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# **HARTCROWSER**

*Earth and Environmental Technologies*

*Final Draft*

*Copy No. 9*

*RCRA Interim Status Assessment  
Part A Facilities  
616 Non-Radioactive Dangerous Waste  
Storage Facility*

*J-1866-33.03*

Cross Ref with: 0003608

Add Milestone: M-020-00



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616 Non-Radioactive Dangerous Waste  
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Cross Ref with: 0003608

Add Milestone: M-020-00



## Department of Energy

Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

Ms. Christine Gregoire  
State of Washington  
Department of Ecology  
Mail Stop PV-11  
Olympia, Washington 98504

Mr. Robie Russell  
U.S. Environmental Protection Agency  
Region 10  
1200 Sixth Avenue  
Seattle, Washington 98101

Dear Ms. Gregoire and Mr. Russell:

### HANFORD ENVIRONMENTAL SELF-ASSESSMENT REPORT

Enclosed is a Hanford self-assessment report of facility environmental status against Resource Conservation and Recovery Act (RCRA) requirements. This report reflects the Department of Energy, Richland Operations Office (DOE-RL) and Westinghouse Hanford Company (WHC) self-initiated program to assess and comply with the letter and spirit of applicable environmental regulations at the Hanford Site.

This report presents the results of an internal and ongoing assessment of Hanford facility compliance with environmental regulations. In some areas, it calls out areas of potential noncompliance with regulations. Many of these areas are procedural and simply require a change in the manner of conducting operations to ensure compliance. Some areas represent potential changes that are more difficult to make and may require extensive planning, budgeting and operational changes. In all cases, DOE-RL and WHC are committed to implement the appropriate changes and conduct operations in compliance with all applicable environmental regulations.

Findings represent conditions and conclusions derived on the date of the self-assessment as indicated in each report. The WHC with DOE-RL concurrence has moved expeditiously to correct problems as they were identified during the assessment and will continue to do so in the future. The enclosure to this letter includes an action schedule for items identified in the report.



Ms. Gregoire and Mr. Russell

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The action schedule identifies the specific action to be taken and the completion date for all conclusions in the report.

This self-assessment is viewed by DOE-RL and WHC as healthy, productive, and supportive of DOE-RL and WHC commitment to environmental compliance. We believe that providing this assessment to you will strengthen our relationship and should be looked upon as a positive commitment from Hanford.

Sincerely,

ERD:ADK

R. D. Izatt, Director  
Environmental Restoration Division  
Richland Operations Office

Enclosure

R. E. Lerch, Manager  
Environmental Division  
Westinghouse Hanford Company

cc: W/encl.  
R. E. Lerch, WHC

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**ACTION SCHEDULE REPORT LEGEND**

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**SUA Identification:** The stream, unit, or activity (SUA) identification.

**Reg Citation:** The regulatory requirement applicable to a specific stream, unit, or activity.

**Status:** The compliance status of a stream, unit, or activity with respect to a specific applicable regulation.

**C: Complete:** The task identified with a given report finding is complete.

**AR: Action Required:** An action is required to address a given report finding.

**NR: Not Regulated:** The SUA is currently not regulated under the associated applicable regulation.

**Task Description:** A description of the task resulting from an assessment finding.

**Scheduled  
Comp Date:** The date by which a given task is scheduled to be completed.

**Actual  
Comp Date:** The date by which an action was performed.

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ACTION SCHEDULE

NOVEMBER 1988

<u>SUA Identification</u>	<u>Reg Citation</u>	<u>Status</u>	<u>Task Description</u>	<u>Scheduled Comp Date</u>	<u>Actual Comp Date</u>
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-300	AR	EVALUATE NEED TO DISTINGUISH FURTHER BETWEEN WASTE CHARACTERIZATION (FOR THE PURPOSE OF PROPER WASTE MANAGEMENT) AND WASTE DESIGNATION IN WASTE ANALYSIS PLAN.	10/31/89	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-300	AR	EVALUATE NEED FOR A PROGRAM TO VERIFY WASTE ANALYSIS INFORMATION AT OR PRIOR TO RECEIPT AT 616.	03/31/89	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-320	AR	TITLE ON FACILITY SURVEILLANCE DOCUMENTATION HAS BEEN CHANGED. NEED CONFIRMATION TO CLOSE.	12/31/88	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 171-303-320	C	ANNUAL FIRE INSPECTION AND ALARM/COMMUNICATIONS TESTING HAVE BEEN INCLUDED IN THE INSPECTION PLAN (BINDER).	12/31/88	11/17/88
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	C	NEW CONTINGENCY PLAN HAS BEEN PROVIDED TO FACILITY COMPLIANCE.	10/31/88	10/26/88
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	C	RESPONSES TO SPECIFIC EMERGENCIES HAVE BEEN INCORPORATED INTO THE CONTINGENCY PLAN.	12/31/88	11/17/88

OIMB

ACTION SCHEDULE

NOVEMBER 1988

<u>SUA Identification</u>	<u>Reg Citation</u>	<u>Status</u>	<u>Task Description</u>	<u>Scheduled Comp Date</u>	<u>Actual Comp Date</u>
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	C	ARRANGEMENTS WITH HANFORD SITE RESPONDERS ARE IDENTIFIED IN THE 616 CONTINGENCY PLAN AND THE PLAN HAS BEEN PROVIDED TO RESPOSE ORGANIZATIONS.	12/31/88	11/17/88
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	C	A LIST OF EMERGENCY EQUIPMENT (QUANTITY/TYPE, LOCATION, CAPABILITY) HAS BEEN ADDED TO THE 616 CONTINGENCY PLAN.	10/31/88	11/17/88
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	C	A DETAILED EVACUATION PLAN HAS BEEN ADDED TO THE 616 CONTINGENCY PLAN.	10/31/88	11/17/88
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	AR	REVIEW REVISED CONTINGENCY PLAN.	02/28/89	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-350	AR	REVISE CONTINGENCY PLAN AS REQUIRED.	10/30/89	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-360	AR	ENSURE ASSIGNED EMERGENCY COORDINATORS ARE INTIMATELY FAMILIAR WITH 616 FACILITY.	12/31/88	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-380	AR	UPDATE FACILITY RECORDS TO SHOW PESTICIDE MIXING ROOM AS ACID CELL.	06/30/89	/ /

ACTION SCHEDULE

NOVEMBER 1988

<u>SUA Identification</u>	<u>Reg Citation</u>	<u>Status</u>	<u>Task Description</u>	<u>Scheduled Comp Date</u>	<u>Actual Comp Date</u>
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-395	AR	EVALUATE NEED TO REMOVE WATER REACTIVE WASTE FROM AREA WITH FIRE SPRINKLER SYSTEM.	12/31/88	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	40 CFR 265 SUBPART G	AR	NEW CLOSURE PLAN AND PART B PERMIT TO BE DEVELOPED PURSUANT TO TRI-PARTY AGREEMENT.	09/30/89	/ /
616 NON-RADIOACTIVE DANGEROUS WASTE STORAGE	WAC 173-303-620	C	IMPACTS OF 173-303-620 (1)(C) HAVE BEEN ASSESSED.	11/30/88	10/27/88

## DISCLAIMER

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or any third party's use or the results of such use of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation or favoring by the United States Government or any agency thereof or its contractors or subcontractors. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.



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# **HARTCROWSER**

*Earth and Environmental Technologies*

***Final Draft***

***Copy No.***

***RCRA Interim Status Assessment  
Part A Facilities  
616 Non-Radioactive Dangerous Waste  
Storage Facility***

***Prepared for  
Westinghouse Hanford Company***

***August 24, 1988  
J-1866-33.03***



**HARTCROWSER**

Hart Crowser, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102-3699  
206.324.9530

Earth and Environmental Technologies

J-1866-33.03

August 23, 1988

Westinghouse Hanford Company  
Post Office Box 1970  
Richland, Washington 99352

Attn: Mr. David Hutchison

Re: RCRA Interim Status Assessment  
Part A TSD Facilities  
616 Non-Radioactive Dangerous Waste Storage Facility

Our report on the RCRA Part A TSD Facility Assessment for the 616 Non-Radioactive Dangerous Waste Storage Facility (NRDWSF) is enclosed. The report presents our understanding of the current compliance status of the facility, as well as recommendations for improving compliance with the applicable federal and state dangerous waste treatment, storage, and disposal (TSD) regulations. The report also presents regulatory guidance for each of the specific sections of dangerous waste regulations that the facility was assessed against.

The assessment was limited to the facility and practices directly associated with the TSD units identified in the 616 NRDWSF RCRA Part A permit application. The facility and practices were assessed relative to the interim status TSD requirements noted specifically in the report. The facility and practices were not assessed relative to dangerous waste generator or generator accumulation requirements. Regulatory analysis of the facility was not performed.

The conclusions and recommendations in this report are based on information provided to the authors from several sources. Since it was beyond the scope of this project to independently confirm all information provided, there exists the possibility that portions of the information are incorrect, incomplete, or out of date. For example, although a facility operating manual may state that a certain practice is accomplished, we did not actually observe the facility operations to confirm that the specific practice is performed.



Westinghouse Hanford Company  
August 23, 1988

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Our conclusions and recommendations are based on our understanding and experience with the federal and state dangerous waste regulations. The conclusions and recommendations should not be construed as legal opinions. Consult legal council for more definitive compliance conclusions.

Sincerely,

HART CROWSER, Inc.

A handwritten signature in cursive script, reading "Ross D. Rieke".

ROSS D. RIEKE, P.E.  
Project Engineer

A handwritten signature in cursive script, reading "William B. Abercrombie".

WILLIAM B. ABERCROMBIE  
Senior Hazardous Waste Specialist

A handwritten signature in cursive script, reading "Eric B. Egbers".

ERIC B. EGBERS  
Program Technical director

RDR/EBE:sde  
LC186633/JOBS

Enclosure

J-1866-33-03

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GENERAL REQUIREMENTS FOR DANGEROUS WASTE  
MANAGEMENT FACILITIES  
WAC 173-303-280

**REGULATIONS AND REQUIREMENTS**

General Requirements

The general requirements for dangerous waste TSD facilities note two specific requirements.

- o The facility must be operated in a manner which does not present an imminent or substantial hazard to the public health or the environment.
- o The facility is required to apply for an EPA/state identification number from the regulatory agency.

The requirement to operate the facility in a manner which does not threaten human health or the environment is purposely general so that the agencies can use the requirement as a broad, enforcement tool. If other, more specific regulations can not be applied to a situation where the agency feels a threat exists, this general facility requirement can be used. This requirement is satisfied primarily by preventing or minimizing activities on the site which have a potential to expose the public or the environment to dangerous wastes.

Identification Number

The TSD facility EPA/state identification number is obtained by completing a Washington state notification of dangerous waste activities form, Form No. 2, and submitting the form to the Washington State Department of Ecology. The information requested on the form includes:

- o Name and address of the party handling the dangerous waste;

- o The type of dangerous waste activities;
- o Facility contact persons at the facility;
- o Identification of the dangerous wastes handled at the facility; and
- o The estimated quantity of dangerous wastes handled.

The identification number is used on the annual reports that a TSD facility must submit each year and on manifests which a facility may use to transfer wastes off site.

#### APPLICABILITY

The 616 NRDWSF is identified as a container storage pad in the Part A permit application. Thus, the 616 NRDWSF must satisfy the general requirements for a dangerous waste management facility.

#### INFORMATION REVIEWED AND CURRENT STATUS

The current status of the 616 NRDWSF relative to the general requirements was determined through interviews of the facility operators, review of the facility operating records, and a walk through of the facility.

The 616 facility serves as a collection and staging point for containerized non-radioactive dangerous wastes that are generated at the Hanford Site. The wastes are segregated according to the type of waste while being stored at the facility. The wastes are shipped off site from the 616 facility to a private dangerous waste management contractor.

**CONCLUSIONS AND RECOMMENDATIONS**

- o The 616 NRDWSF satisfies the general requirements for a dangerous waste management facility.

**REQUIRED NOTICES**  
**WAC 173-303-290**

**REGULATIONS AND REQUIREMENTS**

There are three specific types of notices required of TSD dangerous waste facilities.

- o The Washington State Department of Ecology must be notified at least four weeks prior to the TSD facility receiving dangerous waste from a source outside of the United States.
- o The owner/operator of the TSD facility is required to notify any new owner/operator of the dangerous waste regulations, chapter 173-303 WAC.
- o The TSD facility owner/operator must inform any generator of dangerous waste who ships its waste to the TSD facility that the facility has the appropriate permits to receive the wastes.

Since most of the Hanford Site does not receive wastes from off-site, the required notices requirements generally do not apply to the Hanford facilities. The facility would be required to notify any new Hanford Site operator of the applicable dangerous waste regulations if, in the future, the site operations are assumed by someone other than WHC.

**APPLICABILITY**

The 616 facility does not currently receive dangerous waste from off-site. Thus, the notification requirements described in this section are not applicable to the 616 facility.

GENERAL WASTE ANALYSIS  
WAC 173-303-300

REGULATIONS AND REQUIREMENTS

Waste Analysis Requirements

The waste analysis requirements assures that the TSD facility has sufficient understanding of the dangerous wastes to properly treat, store, or dispose of them. The waste analysis requirements include the following:

- o The owner/operator must obtain a detailed chemical, physical, and/or biological analysis of the wastes prior to its management. The analysis must provide the parameters necessary to assure that the material is properly handled. An understanding of the facility processes may be used as an alternative to testing if such knowledge is sufficient to meet the intent of the waste analysis requirements.
- o The wastes must be reexamined if the wastes or the processes generating the wastes change.
- o A written waste analysis plan is required which presents the specific parameters that the waste will be analyzed for, the rationale for selecting the parameters, sampling and test methods, and the frequency with which the initial waste analysis will reviewed or repeated. The plan must be maintained in the facility operating record.
- o If wastes are received from off-site, procedures are required to ensure that the wastes received are as anticipated. (Since most of the Hanford Site does not receive wastes from off-site, this requirement is not applicable for most Hanford facilities.)

The waste analysis requirement is an important step toward effective and safe waste handling procedures. The waste analysis requirement is not simply a recordkeeping system for analytical data. The facility operator

must carefully examine the precise function and nature of the TSD operations to formulate a suitable wastes analysis program.

Waste analysis is necessary for a proper closure plan. An understanding of the wastes is necessary to determine effective methods to remove and/or treat the dangerous wastes and to decontaminate the facility. Similar requirements exist for post-closure and groundwater monitoring activities.

#### Content of the Waste Analyses Plan

Process Control and Monitoring The waste analysis plan must consider the wastes at all stages of the TSD processes where the wastes may differ from one stage to another. For example, a dangerous waste being treated in a tank should be analyzed before and after the treatment process. It should be analyzed prior to the process to ensure that the treatment is appropriate for the waste and does not result in a reactive or otherwise dangerous situation. The waste analysis should be accomplished after the treatment to ensure that the process is successful in effectively treating the waste.

The waste analysis plan must also identify tolerances that the wastes must meet in terms of specific parameters (i.e., measurable chemical or physical properties). The plan must show how the wastes are monitored to ensure that the specific tolerances are met. For example, consider a container that is received from the generator with a list of constituents and their concentrations. The plan must describe in detail how this information is checked for accuracy.

Material Compatibility The waste analysis must show the compatibility between the wastes and all materials that come in contact with the wastes. For example, the compatibility between the wastes and any tank materials, container materials, synthetic liner materials, secondary containment materials, other wastes or materials, etc. must be documented as a result of the waste analysis program.

Representative Sampling The waste analysis plan must note specifically how representative samples of the wastes will be obtained. Information that must be provided includes:

- o Methods to ensure that the samples properly represent the range of the characteristics of the wastes;
- o Sampling techniques; and
- o Sampling equipment.

Quality Assurance and Quality Control The waste analysis plan must detail the quality assurance/quality control program that ensures that all of the waste analysis information is technically defensible and properly documented. The QA/QC program should address:

- o The number of samples and sample blanks required for statistical completeness;
- o Preparation, maintenance, and cleaning of containers and equipment;
- o Certification of any laboratories used;
- o Chain-of-custody procedures and proper sample handling;
- o Laboratory testing methods approved by the EPA or state regulatory agency and justifications if non-approved methods are used;
- o Health and safety protocols; and
- o Proper methods of data compilation, review, and presentation.

## APPLICABILITY

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the NRDWSF must satisfy the waste analyses requirements.

## INFORMATION REVIEWED AND CURRENT STATUS

The current status of the waste analysis plan and program at the 616 NRDWSF was determined from facility personnel interviews and review of the facility operating file.

The waste analysis program for 616 NRDWSF is not performed at the storage facility. Rather, it is the responsibility of the Solid Hazardous Waste Plant Engineering (SHWPE) to insure that proper waste analysis is performed by each generator. The SHWPE responsibilities are outside the scope of this assessment, however, for the purpose of continuity a brief description of their waste analysis responsibilities are included in this assessment report.

Waste analysis to insure proper handling and management of wastes received at 616 NRDWSF is based on generator supplied information. Prior to waste acceptance at 616 NRDWSF the waste information sheets are reviewed by the SHWPE located at building 2750 East where appropriate waste identification codes are assigned, proper packaging instructions are addressed, and the appropriate storage cell is determined.

When the waste is received at the container storage facility, 616 NRDWSF personnel review the waste information sheets submitted by the generator and reviewed by the SHWPE staff to verify that the proper DOT shipping container is being used and to assess the hazard class and compatibility group to verify the waste is placed in the proper cell pending shipment off-site for treatment or disposal. Paper work accompanying each container is compared to information on container labels and internal manifest tracking system to identify any discrepancies.

Verification analysis is not performed at 616 NRDWSF nor are the containers sampled or opened for visual inspection of the contents, unless a discrepancy is noted in the container type or if the container is leaking or otherwise damaged. One 1987 waste discrepancy report reviewed in the files located at 2750 East summarize a situation that occurred where reactive constituents in a waste container were not identified by the generator. Verification analysis at the receiving TSD facility (Northwest EnviroService) discovered the error and alleviated a potentially hazardous situation from developing.

The waste analysis plan used by the SHWPE staff does not contain the level of detail that is expected by the regulatory agencies. However, the responsibilities for waste analysis of non-radioactive dangerous waste do not rest with 616 NRDWSF personnel, thus, this issue is outside the scope of this assessment. In addition, the waste analysis plan primarily addresses information needed for designation purposes but does not clearly identify waste characterization for the purposes of proper management of the waste while being stored at 616 NRDWSF.

#### CONCLUSIONS AND RECOMMENDATIONS

- o (Waste Analysis Plan) Amend the waste analysis plan used by the SHWPE staff to clarify waste characterization (versus waste designation) to ensure proper management of the waste while being stored at 616 NRDWSF.
- o (Waste Analysis) Develop a program for periodically verifying wastes received at 616 NRDWSF to ensure that the wastes are being properly managed at the facility.
- o (Waste Analysis Plan) Develop a written waste analysis plan which details the verification program.

SECURITY  
WAC 173-303-310

REGULATIONS AND REQUIREMENTS

The Active Portion Must Be Secured

All TSD facilities must have sufficient security to prevent unknowing entry and to minimize unauthorized entry of people and/or animals to the active portions of the facility. The active portion of a facility is considered the dangerous waste management unit such as a specific tank, container area, or landfill unit within the facility. Transfer areas such as loading and unloading docks are also considered an active portion of the facility. The specific features required of the security system include:

- o Signs around the active portions of the facility; and either
- o A 24-hour surveillance system; or
- o Artificial or natural barriers with controlled access.

Signs

The signs around the active portions of the facility are required to satisfy the following:

- o The sign must clearly note the danger associated with the TSD unit and that unauthorized people are not allowed. At a minimum, the sign must read "Danger-Unauthorized Personnel Keep Out".
- o The sign must be legible from a distance of at least 25 feet.
- o A sufficient number of signs must be placed around the active portion of the facility so that a sign is visible from any approach.

- o The sign must be in English as well as any other language predominant in the area around the TSD facility.

#### 24-Hour Surveillance

A 24-hour surveillance system should immediately identify any attempted or inadvertent entry into the active portion of the facility. Continuously monitored closed circuit TV systems and 24-hour guard service are typical types of 24-hour surveillance systems.

#### Artificial or Natural Barriers

Artificial or natural barriers with controlled access points can also be provide security. Artificial barriers are considered to items such as 6-foot or higher lockable fences with gates and building enclosures. Natural barriers are such items as rivers, lakes, and steep hillsides. Controlled access points are points where entry and exit to the facility is closely controlled such as lockable or continuously patrolled gates or doors.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the security requirements.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the security of the 616 facility was determined through interviews of the facility personnel and observation of the facility.

Access to the 616 facility is controlled by the overall Hanford Site security. Doors to the 616 building are locked at all times except for the main entrance. The main entrance is monitored by the facility personnel during operating periods and is locked when the facility is not operating.

Signs noting the dangerous nature of the facility and warning unauthorized personnel to keep away are posted on each side of the building.

#### **CONCLUSIONS AND RECOMMENDATIONS**

- o The security at the 616 facility is adequate.

GENERAL INSPECTION  
WAC 173-303-320

REGULATIONS AND REQUIREMENTS

Inspection Program

Facilities which treat, store, or dispose dangerous wastes must develop and implement a detailed inspection program. A written inspection plan must be developed and maintained in the facility operating records and must address both general and unit-specific inspection requirements. The general inspection requirements refer to inspection of the portions of the TSD facility other than the actual TSD container, tank, landfill, etc. units. Unit-specific inspection requirements are presented as part of the individual container, tank, landfill, etc., requirements.

The general facility inspection program must consider these items:

- o Emergency equipment such as spill control supplies, fire extinguishers, emergency lights, generators, and fire alarms;
- o Monitoring equipment such as thermostats, fire detection equipment, level, pressure, and flow transducers;
- o Security equipment such as fences, signs, lights, and locks;
- o Communication equipment such as radios, intercoms, closed circuit TV systems, and public address systems;
- o Other general facility items such as building floors, walls, roofs, elevators, ramps, and vehicles.

Detailed Inspection Plan

The inspection plan should note in great detail what specific items are to be inspected, when they are to be inspected, and what is to be checked for on each item. The level of detail required in an inspection plan is typically underestimated. It is not sufficient to simply "check the closed circuit TV system," as an example. Rather, each of the cameras should be checked for clarity, mobility, and focusing. Each receiving unit should be checked for cleanliness, picture quality, and picture adjustments. The inspection should reflect all elements which are necessary for the proper functioning of the item.

Inspection Records Records of the inspections must be maintained. At a minimum, the logs must note:

- o The date and time of the inspection;
- o The printed name and signature of the inspector;
- o Notations of the observations made; and
- o The date and nature of any action required as a result of the inspection.

The inspection logs must be maintained in the facility operating records for at least three years.

Checklists Typically, checklists guide the inspection of particular items. The checklists should reflect the level of detail required of the inspections. The checklists should give specific guidance on what to check on each item, how to inspect it, and how to note any deficiencies. Commonly, the inspection checklists serve as the inspection log and include space to note any responses to problems observed during the inspection.

Frequency of Inspections The frequency of the inspections depends on the specific nature and function of the item being inspected. Equipment which

continuously prevents dangerous wastes from spilling or leaking should be inspected daily. Equipment which is used only in the case of an emergency, likely needs to be inspected monthly. In general, the more a failure of a piece of equipment poses a threat to the environment or human health, and the more frequently the item is required to perform its function, the more often it should be inspected. Equipment which is inspected less often should be subjected to a more rigorous inspection.

Unit-Specific Inspections Unit-specific inspection requirements are presented in the respective sections addressing landfills, tanks, and container requirements. Additional inspection requirements for facilities that handle ignitable or reactive dangerous wastes are discussed in the Other General Requirements section.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the general inspection requirements.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the general inspection practices at the 616 facility was determined through interviews of the facility operators and review of the facility operating file.

Inspection of the 616 facility includes both a daily and a weekly inspection program. The daily inspection focuses on signs of leaks or spills, proper ventilation, and security. The weekly inspection is directed toward the condition of the individual containers and the surrounding structure and the status of the emergency equipment. Checklists are used for both inspections. The checklists include space to document what action is taken to correct problems noted from the inspection.

Logs from previous inspections are maintained in the facility operating record. The logs include the date that remedial action was undertaken to correct problems noted from the inspections.

#### CONCLUSIONS AND RECOMMENDATIONS

- o (Inspection Plan) Identify the TO-100-124 document as the facility inspection plan.
- o (Inspection Plan) Discuss the annual fire inspection and testing of the alarms and communication systems in the inspection plan.
- o (Inspection Records) Although it is not required by the regulations, note work order numbers on inspection logs corresponding to remedial action taken to correct problems noted on the inspection log.

PERSONNEL TRAINING

WAC 173-303-330

REGULATIONS AND REQUIREMENTS

Training Program

All employees at a TSD facility who are directly associated with the management of dangerous waste must successfully complete a training program which ensures the facility's compliance with the dangerous waste regulations. The regulations define "facility personnel" as

"All persons who work at, or oversee the operations of a hazardous waste facility, and whose actions or failure to act may result in noncompliance with the requirements (of the regulations)."

The training elements include:

- o The proper response to emergencies and implementation of the contingency plan; and
- o Instructors knowledgeable in proper dangerous waste management procedures relative to the specific facility.

New employees should undergo training within 6 months of employment and must be supervised by a trained person until training has been successfully completed. Annually, each employee must review the training program. The facility operating file must include a written training plan and records of each employees completion of the training.

Training Alternatives The regulations offer alternatives for specifically how the training requirements can be met. The training can be accomplished through a formal course presented either in the facility or by instructors from outside the facility. Alternatively, the training can be accomplished by on-the-job training (OJT) instruction from facility supervisors. It is

common for the facility supervisors to attend a course taught by instructors from outside the facility and then to return to the facility to instruct the remaining facility personnel.

The specific elements in the training course should be directed toward the specific wastes, units, and activities at the TSD facility. The training program should address how the types of wastes, units, and management activities relate to the following:

- o The chemical characteristics and associated hazards of the dangerous wastes handled at the facility;
- o Maintenance, inspection, and use of the facility emergency response and monitoring equipment;
- o Proper implementation of the contingency plan including response to a leak, spill, fire, explosion, or groundwater contamination incident;
- o Proper operation, inspection, and maintenance of waste feed cutoff systems;
- o Proper operation, inspection, and maintenance of the facility communication equipment; and
- o Shut down of operations.

For example, the training program should include instruction in how to verify if a tank automatic cutoff system is properly working and how to operate it manually, if necessary.

Instructors The training instructor must have thorough knowledge of the dangerous waste regulations and how they relate to the specific nature of the facility and dangerous wastes handled at the facility. Given the ultimate responsibility of the training instructor, it is desirable if the instructor is specifically trained in the field of dangerous waste management. On-the-job training is best taught by the facility supervisor

since that person is generally in the best position to judge whether an individual has displayed sufficient skills and knowledge to perform required tasks.

New Employees Each employee required to receive the training must do so within the first 6 months of employment at the facility. Until the training is received, the employee must work under the direct supervision of an individual that has received the training. Thereafter, each employee must complete an annual review of the training, at a minimum. If the facility or facility operations change or if the nature of the wastes handled at the facility change, the employees must be retrained.

#### Training Plan

A training plan documenting the training program must be prepared and included in the facility operating record. The plan should show in detail the specific training procedures and how the training requirements are met at the particular TSD facility. Specifically, the plan must include the following for each position related to the management of dangerous wastes at the TSD facility:

- o Job title and description;
- o Name of employee filling the position;
- o Requisite skills, education, and experience;
- o Detailed, written description of the type and amount of training required for the position including course outlines, handouts, exams, etc.; and
- o Documentation showing that the required training, both initial training and annual reviews, has been received within the required time period.

Training Records

Records showing that the training requirements are being satisfied must be maintained in the facility operating records. The training plan should be maintained permanently in the files. Documentation regarding individual employee's completion of the required training must be maintained for at least three years after the employee's last day at the facility. The records should be detailed and complete and include the dates of each employee's training and the courses attended. They should allow an inspector to quickly determine that the facility is meeting the training requirements.

**APPLICABILITY**

The 616 NRDWSF has been identified as a container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the training requirements.

**INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the training program at the 616 NRDWSF was determined through interviews of the facility operators and review of the facility operating file.

Each operator at the 616 NRDWSF is required to complete a 40 hour course outlined in the personnel training manual. This course includes general dangerous waste management practices, dangerous waste characteristics, and response to emergencies. In addition, the employee completes On-The-Job Training (OJT) which consists of learning each of the facilities operating procedures. The operators also attend the 006S course on shipping dangerous waste. The training program is completed within the first six months of employment at the facility with annual reviews thereafter.

The course and OJT instructors are trained beyond the requirements of the 616 facility training program.

Records of the employees training are maintained in the facility operating file.

#### CONCLUSIONS AND RECOMMENDATIONS

- o (Training Plan) Although not specifically required in the regulations, compile all training information, course outlines, training schedules, and job descriptions in a single binder labeled "Training Plan". Include a written synopsis of the overall training program.
  
- o The training program for 616 NRDWSF is adequate.

PREPAREDNESS AND PREVENTION

WAC 173-303-340

REGULATIONS AND REQUIREMENTS

Preparedness and Prevention Requirements

Dangerous waste TSD facilities must be designed, constructed, maintained, and operated to minimize the possibility of a release of dangerous waste to the environment. Regulations directed toward satisfying this general requirement are presented in terms of four general requirements:

- o Required equipment;
- o Access to communication equipment and alarms;
- o Aisle space; and

Arrangements with local authorities.

Required Equipment

- o An internal communication system;
- o An external communication system, such as a telephone, capable of summoning emergency aid;
- o Portable fire control equipment, fire extinguishers, spill control equipment, and decontamination equipment; and
- o Water at sufficient pressure and volume to supply the water hoses, sprinkler systems, foaming equipment, etc.

Internal Communication The internal communication system must allow immediate notification to all employees of any emergency and to inform them of the proper evacuation. The system should also immediately notify emergency response personnel within the facility as to the location and nature of the emergency. Typical internal communication systems include alarms with varying tones, intercom systems, and public address systems. This equipment must be located so that personnel have immediate access, either directly or by visual contact with someone with immediate access, wherever dangerous wastes are being handled.

External Communication External communication systems are required to be able to immediately notify emergency response personnel from outside the facility. In particular, the system should notify the local police and fire departments or local or state response teams as to the location, nature, and extent of the emergency situation. Typically, external communication systems consist of a telephone which is able to call the emergency response personnel. The telephone should be available at the control room or a main office. If only one person is in the facility when it is operating, that person must have immediate access to the external communication system (i.e., a hand held radio phone if the individual is not stationed near a phone).

Fire and Spill Control Equipment The facility's fire control equipment should be based on the specific nature of the TSD activities occurring at the site and the associated potential fire hazards. If the wastes handled require a particular method of fire control (special foams, inert gas, dry chemicals, etc.), that type of equipment should be maintained at the facility. Similarly, the type of spill control equipment (e.g., pumps, vacuums, absorbants, etc.) at the facility should reflect the particular nature of the materials that could potentially spill. The equipment should be stored at the facility near the location where its use would be anticipated.

Water System The water system at the facility must provide adequate water pressure and volume to meet any emergency. The facility sprinkler system,

if present, should be designed for the anticipated water pressure and volumes.

#### Aisle Space

The TSD facility must maintain adequate aisle space within the facility to allow the movement of emergency equipment and personnel within the facility. Adequate space should be provided to inspect the units within the facility, move maintenance and emergency equipment to areas where it could be necessary, and allow evacuation of the facility.

#### Consultation with Emergency Aid Agencies

Local agencies that may respond to an emergency at the TSD facility should be consulted to exchange information and make arrangements between the TSD facility and the agencies. Such relationships should particularly be developed with the local police and fire departments, local hospitals, and state emergency response teams. Specific information that should be provided to the local police and fire departments and emergency response personnel include:

- o Layout of the facility;
- o The types, nature, amount, location, and hazards associated with the dangerous wastes handled at the facility;
- o Areas in the facility where personnel are typically working;
- o Entrances into the facility; and
- o Evacuation routes.

Information for local hospitals include the types of dangerous wastes handled at the facility and the associated health dangers associated with

the wastes. The health dangers should include burns and the effects of inhalation, skin contact, ingestion, etc.

Where outside agencies decline to enter into such agreements with the TSD facility, their refusal should be documented and noted in the facility operating record.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a container storage pad in the Part A permit application. Thus, the 616 NRDWSF must satisfy the preparedness and prevention requirements.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the preparedness and prevention procedures and equipment at the 616 facility was determined through interviews of the facility operators, review of the facility operating records, and observation of the facility.

The 616 facility has an internal public address system which is operated from the facility office. The facility has an external telephone system with phones located both in the office and on a power pole immediately east of the facility. In addition, operators carry portable two-way radios that can be used to contact either the office or outside personnel.

Five fire extinguishers are located throughout the facility and are placed near where the wastes are stored. Fire alarms are located in each storage cell near the exit door with sirens also in each cell. Absorbent pads and other spill control equipment are located in the facility. A fire hydrant is located about 100 feet southeast of the facility. Fire protection is provided by a sprinkler system throughout the facility. Two eye wash stations are located in the facility. The Hanford Fire Department is located immediately across the street from the 616 facility.

The containers of waste are placed on premarked locations on the floor of the cells. The locations are such that each container is directly accessible and sufficient aisle space is provided.

The Hanford Fire Department is periodically provided a list of dangerous wastes currently stored at the facility and where the waste is located in the cells. The list is updated each time waste is either received or shipped out of the facility. The Hanford Site has general agreements with local hospitals and police departments. These agreements are not specific to the individual facilities on the Hanford Site.

#### **CONCLUSIONS AND RECOMMENDATIONS**

- o The preparedness and prevention at the 616 facility is adequate.

CONTINGENCY PLAN  
WAC 173-303-350

REGULATIONS AND REQUIREMENTS

Contingency Plan Requirements

Dangerous waste TSD facilities must develop procedures to effectively address emergencies. The procedures should lessen the impact on human health and the environment if fires, explosions, or releases of dangerous wastes to the environment occur. The emergency procedures to be followed in the TSD facility must be presented in a contingency plan. The contingency plan must include the following:

- o A detailed description of the specific actions to be taken if specific emergencies occur;
- o A description of the arrangements made with local agencies which might be required to respond in the event of an emergency;
- o A current list of the emergency coordinator(s) including work and home phone numbers and address;
- o A list of all emergency equipment and its location at the facility; and
- o An evacuation plan for the facility personnel.

Content of the Contingency Plan

Detailed Responses to Emergencies The contingency plan must present detailed instructions to facility personnel on what specific actions to take in the event of specific emergencies. The nature of the TSD facility, its dangerous wastes management units, and the specific activities which

occur in each of the units as well as other portions of the facility need to be considered in postulating what potential emergencies could occur.

Once the potential emergencies are identified, detailed and specific responses to those emergencies must be developed and presented. The contingency plan should be written as instructions to the facility personnel for their use during an emergency. The plan should not be a generic, standard discussion of what to do in the case of an emergency. Simply stating that "If you observe a spill, clean it up" does not satisfy the requirements of a contingency plan. The following is an example of the level of unit/event specific instructions that are required in the contingency plan:

If you observe a fire in the class 1-A flammable liquids cell, take the following steps:

-Exit the 616 NRDWSF through the nearest exit away from the fire;

- Initiate the fire alarm next to the exit door as you leave the building;
- Immediately notify the emergency coordinator relaying information on the location of the fire within the cell, the size of the fire, the probable source of the fire, and any other information or observations obtained prior to evacuating the building;

-Identify from the facility inventory tracking system chemicals that may be involved in or near the fire that are water reactive or potentially explosive when exposed to a heat source. If any such chemicals are present inform the emergency personnel when they arrive;

- Proceed to the appropriate staging area as instructed in the facility evacuation plan. All fire fighting activities in the 1-A flammable storage area will be conducted and directed by the Hanford Fire Department;

- If water reactive chemicals are involved in the fire do not apply water, use dry chemical retardant such as Purple K, available from the fire department located across the street;

-Remain at the staging area until otherwise directed by the emergency coordinator.

Authority During Emergencies The plan must also include detailed discussions of who has what authority at what time. For example, the facility emergency coordinator could have the authority over a fire until the fire fighting crews arrive. Then the fire chief assumes prime responsibility.

Agreements With Local Authorities The contingency plan should document all of the arrangements and agreements that have been made with local agencies. These agreements would be those required by the preparedness and prevention requirements (WAC 173-303-340) and include local fire departments, police departments, and local emergency response teams. The nature of the agreements should be provided so that roles and responsibilities in the event of specific types of emergencies can be determined. Copies of the contingency plans are required to be provided to the local agencies with which the facility has agreements.

List of Emergency Coordinators The list of emergency coordinators in the contingency plan must be complete and current. Since the plan will be used as an instruction manual in the event of an emergency, it must be clear from the plan who the emergency coordinator is and how to contact that person.

List of Emergency Equipment The contingency plan must include a list of all of the emergency equipment at the facility. This equipment is noted in the preparedness and prevention requirements (i.e., fire extinguishers, spill control equipment, communication systems, etc.). The plan should list all of the equipment available, its location within the facility, and a physical description of each item. The use(s) and capabilities of the

equipment should also be provided. A plot plan is an excellent way to show the location of the emergency equipment. Again, the information should be presented in a manner which helps the facility and emergency personnel effectively respond to specific emergencies in the facility.

Evacuation Routes Emergency evacuation routes and procedures must be presented in detail in the contingency plan. Methods to communicate the proper routes under specific emergency situations should also be documented. For example, different types of alarms could signify which specific evacuation route is appropriate in particular emergencies.

#### Filing and Modifying the Contingency Plan

A copy of the contingency plan must be maintained in the facility operating record. It should be easily available to inspectors so that they can quickly determine if the facility plan satisfies the contingency plan requirements.

The contingency plan must be amended if it fails during an emergency, if applicable regulations change, if the facility or facility operations change, if the emergency coordinators change, or if the list of emergency equipment changes.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD storage facility in the Part A permit application. Thus, the 616 NRDWSF must develop and maintain a written contingency plan on-site.

**INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the 616 NRDWSF contingency plan was determined through interviews with the facility personnel and review of the facility operating file.

The 616 NRDWSF does not have a contingency plan that contains all of the necessary emergency procedures for the container storage facility. Many of the contingency plan requirements were addressed in the various documents reviewed as part of this assessment. However, these documents do not address all of the requirements of WAC 173-303-350.

The contingency plan for 616 NRDWSF notes that any non-routine occurrences require the immediate evacuation of the affected cell and notification of the emergency coordinator. The emergency coordinator then determines if the Hanford Fire Department HAZMAT team, located across the street, is needed. Non-routine occurrences include:

- A leaking or ruptured container;
- A spill;
- A fire; and
- Power and/or ventilation loss at the facility.

Instructions on proper protective equipment, spill cleanup, and chemical hazard information are provided by the Solid Hazardous Waste Plant Engineering (SHWPE) and Industrial Hygiene and Hazardous Material (IH&HM) Groups. The Chemical Emergency Response Team (CERT) provides support to the Hanford Fire Department. In general, the contingency plan does not document specific responses to specific emergencies as defined in WAC 173-303-350 (Contingency Plan and Emergency Procedures) and WAC 173-303-360 (Emergencies) other than the notification responses discussed above.

**CONCLUSIONS AND RECOMMENDATIONS**

- o (Contingency Plan) Although it is not specifically required by the regulations, compile the contingency plan for dangerous waste management at 616 NRDWSF into a single, stand-alone, document for easy reference and to allow for easier internal or regulatory agency compliance reviews.
  
- o (Contingency Plan Content) Include detailed emergency responses specific to each emergency that could reasonably occur at the facility. This includes specific and detailed response activities that will be conducted by the Hanford Fire Department, SHWPE, IH&HM, CERT, and/or other emergency responders that may be involved.
  
- o (Contingency Plan Content) Include in the contingency plan documentation of arrangements with local authorities made in response to the preparedness and prevention requirements in WAC 173-303-340. This is to include arrangements with local fire departments, police departments, hospitals, and emergency response teams as well as documentation of the arrangements with internal Hanford Site emergency responders. In each case specific roles and responsibilities must be identified for each type of emergency. Supply a copy of the facility contingency plan to local authorities with which the facility has agreements.
  
- o (Contingency Plan Content) Include a list of the emergency coordinator and alternates including names, home addresses, home phone numbers, beeper numbers, etc., sufficient to allow for 24 hour contact with the emergency coordinator or a designated alternate;
  
- o (Contingency Plan Content) Include a list of all emergency equipment, the quantity available on-site, the capacity and capabilities of all emergency equipment, the location of emergency equipment at the facility, and a physical description of each item.

- o (Contingency Plan Content) Although it is not specifically required in the regulations, include a list of emergency equipment available at the Hanford Fire Department in the contingency plan.
  
- o (Contingency Plan Content) Include a detailed evacuation plan that describes the requirements for its use, evacuation signals, routes, and alternative routes.

**EMERGENCIES**  
**WAC 173-303-360**

**REGULATIONS AND REQUIREMENTS**

Emergency Requirements

Dangerous waste TSD facilities must satisfy specific requirements in the an emergency at the facility. These requirements are directed toward minimizing any hazards to human health or the environment resulting from the emergency. Although the contingency plan is to provide facility-specific instructions in the event of specific types of emergencies, the general emergency requirements present particular responses that are required of all facilities during all emergencies.

The Emergency Coordinator

The emergency coordinator identified in the contingency plan must have the authority to commit the necessary resources to respond to an emergency. Thus, the coordinator is typically one of the senior individuals within the facility. The emergency coordinator should be familiar with the dangerous waste management activities at the facility including the following:

- o The facility contingency plan;
- o The location and properties of all dangerous wastes handled at the facility;
- o The location of all records within the facility; and
- o The layout of the facility.

Either the emergency coordinator, or an alternate coordinator who meets the above requirements and who reports to the emergency coordinator, must be on-site at all times the facility is operating. Specific procedures should be documented regarding how an alternate coordinator remains in contact with the primary coordinator when the primary coordinator is off-site.

The regulations note specific requirements that the emergency coordinator and owner/operator must satisfy in the event of an emergency. The emergency coordinator, in addition to any other activity required by the facility contingency plan, must immediately:

- o Activate alarms and communication systems and notify state and local response teams if their help is necessary;
- o Identify the nature and extent of any release, fire, or explosion;
- o Assess any potential hazards to human health or the environment resulting from the emergency;
- o Report any potential threat to the area outside the facility to the appropriate local authorities and help determine if the area needs to be evacuated;
- o Take all reasonable measures to stop any releases, fires, or explosions, and ensure that they do not re-occur or spread;
- o Properly treat, store, or dispose of any wastes recovered from spills or releases generated during the emergency; and
- o Clean, repair, or replace any emergency equipment used or damaged by the emergency and ensure that it is in good working order before resuming operations.

Notification and Reports

The owner/operator must notify the regulatory agencies that the facility equipment has been properly cleaned, repaired, or replaced before resuming operations. The owner/operator must also prepare a written report which includes the following:

- o Name, address, and phone number of the facility and the owner/operator;
- o Date, time, and type of emergency;
- o The types and quantities of materials involved in the emergency;
- o The extent of any injuries;
- o An assessment of any hazards to human health or the environment due to the emergency;
- o The amount and disposition of any material recovered from releases during the emergency; and
- o Cause of the emergency and corrective actions taken to prevent reoccurrence of a similar incident.

The report must be submitted within 15 days of the emergency.

**APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage unit in the Part A permit application. Thus, the 616 NRDWSF is required to comply with the emergency requirements set forth in WAC 173-303-360.

#### INFORMATION REVIEWED AND CURRENT STATUS

The current status of the emergency procedures and responsibilities at the 616 NRDWSF was determined from interviews with facility personnel and review of the facility operating file.

The Hanford Fire Department, located directly across the street, is the primary emergency responder at the 616 NRDWSF with support from Solid Hazardous Waste Plant Engineering (SHWPE), Industrial Hygiene and Hazardous Material (IH&HM), and the Chemical Emergency Response Team (CERT). These individuals have a high level of training toward responding to emergencies. The storage facility is designed to reduce the impacts caused by emergencies. Documentation of response actions is lacking in some areas as discussed in the Contingency Plan and Emergency Procedures section of this assessment.

#### CONCLUSIONS AND RECOMMENDATIONS

- o (Emergency Coordinator) Ensure that the emergency coordinator and all alternate emergency coordinators are intimately familiar with the contents of the facility contingency plan, location and properties of all wastes managed, and the location of all records pertinent to the management of wastes at 616 NRDWSF.

MANIFEST SYSTEM

173-303-370

REGULATIONS AND REQUIREMENTS

Dangerous waste facilities that receive waste from off-site are required to adhere to specific manifest practices. These manifest practices include signing procedures, recordkeeping, methods to handle discrepancies, and reasons and methods to refuse a shipment.

The Hanford Site rarely receives shipments of dangerous wastes from off-site. Thus, the manifest requirements are not typically applicable to the assessment of Hanford Site facilities. If, however, shipments of dangerous wastes are received from off-site for treatment or disposal, manifest requirements would apply and the facility personnel must:

- o Sign and date each copy of the manifest;

Note any discrepancy within the manifest information or between the manifest information and the shipment;

- o Provide the transporter a signed copy of the manifest;
- o Return a signed copy of the manifest to the generator; and
- o Retain a signed copy of the manifest in the facility operating file.

If a discrepancy is noted in the manifest, it must be immediately reconciled and clarified with the generator and/or transporter. A written report to regulatory agency explaining the discrepancy is required if the conflict is not resolved within 15 days.

**APPLICABILITY**

The 616 NRDWSF does not receive dangerous waste from off site. Thus, the manifest requirements in WAC 173-303-370 do not apply to 616 NRDWSF. Wastes are shipped from 616 NRDWSF to an off-site TSD but these generator manifest requirements are outside the scope of this project.

FACILITY RECORDKEEPING

WAC 173-303-380

REGULATIONS AND REQUIREMENTS

Facility Recordkeeping Requirements

Dangerous waste TSD facilities must maintain complete and accurate records of all dangerous waste management activities that have occurred at the site. The record system should document all dangerous waste activities and allow easy reconstruction of past dangerous waste management practices. Particularly, the records should be such that an inspector from a regulatory agency can quickly determine whether the facility is operating in compliance with the dangerous waste regulations.

Required Records

Specific items that should be included in the facility records as a minimum are:

- o Records of the amount and nature of dangerous wastes treated, stored, or disposed at the facility including dates, source, final disposition, methods, etc.;
- o Records of where (what units within the facility) specific wastes have been, or are, treated, stored, or disposed;
- o Waste analysis results including laboratory test results, waste designation narratives, and any petitions regarding waste designation that have been submitted;
- o Contingency plan, emergency reports, and records associated with past emergency situations at the facility;

- o Inspection logs and records of follow up actions as well as results from inspections by outside inspectors;
- o Groundwater monitoring data and testing results; and
- o Closure and post-closure plans and cost estimates.

#### Waste Identification

Records which document the nature of the wastes and their management must describe the waste by its common name and by its dangerous waste number. The TSD management method codes must also be provided. For example, a waste corrosive liquid stored in a container would be referred to as S01 (management code for storage in a container) of a D002 (corrosive) waste.

#### Records Location and Access

The facility dangerous waste records should be maintained in a single location separate from the general facility records so that they can be easily found and reviewed. Although it is not required by the regulations, it is recommended that a duplicate of the dangerous waste records be maintained in a separate location in case the originals are destroyed. The records must be retained at least until closure of the facility.

The records should be maintained under the control of a select few individuals within the facility. Unauthorized personnel should not be allowed access to the dangerous waste records. The records must be available for inspection upon request by the regulatory agencies.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage unit in the Part A permit application. Thus, the 616 NRDWSF must satisfy the facility recordkeeping requirements.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the recordkeeping practices at the 616 facility was determined through interviews of the facility operators and review of the facility operating file.

The facility operating records are maintained in a lockable file cabinet and on a bookshelf in the facility office. The records include an inventory of the waste currently stored at the facility and the specific location of the waste within the facility, inspection logs, and elements of a contingency plan. The file includes training records for the facility personnel. Copies of internal and external manifests including waste profile information corresponding to the wastes are also maintained in the facility operating file.

A current inventory of the dangerous wastes stored at the 616 facility is maintained on a computer system in the facility office.

Formal manifest records and waste analyses information pertaining to the wastes shipped out from the 616 facility are maintained at a different facility. A copy of the facility closure plan is also maintained at a facility away from the 616 facility.

**CONCLUSIONS AND RECOMMENDATIONS**

- o (Required Records) Delete references to the pesticide mixing room in the facility documents to reflect the current usage of the acid cell.
  
- o (Record Location and Access) Although it is not required by the regulations, keep a copy of the closure plan, Part B permit application, and waste analyses information at the 616 facility.

**FACILITY REPORTING**

**WAC 173-303-390**

**REGULATIONS AND REQUIREMENTS**

Reporting Requirements

The owner/operator of a dangerous waste management facility must submit reports on various activities at the facility. In particular the following reports are required:

- o Reports documenting unmanifested dangerous waste shipments;
- o Annual reports; and
- o Other additional reports.

Unmanifested Shipments

Facilities must report dangerous waste shipments received from off-site without an accompanying manifest. Since the Hanford Site rarely receives dangerous waste from off-site, the Hanford Site facilities do not typically have cause to submit this type of report.

Annual Reports

By March 1 of each year, dangerous waste TSD facilities must submit annual reports which document the dangerous waste activities at the facility for the previous calendar year. A particular form, Form 5, available from the regulatory agency, is to be used to develop the annual report. Specific information relevant to the Hanford Site facilities that is required on the form includes:

- o The EPA/state identification number, name, and address of the facility;
- o The amount and nature of all dangerous wastes treated, stored, or disposed at the facility using the dangerous waste numbers;
- o The methods of treatment, storage, or disposal used at the facility using the dangerous waste handling codes; and
- o The most recent closure and post-closure cost estimates.

The Hanford Site submits a single annual report for the entire site. The report includes the TSD activities at each of the individual facilities. The individual facilities submit their annual information to the preparers of the overall Hanford Site annual report.

#### Other Reports

Other reports which may be required of the TSD facilities include reports documenting emergency situations as required in the emergency regulations and any other report that the regulatory agencies require on a case-by-case basis.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage unit in the Part A permit application. Thus, the 616 NRDWSF must satisfy the reporting requirements. The facility does not receive waste from off site and, thus, reports of non-manifested shipments are not applicable to the 616 facility.

**INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the 616 facility reporting practices was determined through interviews of the facility operators and review of the 1987 Hanford Site Annual Dangerous Waste TSD Report.

The 1987 annual report includes on the order of 250 pages presenting the specific wastes that were stored at the 616 facility. The information appears to be complete and consistent.

**CONCLUSIONS AND RECOMMENDATIONS**

- o The 616 facility reporting practices are adequate.

OTHER GENERAL REQUIREMENTS

WAC 173-303-395

REGULATIONS AND REQUIREMENTS

General requirements that apply to dangerous waste TSD facilities include:

- o Precautions for ignitable, reactive, or incompatible wastes;
- o Labeling for tanks and containers;
- o Relationships with other environmental laws and regulations;
- o Loading and unloading areas; and
- o Storage time limits for impoundments and piles.

Ignitable and Reactive Wastes

The special requirements that pertain to ignitable or reactive wastes apply to wastes which are designated as such by the dangerous waste designation procedures. Specifically, any wastes meeting the characteristics described in WAC 173-303-090(5) or -090(7) are subject to these requirements. The special requirements applicable to ignitable or reactive wastes are:

- o Ignitable or reactive wastes must be separated from sources of ignition such as open flames, sparks, heat, etc.;
- o "No Smoking" signs must be placed wherever ignitable or reactive wastes are being handled; and
- o The facility must be inspected annually by a person knowledgeable in the Uniform Fire Code.

In general ignitable, reactive, or incompatible wastes and materials must be handled in a manner that does not:

- o Generate extreme heat, pressure, fire, explosion, or violent reactions;
- o Produce uncontrolled gases or dusts that are toxic, flammable, explosive, or otherwise threaten human health or the environment; or
- o Damage the structural integrity of the facility or unit containing dangerous waste.

Satisfying the ignitable, reactive, or incompatible waste general requirements typically includes the facility accomplishing the following:

- o Identification of any ignitable, reactive, or incompatible wastes handled within the facility;
- o Identification of potential scenarios and methods that may result in incompatible wastes being combined;
- o Identification of sources of ignition or reaction within the facility;
- o An analyses of handling methods and units storing ignitable, reactive, or incompatible wastes relative to the above items; and
- o An analyses of treatment methods and units used to render the waste nonignitable, unreactive, or compatible.

Identification of Ignitable, Reactive, or Incompatible Wastes The identification of any ignitable, reactive, or incompatible wastes should be made an integral part of the waste analysis plan. The plan should consider the nature of the wastes at intermediary steps in any treatment processes to determine the ignitibility, reactivity, or incompatibility. All materials which come into contact with the wastes should be considered to determine any potential for incompatibility between the wastes and the materials.

The dangerous waste activities and processes should be reviewed to identify ways that incompatible wastes may inadvertently be allowed to mix. These include containers that are supposedly empty but contain incompatible residue and improperly decontaminating tools and equipment.

Sources of Ignition Sources of ignition may consist of other than open flames and heat. Equipment and tools used around ignitable or reactive wastes should be constructed of non-sparking materials. Ignitable wastes should be segregated from wastes which generate significant amounts of heat when exposed to common materials such as water or air. Sources of static electricity should be avoided, and tanks and containers should be grounded.

Annual Fire Inspection The purpose of the annual fire inspection is to confirm that the facility is designed and operated in conformance with the Uniform Fire Code. The regulations require that facilities that handle ignitable wastes be designed, constructed, and operated in general accordance with the Uniform Fire Code. The annual inspection must be performed by a professional person who is knowledgeable of the code. The local fire marshall or a facility engineer with a background in fire codes typically satisfy this criteria. The inspection should also include checking for practices which present potential for causing fires or explosions.

#### Tank and Container Labels

Tanks and containers must be marked with a label which notes the contents and the major risks associated with the wastes. Specific requirements are provided in the technological standards for each of the specific types of units.

#### Other Requirements

Other general requirements note how the dangerous waste regulations relate to other environmental laws. Other laws include those pertaining to the

Clean Water Act, Toxic Substances Control Act, and Clean Air Act. Particular requirements for loading and unloading areas and storage time limits for impoundments and piles are also presented.

#### APPLICABILITY

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the other general requirements for dangerous waste management facilities.

#### INFORMATION REVIEWED AND CURRENT STATUS

The current status of the facility relative to the other general requirements was determined through interviews of the facility operators, review of the operating file, and observation of the 616 facility.

Containers of ignitable dangerous wastes are stored in the flammable cells at the west end of the 616 building. The wastes in the flammable cells are protected from sources of ignition through the use of non-sparking equipment, explosion proof lighting, and strict operating procedures. No smoking signs are displayed at the 616 facility. The 616 NRDWSF was designed in accordance with the Uniform Fire Code and is inspected at least annually in the presence of a fire department representative.

Incompatible wastes are segregated by placing them in separate storage cells.

Water reactive wastes were observed being stored in the oxidizer cell at 616 NRDWSF. This storage cell is equipped with an automatic sprinkler system supplied with water. If the sprinkler system were to engage and the reactive waste came into contact with the water a severe reaction could take place.

The containers are marked with a label which notes the contents of the container and the major risks associated with the wastes.

#### CONCLUSIONS AND RECOMMENDATIONS

- o (Annual Fire Inspection) Although not required by the regulations, place a copy of the most recent fire inspection log with the other inspection records in the facility operating file.
  
- o (Ignitable and Reactive Wastes) Remove water reactive wastes to an area without a water sprinkler system and supply the area with appropriate emergency equipment such as Purple K fire retardant;

**SITING STANDARDS**  
**WAC 173-303-420**

**REGULATIONS AND REQUIREMENTS**

Dangerous waste TSD facilities must meet specific standards regarding the physical location of the facility. The siting standards generally address minimum distances that TSD facilities must be from surface waters, public facilities, drinking water supplies, and other sensitive features. Facilities may not be located in earthquake sensitive areas or a floodplain.

The specific siting standards are currently being significantly revised and rewritten. The final form of the siting standards can not, at this time, be anticipated. Thus, it is not possible to assess facilities relative to the dangerous waste facility siting criteria.

**APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the 616 NRDWSF may be subject to future siting requirements.

PERFORMANCE STANDARDS

WAC 173-303-430

REGULATIONS AND REQUIREMENTS

The general performance standards allow for the regulatory agencies to apply, on a case-by-case basis, standards that are more stringent than those specifically presented in the regulations. The general performance standards require that dangerous waste TSD facilities must be designed, constructed, and maintained in a manner that prevents degradation of human health or the environment. Specific areas of environmental damage noted in the regulations include:

- o Groundwater and surface water quality;
- o Air quality;
- o Slope and soil instability;
- o Flora and fauna;
- o Aesthetics of public or adjoining lands; and
- o Excessive noise.

The general performance standards also require that the facility treat or recycle waste material as much as economically feasible.

In essence, the general performance standards allow the regulatory agency to control the operations at a TSD facility even if no specific regulation (other than the general performance standards) is being violated. By citing the general performance standards and identifying a "threat to human health or the environment," the agency can undertake enforcement action to correct the source of the threat. Thus, the general performance standards require that, above all else, the owner/operator identify facility-specific

practices that, although may not fail any specific TSD requirement, could present a threat to human health or the environment.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the general performance standards for dangerous waste management facilities.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the facility relative to the general performance standards was determined through interviews of the facility operators, review of the operating files, and observation of the facility.

Concrete cracking was observed in the base and curbs of the north loading dock containment. Minor concrete cracking was also observed in the flammable cell sump floor. The facility operators noted that work orders have been requested to repair the cracks.

Other than this and other deficiencies noted elsewhere in the report, no evidence of improper current practices that pose a threat to the environment or human health were observed. No recent releases of dangerous waste to the environment were noted by the facility personnel.

Future practices, however, may include sample collection and testing in the sampling and handling room. This room has two sinks. One sink drains to the sanitary sewer while the other sink drains to a catch basin for disposal. The sinks are not labeled as to which one drains to the sanitary sewer.

**CONCLUSIONS AND RECOMMENDATIONS**

- o The 616 facility is designed and is currently being operated in accordance with the general performance standards.
- o If, in the future, samples of dangerous wastes are handled in the sampling room, label the sinks to preclude placement of dangerous wastes in the sink which drains to the sanitary sewer.
- o Continue the crack monitoring and repair procedures.

**BUFFER MONITORING ZONES**  
**WAC 173-303-440**

**REGULATIONS AND REQUIREMENTS**

Ignitable or Reactive Wastes

Dangerous waste TSD facilities that handle ignitable or reactive wastes are required to maintain specific minimum distances between the TSD units and public ways, streets, and property lines. In particular, facilities treating or storing ignitable wastes in tanks must meet buffer zones specified by the National Fire Protection Association Code. The specific reference for the NFPA requirements is discussed in the guidance for tanks.

Explosive Wastes

The regulations also present buffer zone requirements for dangerous wastes that are explosive. Treatment or storage of these wastes must be provided buffer zones equivalent to the Uniform Fire Code's American Table of Distances for Storage of Explosives, Table 77-201, 1979 edition.

New Land-Based Facilities

The buffer zone requirements also present minimum distances that new land-based TSD units are required to meet. The minimum distance is based on the travel time of the wastes from the active portion of the facility to the nearest downgradient well or surface water used for drinking water. The travel times must be longer than 3 years for DW wastes and 10 years for EHW wastes. These buffer zone requirements will likely be changed by the new siting standards currently being developed.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the buffer monitoring zone requirements.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the 616 NRDWSF buffer zones was determined through observation of the facility and interviews of the facility operators.

The 616 facility is located in the 600-Area next to the 200-W Area on the Hanford Site. The facility is located several miles from the nearest public way, street, or property line. The site is within a few miles of the Columbia River.

#### **CONCLUSIONS AND RECOMMENDATIONS**

- o (Ignitible or Reactive Wastes) The facility location provides adequate buffer zones for the storage of ignitible or reactive wastes.

**CLOSURE**  
**40 CFR 265 SUBPART G**

**REGULATIONS AND REQUIREMENTS**

Closure Requirements

When dangerous waste TSD facilities are shutdown or taken out of service, they must be properly "closed". Closures of TSD facilities are usually aimed at cleaning up all hazardous wastes at the facility and restoring facility to an uncontaminated condition. When it is not possible to remove all dangerous wastes (referred to as "clean closure"), the owner/operator must undertake post-closure care of the facility site.

Performance Standard The regulations set forth a closure performance standard that applies to all facilities. This performance standard requires the owner/operator to close the facility in a manner that:

- o Minimizes the need for further maintenance;
- o Controls, minimizes or eliminates releases of dangerous wastes after closure to protect public health and the environment; and
- o Complies with the specific closure requirements for individual waste management units (e.g., containers, tanks) set forth elsewhere in the regulations.

For listed and characteristic dangerous waste, clean closure must be to background environmental levels. For other types of dangerous wastes, the contamination must be removed to a certain level depending on the type of contamination and other factors.

The general intent behind the performance standard is to ensure, to the maximum extent possible when a facility is closed, that it will pose no or

minimal risk to human health or the environment after closure. Clean closure is considered by the regulatory agencies to be the best way to achieve this standard. Even when clean closure is not possible, the same general principle of no or minimal risk will usually guide the agencies' reviews and comments on a facility's closure activities. The focus in these cases will be on minimizing risk to people and the environment, and on setting up the post-closure care program such that the facility will continue to pose no or minimal risk during and after the post-closure care period.

Notifications The owner/operator must notify Ecology and EPA in writing at least 60 days before the date closure of a land disposal unit (surface impoundment, waste pile, land treatment, or landfill unit) is expected to begin. Forty five days notice is required for all other closures.

Once a unit or facility has managed the last volume of hazardous waste, the owner/operator will have 90 days to treat, remove or dispose on-site all hazardous wastes in accordance with the closure plan, and 180 days to complete the remaining closure activities specified in the closure plan. Longer time periods for disposition of hazardous wastes and completion of all other closure activities can be allowed if Ecology and EPA approve them. Within 60 days after closure is completed for a land disposal unit or for an entire facility, the owner/operator must submit a written Certification of Closure to Ecology and EPA.

#### Closure Plan Requirements

The device for accomplishing the closure requirements and performance standard is the closure plan. The owner/operator must prepare a written closure plan and submit it to Ecology and EPA as part of the facility Part B permit application.

Closure plans are typically very detailed. A plan must address partial closure of units at the facility during its active life (e.g., completion and closure of one cell at a landfill) as well as final closure efforts for

the entire facility. The closure plan must take into account all of the different types of waste management units and activities associated with those units when discussing the efforts that will be conducted to close. In addition, certain units (e.g., surface impoundments and tanks without secondary containment) must have contingency plans in the event that intended clean closure cannot be performed.

The closure plan must describe, in detail, the steps necessary to achieve full closure at any point during the facility's active life. This will usually result in the closure plan assuming a worst case scenario, where full closure might have to be conducted with the maximum amount of hazardous waste present on-site, and when the greatest level of waste management activities is occurring.

The closure plan must include at least the following information:

- o A description of how each management unit at the facility will be closed to achieve the closure performance standard;
- o A description of how final closure of the facility will be conducted to achieve the closure performance standard;
- o An identification of the maximum extent of operations that will be ongoing at any given time during the facility's active life (worst case closure scenario);
- o An estimate of the maximum inventory (both types and volumes) of hazardous waste that will ever be on-site during the facility's active life (worst case closure scenario);
- o Descriptions of the methods for remediating the facility during partial and final closure, including at least:
  - Removal, transport, storage (temporary and/or permanent), treatment, and disposal (off-site and on-site, where applicable) of hazardous wastes;

- Identification of the type(s) of off-site waste receiving facilities, where applicable;
  - Steps needed to remove or decontaminate hazardous materials (wastes, constituents and residues) such as containment systems, equipment, structures and soils that may be contaminated;
  - Sampling and analysis that will be used to determine the extent of decontamination needed to meet the closure performance standard; and
  - Other activities that may be needed to satisfy the closure performance standard, such as groundwater monitoring, leachate collection, and run-on/run-off control; and
- o A schedule for closure of each management unit (partial closure) and for final closure, including at least the total time needed to close each unit and for intervening activities so the closure progress can be tracked.

When preparing the closure plan contents described above, the owner/operator must account for, in detail, the activities that will actually need to be conducted to close the facility. Closure can be broken down into the following general activities:

**Material Removal**

- Sampling
- Analysis
- Remediation
- Facility Reclamation

**Materials Staging and Disposition**

- Containment
- Preparation for Disposal
- Transport
- Ensuring TSD Receipt

Closure Certification

- Records
- Reports

Specific discussions and guidance for each of these areas are provided in the following paragraphs.

Material Removal are all efforts oriented specifically to removing all hazardous wastes, waste constituents, and residues from the facility which are not intended to be left behind after closure. This must include decontamination measures, efforts to demonstrate clean closure, (except for landfill portions of the facility) and final condition of the facility upon closure.

Sampling activities must be directed at proving to Ecology and EPA that no hazardous materials (wastes, constituents, and residues) will remain after closure except those that are intended to be left in place.

Analysis represents all of the different tests that will be performed to demonstrate that hazardous materials are not left after closure, or to show that only those materials intended to remain in place are actually present after closure. It must also include chain of custody and QA/QC procedures.

Remediation provides a description of the efforts that will be undertaken to actually remove hazardous materials from the facility and remediate those areas where hazardous materials are not intended to remain. It will specify where and when analysis to check for clean closure will be performed. It will also specify worker, equipment, and other decontamination and safety procedures that will be followed.

Facility Reclamation should address all of the efforts that will be undertaken to return the facility to the appearance and uses of surrounding areas. For landfills, this will particularly address areas such as final covers and revegetation.

Materials Staging and Disposition should address all activities associated with containing and preparing, for final disposition, the wastes generated during closure. The methods of transport, likely disposal practices, estimated volumes of hazardous materials to be disposed of, and disposal verification should be addressed.

Containment should describe how the various forms of containment (e.g., container, tank) will be provided for different types of hazardous materials (including contaminated equipment) while closure is conducted. Hazardous waste containment procedures will likely need to be followed unless the wastes are shown to not be hazardous.

Preparation for Disposal will likely involve arranging for a disposal facility to receive the hazardous materials generated during closure. On-site disposal may be an option for landfills. If this is to be done, then the disposal methods should be accounted for.

Transport should provide a discussion of how off-site transport and disposal will actually be accomplished for materials that will be shipped off-site.

Ensuring TSD Receipt is primarily a matter of checking the hazardous waste manifests (or other documents if only on-site transport is involved) to confirm that the receiving TSD facility has accepted the hazardous materials.

Closure Certification will address those final activities necessary to document and demonstrate that the closure plan was followed and that the closure performance standard has been satisfied.

Records should be sufficient to technically support the certification of closure that must be submitted to the regulatory agencies.

Reports will essentially be all written communication with Ecology and EPA necessary to certify that closure has been performed in accordance with the

approved closure plan and that the closure performance standard has been met.

The owner/operator must maintain the closure plan to ensure that it is current and accounts for the anticipated closure activities. The owner/operator must submit a request for modification of the permit to amend the closure plan when the facility operations change causing a change to the closure procedures or the closure schedule changes.

#### Post-Closure Requirements

A dangerous waste TSD facility generally must comply with the post-closure requirements if hazardous waste remain at that facility after closure at levels in excess of the clean closure criteria. Post-closure is essentially a period of time (typically 30 years) after closure during which certain caretaking activities must occur. The regulations are directed primarily toward land disposal units such as landfills where the dangerous wastes are anticipated to remain after the facility is shutdown. However, certain surface impoundments, tanks, and waste piles also need to have contingent post-closure care even though it may be the intent to remove all wastes at closure.

Intent of Post-Closure The general intent of the post-closure care period is to allow for the detection of failures in the waste containment system after the facility has been closed. Such failures could be indicated by, for example, excessive cap settling, groundwater contamination, or increasing leachate in the collection system. During the post-closure care period, the owner/operator must ensure that the facility's post-closure monitoring and maintenance activities are performed in a manner that will allow for detection of failures (and incipient failures) in the land disposal unit(s). Post-closure use of the property must not disturb the integrity of the waste containment system (e.g., liners, caps) or the monitoring systems.

Notification Requirements When a land disposal unit or facility is closed, two notices must be given. The first required notice is a notice, including a survey plat, to the local land authority, and to Ecology and EPA. The second required notice is a notice in the deed to the property. The basic purpose of these notices is to ensure that the presence of hazardous wastes at the site is identified to future users and purchasers of the property, and to prevent potential disturbance of the disposal units by future activities at the site.

Post-Closure Plan Requirements

The primary device for ensuring that the closed land disposal units are not disturbed, that monitoring is continued, and that maintenance of the closed unit(s) is timely and appropriate is the post-closure plan. The post-closure plan must be submitted to Ecology and EPA as part of the facility's permit application and, upon approval, becomes a condition of the permit. The plan must describe in detail the activities that will be conducted during the post-closure care period, and must address the specific post-closure requirements for each type of unit (e.g., waste pile, landfill).

For each disposal unit at a facility, the post-closure plan must identify the activities (and frequency of those activities) that will be conducted after closure of the unit. The plan's contents must include at least:

- o Descriptions of the planned groundwater monitoring activities and frequencies;
- o Descriptions of the planned maintenance activities and frequencies to ensure:
  - Integrity of the containment structures (e.g., cap);
  - Function of the facility monitoring equipment; and

- o The name, address, and phone number of the person or office to contact regarding the unit or facility during the post-closure care period.

The post-closure plan must be followed until the end of the post-closure care period. At the end of post-closure care for each disposal unit, the owner/operator must submit to Ecology and EPA a certification that post-closure care was performed in accordance with the post-closure plan.

When preparing the post-closure plan for a unit or facility, the owner/operator should consider all of the activities that are likely to be necessary to actually provide post-closure care for the unit or facility. The following activities should be considered and, as appropriate, addressed in the plan.

#### Monitoring and Inspection

- Leachate
- Groundwater
- Containment System Integrity

#### Maintenance and Corrective Measures

- Containment Systems
- Monitoring Systems

The following paragraphs provide brief discussions of the types of considerations to include when addressing these activities in the post-closure plan.

Monitoring and Inspection should identify all activities necessary to detect escape of hazardous wastes, constituents, or residues into the environment, and to detect any breakdown in the integrity of the containment systems or the monitoring systems. Containment systems include liners, caps, covers, and in the case of land treatment units, the treatment zone itself.

Leachate may be generated during the post-closure care period. The leachate collection system should be inspected for excessive leachate

generation, failure of the leachate removal system, or other related problems that could indicate loss of hazardous materials (wastes, constituents, or residues) to the environment.

Groundwater monitoring must be conducted during post-closure. The post-closure plan should be in compliance with the state and federal groundwater monitoring regulations. Inspection of the monitoring wells and locations should be conducted to ensure that they are maintained in good condition.

Containment System Integrity should be monitored and inspected to detect failures when they occur, and to identify signs of incipient failure so that preventive efforts can be undertaken prior to failure. Signs of potential failure to look for include: excessive settling of the cap; excessive erosion or loss of vegetation; damage to the cap from burrowing animals or plants; and, for land treatment, unexpected changes in the treatment zone.

Maintenance and Corrective Measures should specify the actions that will be taken in the event that the containment systems fail or may be failing, that the monitoring systems are not operating correctly, or that monitoring indicates potential escape of hazardous materials to the environment.

Containment Systems should be corrected if signs of failure or incipient failure occur, and should be maintained to prevent failure from becoming a potential problem. For example, maintenance and corrective measure for the containment systems might include: maintaining the vegetative cover; maintaining any security systems in place; replacing soils lost through erosion; and even digging up an entire cell to replace the liner system.

Monitoring Systems should be corrected if problems occur that compromise their operation, and maintenance and corrective measures should be planned for in the event that the monitoring systems indicate release of hazardous materials to the environment. For example, consideration should be given to what actions will be taken if: the leachate detection system fails; or, the groundwater monitoring system detects hazardous constituents.

## **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD unit in the Part A permit application for storage of dangerous waste containers. Thus, the storage facility must develop and maintain a detailed closure plan to ensure proper closure when the unit is taken out of service.

## **INFORMATION REVIEWED AND CURRENT STATUS**

The current status of the 616 NRDWSF closure plan was determined through interviews with facility personnel and review of the following document:

- o Section I November 25, 1985, "Closure and Post-Closure Requirements", submitted with Part A permit applications, Rev. 0.

A detailed, site-specific, stand alone closure plan has not been written for the 616 NRDWSF. The existing closure plan is a generic document which states that "clean closure" will be accomplished at 616 NRDWSF in accordance with the closure performance standards and other applicable closure requirements. The closure plan does not contain details on how this will be accomplished at 616 NRDWSF.

## **CONCLUSIONS AND RECOMMENDATIONS**

- o (Closure Plan) Prepare a detailed closure plan for the 616 NRDWSF taking into account all applicable closure requirements. The level of detail required must be such that closure could commence in accordance with the closure plan at any time without the need for further planning or modifications to the plan; and
- o (Post-Closure) Post-closure care of the 616 NRDWSF is not required at this time because "clean closure" is anticipated and unit is not a land facility. The closure plan must address, in detail, how "clean closure" will be achieved. If this can not be done to the satisfaction

of the regulatory agencies a contingent post-closure plan will likely be required.

**FINANCIAL REQUIREMENTS**  
**40 CFR 265 SUBPART H**

**REGULATIONS AND REQUIREMENTS**

Dangerous waste TSD facility owners/operators must demonstrate that they have sufficient financial assets to ensure that the facility can be properly closed and, if necessary, and properly maintained during post-closure. The documentation required can include certificates of insurance, proof of self insurance, or sufficient liquid financial assets. In addition, owners/operators must have insurance for their facilities to cover accidents, releases, and other incidents.

The regulations specifically exclude federally owned facilities from the financial requirements. It has been assumed that governmental agencies have sufficient financial ability to properly close their TSD facilities, pay for post-closure care where necessary, and cover costs arising from unexpected incidents. Since the Hanford Site is a federally owned facility, it is exempt from the TSD financial requirements.

**CONCLUSIONS AND RECOMMENDATIONS**

- o Although not a requirement of the regulations, development of a closure cost estimate is recommended to facilitate federal budget acquisition prior to closure. In addition, current state regulations require operators at federal facilities to comply with the financial requirements under final status.

USE AND MANAGEMENT OF CONTAINERS  
40 CFR 265 SUBPART I

REGULATIONS AND REQUIREMENTS

Containers and container areas that are used to store or treat dangerous wastes must satisfy certain minimum standards. Containers are defined as portable devices in which dangerous wastes are treated or stored. Thus, items such as tank trucks and tank trailers, as well as typical drums, are considered containers. The regulations apply to both containers and container areas.

The requirements for containers and container areas include standards for:

- o Container integrity;
- o Compatibility between the container and the waste(s);
- o Inspection of the containers and container area;
- o Management of ignitable, reactive, or incompatible wastes in containers;
- o Labeling of the containers; and
- o Secondary containment.

Container Integrity

Containers used to handle dangerous wastes must be in good condition. The container should not be damaged structurally and should be relatively free of corrosion. Other types of distress that must be prevented include dents, pitting, punctures, and separation of seams. Containers that experience these kinds of distress, leak, or are otherwise unable to

contain the wastes safely, must be emptied of dangerous wastes and not used until sufficiently repaired.

#### Waste/Container Material Compatibility

Wastes handled in the containers must be compatible with the container. Contact between the container and the wastes can not result in excessive heat, fire, explosion, or any other reaction that will damage the container. Similarly, the wastes must be compatible with the materials of construction of the container area itself. For example, if a particular waste generates toxic gases when it comes into contact with concrete, the floor of the container area should not be constructed of concrete.

The waste analyses plan demonstrates that the container/waste compatibility requirements are satisfied. It should show that the wastes, the container materials, and the container area materials are compatible. The facility operating procedures should include what particular type of containers should be used for each type of dangerous waste generated at the facility.

#### Management of Containers

Containers handling dangerous wastes must be managed to prevent damage to the container and prohibit release of the waste from the container. Specifically, the regulations require that containers be kept closed at all times except when waste is being added or removed. The lids of the containers should be secured so that if the container were to tip, wastes would not spill. Other practices which are consistent with these requirements include:

- o Place drums vertically rather than horizontally so that the drum is more stable and not able to roll;
- o Elevate containers off of the floor so that liquids will not accumulate around the base of the container;

- o Stack drums no greater than 2 high to reduce the potential for the drums to become unstable and fall; and
- o Protect container storage areas from damage by objects such as fork-lift trucks by using barriers or fences.

### Inspections

Containers and container areas must be inspected at least weekly for leaks, spills, corrosion, or container distress. The inspection program should include inspection checklists which give detailed, complete guidance to the inspector regarding what specific items are to be inspected and what they are to be inspected for. The checklists should also consider the specific area to be inspected. For example, an inspection checklist for a container area where drums are stacked on pallets should include checking for rot in the wood pallets which may result in failure of the pallet and falling of the container.

The inspection checklists must be maintained in the operating file. The inspection logs, checklists, and other records should be of sufficient detail to allow an inspector to quickly determine that the facility is satisfying the container and container area inspection requirements.

### Ignitable, Reactive, or Incompatible Wastes

Containers that handle ignitable or reactive wastes must be managed in accordance with special requirements for such types of wastes. The regulations specifically require that containers holding ignitable or reactive wastes be placed at least 50 feet from the facility property line. The wastes must also be handled in a manner that prevents the ignitable or reactive wastes from igniting or reacting. This includes keeping the containers away from open flames or other sources of heat.

Incompatible wastes are not to be mixed together in a container. Dangerous wastes are not to be placed in a container that once held an incompatible waste unless the container is washed or unless the wastes placed in the container will not generate uncontrolled reactions, fumes, heat, etc. In addition, containers which contain incompatible wastes must be stored in areas that are separated by a dike, berm, or other device that prevents the mixing of the incompatible wastes.

In general, the storage or treatment of ignitable, reactive, or incompatible wastes in containers must adhere to the requirements of WAC 173-303-395, Other General Requirements.

#### Labeling

The Washington State addenda to interim status container requirements include specific requirements for labeling of containers handling dangerous waste. The containers must be marked with a label which notes the contents of the container and the risks associated with the wastes.

#### Secondary Containment

The Washington State dangerous waste regulations present secondary containment requirements for interim status container areas. These requirements are considered addenda to the federal Subpart I requirements.

Container areas that were constructed or installed after September 30, 1986 are required to have secondary containment. Furthermore, existing container areas that the regulatory agency believes present a potential threat to public health or to the environment can be required to have secondary containment by the agency. A history of releases from the containers or repeated nonconformance with the container regulations are typical justifications for the agency to require secondary containment for existing container areas.

Secondary containment for container areas typically consists of an impervious floor with impervious curbs. The materials used to construct the containment area must be compatible with the wastes handled in the containers. Secondary containment areas must be protected from run-on. In other words, rainfall, snow melt, or other water must be prevented from flowing in to the containment area. Similarly, the containment must have sufficient volume to contain the rainfall from a 25-year, 24-hour storm without allowing the precipitation to flow out of the containment area.

Liquids accumulated in the containment area must be removed in a timely manner. If accumulated precipitation is drained out of the containment area, the draining should occur only after the accumulated liquid is determined to be non-dangerous. The drainage valve should be maintained in a locked position and only opened to drain non-dangerous liquid.

#### **APPLICABILITY**

The 616 NRDWSF has been identified as a TSD container storage facility in the Part A permit application. Thus, the 616 NRDWSF must satisfy the container and container storage area standards. Furthermore, some of the dangerous wastes stored at the facility are ignitable or reactive and thus, the facility must satisfy the container requirements for ignitable or reactive wastes.

#### **INFORMATION REVIEWED AND CURRENT STATUS**

The current status and condition of the 616 NRDWSF containers and container areas was determined through interviews of the facility personnel and observation of the containers and container areas.

Containerized dangerous waste is stored in six cells within the 616 facility. The cells are segregated and are used to separate the waste according to their specific nature; acids, oxidizers, caustics, combustibles, flammable, and highly flammable. The containers stored in

the facility include 5, 30, 55, and 85-gallon metal drums, fiber boxes, and paint cans. The containers are anticipated to be compatible with the wastes.

The floors and walls of the cells are sealed concrete designed and constructed to minimize cracking. The containers are placed directly on the floor of the cells on a premarked spot. The location of the spots allows immediate access to each container. Containers are typically not stacked. If stacking is necessary, the containers are stacked a maximum two high. Containers in the flammable cell are not stacked.

The 616 facility is inspected daily for proper ventilation, signs of leaks or spills, and locked doors. The containers, containment structure, and emergency equipment are inspected weekly for evidence of distress, signs of leaks or spills, and proper working condition. Inspection checklists are used for both inspections and the completed logs are maintained in the facility operating records.

Ignitable dangerous wastes are stored in the flammable cells at the western end of the building. The wastes are protected from ignition through strict procedures, spark proof equipment, and explosion proof lighting. The facility is inspected at least annually by the fire department. Each pair of cells are separated by a fire wall and a concrete curb to prevent mixing of potentially incompatible wastes.

The containers are marked with a label which notes the contents of the containers and the associated major risks.

Since the facility was in operation prior to September 30, 1986, secondary containment is not required under interim status. Secondary containment is provided by the concrete floor and curbs. The joint between the wall and the curb are sealed. The floors of each cell are sloped toward collection trenches which accumulate any leaks or spills.

**CONCLUSIONS AND RECOMMENDATIONS**

- o The use and management of containers at the 616 NRWSF satisfy the container and container area requirements.



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