporting procedure will be revised to reflect the threshold values required by the DOE Order.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. The Radiological Control Manager will conduct a toolbox meeting with the responsible organization to re-emphasize source control and accountability.

| | |
|---|------------------------------------|
| Target Completion Date: 07/20/2000 | Completion Date: 07/13/2000 |
|---|------------------------------------|

27. Impact on Environment, Safety and Health:

None

28. Programmatic Impact:

None

29. Impact on Codes and Standards:

None

30. Lessons Learned:

Periodic re-emphasis of the requirements for source control, accountability, and attention to detail is necessary to ensure that those requirements are consistently met.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:**33. User-defined Field #2:**

34. DOE Facility Representative Input:

FR concurs with the M&OC's assessment, RCAT conclusions, and the reasonableness/timeliness of actions taken in this occurrence.

Entered by: [REDACTED]

Date: 09/05/2000

35. DOE Program Manager Input:

36. Approvals:

Approved by: [REDACTED] Facility Manager/Designee

Date: 07/20/2000

Telephone No.: (505) [REDACTED]

Approved by: [REDACTED] Facility Representative/Designee

Date: 09/05/2000

Telephone No.: (505) [REDACTED]

Approved by: Approval delegated to FR

Date: 09/05/2000

Telephone No.:

ALO--WWID-WIPP-2000-0003

Final Report

Occurrence Report

Waste Isolation Pilot Plant

(Name of Facility)

Nuclear Waste Operations/Disposal

(Facility Function)

Carlsbad Area Office

Westinghouse Waste Isolation Div.

(Laboratory, Site, or Organization)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Facility Manager/Designee)

Name:

Title: ASSIST MGR

Telephone No.: (505)

(Originator/Transmitter)

Name:

Date:

(Authorized Classifier (AC))

1. Occurrence Report Number: ALO--WWID-WIPP-2000-0003

Improper entry into Radioactive Materials Area

2. Report Type and Date: Final

| | Date | Time |
|-----------------|------------|-------------|
| Notification: | 06/29/2000 | 12:26 (MTZ) |
| Initial Update: | 07/14/2000 | 13:16 (MTZ) |
| Latest Update: | 07/14/2000 | 13:16 (MTZ) |
| Final: | 09/05/2000 | 05:41 (MTZ) |

3. Occurrence Category: Off-Normal**4. Number of Occurrences: 1****Original OR:**

5. Division or Project: WID/WIPP**6. Secretarial Office:** EM - Environmental Management**7. System, Bldg., or Equipment:** 411- Waste Handling Building - Radioactive Materials Area**8. UCNI?:** No**9. Plant Area:** CH Bay**10. Date and Time Discovered:** 06/28/2000 09:17 (MTZ)**11. Date and Time Categorized:** 06/28/2000 11:10 (MTZ)**12. DOE Notification:****13. Other Notifications:****14. Subject or Title of Occurrence:**

Improper entry into Radioactive Materials Area

15. Nature of Occurrence:

- 10) Cross-Category Items
- C. Potential Concerns/Issues

16. Description of Occurrence:

On June 28, 2000 a maintenance person entered a posted Radiological Materials Area (RMA) without the appropriate dosimetry. The person did have the required Thermoluminescent Dosimeter and did not check out the Electronic Personal Dosimeter. The individual believed he was entering a Controlled Area and not an RMA. He was expecting a yellow and magenta rope separating the Controlled Area and RMA. In the current configuration, the entry doors are the barriers to the RMA and a rope was not needed. The doors are posted with the requirements for entry. Once the individual entered and did not encounter the rope he exited the area and notified the Radiological Control Personnel and the Central Monitoring Room.

17. Operating Conditions of Facility at Time of Occurrence:

Waste Stored in the Underground and the CH Bay

18. Activity Category:

03 - Normal Operations

19. Immediate Actions Taken and Results:

The individual self reported the event and notified Radiological Control Personnel immediately. The individual's TLD was removed for dose assessment and will be returned once further investigations are complete.

20. Direct Cause:

- 3) Personnel Error
 - A. Inattention to Detail

21. Contributing Cause(s):**22. Root Cause:**

- 3) Personnel Error
 - A. Inattention to Detail
-

23. Description of Cause:

After review of the event and interview of the maintenance person by the Responsible Manager it was determined that the root cause of the event was inattention to detail. The person read the sign and entered the area without the EPD. The maintenance person acknowledged that he understood the sign. The entry door is properly posted with the requirements and the Radiation Work Permit also states the requirements for entry. The direct cause was entry into the RMA by going through a physical posted barrier (door), inattention to detail.

24. Evaluation (by Facility Manager/Designee):

Review of the event and investigation were completed on June 30, 2000. The event was due to personnel inattention to detail. The constant reminder of radiological postings is being emphasized to the appropriate work groups. There are no other impacts to the plant, systems, or programs.

25. Is Further Evaluation Required?: No

26. Corrective Actions

(* = Date added/revised since final report was approved.)

1. A remedial action plan was developed (containing training and reviews with the Radiological Manager and Cognizant Manager) and will be completed by the individual prior to reinstatement as a radiological worker.

| | |
|---|------------------------------------|
| Target Completion Date: 07/31/2000 | Completion Date: 07/06/2000 |
|---|------------------------------------|

2. The Maintenance Manager will address this issue with the Maintenance Department to

reinforce the need to follow posted radiological requirements through toolbox meetings.

Target Completion Date: 07/31/2000

Completion Date: 07/27/2000

27. Impact on Environment, Safety and Health:

None.

28. Programmatic Impact:

None.

29. Impact on Codes and Standards:

Not Applicable.

30. Lessons Learned:

Emphasis needs to be placed on attention to detail during operations on a regular basis.

31. Similar Occurrence Report Numbers:

1. None

32. User-defined Field #1:

33. User-defined Field #2:

34. DOE Facility Representative Input:

No FR comments.

Entered by: [REDACTED]

Date: 09/05/2000

35. DOE Program Manager Input:

36. Approvals:

Approved by: [REDACTED] Facility Manager/Designee

Date: 07/14/2000

Telephone No.: (505) [REDACTED]

Approved by: [REDACTED] Facility Representative/Designee

Date: 09/05/2000

Telephone No.: (505) [REDACTED]

Approved by: Approval delegated to FR

Date: 09/05/2000

Telephone No.:
