



START  
SEP 17 1995

File Name \_\_\_\_\_  
 Integrated \_\_\_\_\_  
 Department of Energy RCRA \_\_\_\_\_ CERCLA \_\_\_\_\_  
 Richland Operations Office P.O. Box 550 WQ \_\_\_\_\_ AQ \_\_\_\_\_  
 Richland, Washington 99352  
 SEP 22 1995  
 Administrative \_\_\_\_\_  
 EFSEC \_\_\_\_\_ N-Reactor \_\_\_\_\_  
 Milestones \_\_\_\_\_  
 Cross-reference \_\_\_\_\_

95-LMD-170

Mr. Steve M. Alexander, Manager  
 Perimeter Area Section  
 Washington State  
 Department of Ecology  
 1315 W. 4th Avenue  
 Kennewick, WA 99336



Dear Mr. Alexander:

**MODIFICATION OF THE HANFORD FACILITY DANGEROUS WASTE PART A PERMIT TO ADDRESS PROCEDURAL CLOSURE OF THE THERMAL AND PHYSICAL/CHEMICAL TREATMENT TEST FACILITIES**

This letter requests modification of the Hanford Facility Dangerous Waste Part A Permit to address procedural closure of the Thermal Treatment Test Facilities and Physical/Chemical Treatment Test Facilities at the Pacific Northwest Laboratory (PNL). This request is being made in accordance with Section 6.3.3 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Action Plan. This section of the Tri-Party Agreement Action Plan outlines the requirements for obtaining procedural closure for those treatment, storage, and disposal (TSD) units "...which were classified as being TSD units, but were never actually used to treat, store, or dispose of hazardous waste, including mixed waste, except as provided in 173-303-200 WAC or 173-303-802 WAC..." As discussed with Jeanne Wallace of your staff, submittal of this request and the attached certification statements and supporting information fulfills the completion requirements for TPA milestones M-20-42-A and M-20-43-A.

In accordance with Section 6.3.3 of the Tri-Party Agreement Action Plan, this letter notifies the Washington State Department of Ecology (Ecology) in writing that the Thermal Treatment Test Facilities and Physical/Chemical Treatment Test Facilities never handled hazardous waste. In addition, a Hanford research and development and demonstration study conducted by the U.S. Department of Energy Richland Operations Office (RL) and its contractors did not identify any future activities for the units. Therefore, we request that Ecology inform the U.S. Environmental Protection Agency Resource Conservation Recovery Information System that these TSD Units are now "closed." The Part A, Form 3 for each of these units will be stamped with "CLOSED" and reissued with the date that Ecology responds to this letter. Note, that the 325 Shielded Analytical Laboratory, facilities and activities, previously operated under the Physical/Chemical Treatment Test Facilities

Mr. Steve M. Alexander  
95-LMD-170

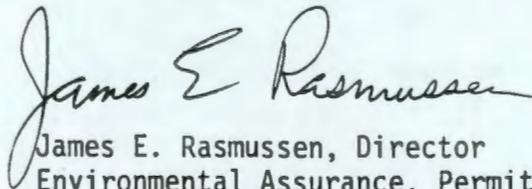
-2-

Part A Permit Application, Form 3 have been transferred to the 325 Hazardous Waste Treatment Unit Part A Permit Application, Form 3. Also, the 324 Radio Chemical Engineering Cell Complex is being addressed under a closure plan and Tri-Party Agreement Milestone M-89.

Attached is supporting information in the form of Technical Data Synopses for the procedural closure of each unit. Attached to each synopsis is a signed certification, using wording specified in WAC 173-303-810(13), from RL (Owner/Operator) and PNL (Co-operator) attesting that the unit was never actually used to treat, store, or dispose of hazardous waste, including mixed waste, except as provided by 173-303-200 WAC or 173-303-802 WAC.

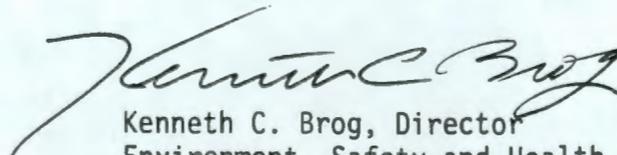
Please review the enclosed information as appropriate. If a facility inspection is needed, you may contact Mr. C. R. Delannoy RL on 373-9017 or Mr. M. H. Schlender of PNL on 376-8795. These individuals also may be contacted if you have any questions or need additional information regarding these requests.

Sincerely,



James E. Rasmussen, Director  
Environmental Assurance, Permits,  
and Policy Division  
DOE Richland Operations Office

LMD:MAB



Kenneth C. Brog, Director  
Environment, Safety and Health  
Pacific Northwest Laboratory

Attachments

- (1) Thermal Treatment Test Facilities  
Procedural Closure, Certification  
Statement and Supporting Information
- (2) Physical/Chemical Treatment Test  
Facilities Procedural Closure,  
Certification Statement and Supporting  
Information

cc: B. Burke, CTUIR

9613400.0959

ATTACHMENT 1

THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE  
CERTIFICATION STATEMENT  
AND SUPPORTING INFORMATION

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

**1.0 INTRODUCTION**

**1.1 Purpose**

The purpose of this synopsis is to support the request for procedural closure by the Department of Energy, Richland Operations Office (RL), and Pacific Northwest Laboratory (PNL), of the Washington State Hazardous Waste Management Act (Chapter 70.105 RCW) Permitted **Thermal Treatment Test Facilities** in accordance with Section 6.3.3 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Action Plan. Information discussed below will demonstrate that the **Thermal Treatment Test Facilities** have never treated, stored, or disposed of dangerous waste, including mixed waste, except as provided by WAC 173-303-200, 173-303-802 or 173-303-071(1) and (s). There are no plans to manage dangerous or mixed waste at the facilities except as provided by WAC 173-303-200 or 173-303-802. The procedural closure of the facilities will modify the Hanford Facility Permit Application by eliminating the **Thermal Treatment Test Facilities** Form 3 from that document.

**1.2 Previous Application Submittal**

The initial Part A Permit Application (Form 3) for the unit was submitted to the Washington State Department of Ecology (Ecology) by RL on May 19, 1988. This Form 3 was submitted based on an agreement between RL, Ecology and the Environmental Protection Agency that groups of similar technologies could be permitted together, regardless of the physical location of the technologies and the types of wastes to be treated. As a result of a Research Development and Demonstration (RD&D) Permitting Strategy Study conducted by RL, PNL, and Westinghouse Hanford Company, no thermal treatment technologies or activities were identified that needed regulatory permitting at this time, and no future need to obtain a "generic" permit for demonstrating the thermal treatment technologies was identified.

**2.0 FACILITY DESCRIPTION**

Thermal treatment test activities were projected to occur at the 324 Building Engineering Development Laboratory (EDL), the EDL high bay, the hot-cell complex of the 324 Building, as well as at the 600 Area In-Situ Vitrification (ISV) test site (located just west of the 300 Area), the 116-B-6-1 crib, and other selected laboratories in the 324, 325, and 331 buildings.

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

### **3.0 PROCESS INFORMATION AND DATA GATHERING**

#### **3.1 Operations History**

Waste Management activities in the facilities have consisted solely of the management of hazardous waste in accordance with the generator requirements of WAC 173-303-200. Thermal treatment test activities that have been performed were accomplished with simulated waste streams and/or treatability study samples and samples for characterization. The simulated waste streams are not regulated by WAC 173-303. Residues from thermal treatment activities on simulated waste streams were managed in accordance with WAC 173-303 requirements and PNL waste-management practices.

- The samples for characterization are not subject to the requirements of WAC 173-303 as long as the conditions of WAC 173-303-071(3)(1)(i) through WAC 173-303-071(3)(1)(iii) are complied with.
- Samples undergoing treatability studies are only subject to the requirements of WAC 173-303-050, WAC 173-303 145, WAC 173-303-960 if the conditions of WAC 173-303-071(s)(i) through (xiii) are complied with.

#### **3.2 Data Gathering for Thermal Treatment Part A Activities**

Records review, certification statements, and field inspections were used to establish whether regulated waste treatment did or did not occur during the 1988-1995 time period (See attached Administrative Record Inventory). The approach used and the results of this data gathering effort is described in the following sections.

##### **3.2.1 Approach**

Three primary sources of information were used or examined to provide assurance to PNL senior management, RL, and Ecology that the certification statement provided is true, accurate, and complete. These information sources included:

- Review of administrative controls/records used for operations under the permit application portions in question, including RL/PNL Memorandum of Agreement dated 8/15/88; PNL-MA-8, Chapter 14 dated 8/88; and PNL internal documents.

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

- "Management and Implementation Plan for Compliance with RCRA Part A Permits" dated June 1988.
  - Memo, W.R. Wiley to Distribution, PNL RCRA Permit Compliance" , dated 7/14/88.
  - "Environmental Compliance Management Plan" dated February 7, 1990.
  - PNL business records listing authorized projects from the period 1987 - 1995.
  - PNL corrective action databases for findings (internal and external) of non-compliance related to treatment activities.
  - PNL Environmental Compliance, DOE-RL inspection reports.
- Obtaining statements from Operations/Project/Program Managers and Principal Investigators that no operations regulated under the permit application portions in question took place (See Attachment A). Guidance to those receiving requests for statements included advisement for verification of the statement by utilizing the following tools:
    - Interviews/consultations with PNL staff involved with Part A application activities.
    - Spot checks of operational logs, laboratory notebooks, records and files of projects of interest.
    - Review of organizational records (plans) for projects involving the treatment of wastes or waste stimulants.
  - An on-site review of all facilities included in the procedural closure requests / Part A Applications. These reviews or field evaluations would serve to verify contractor submitted information requesting procedural closure. Participation included RL, Ecology, and PNL.

### **3.2.2 Data Gathering**

The results of the data gathering supported the contention that no regulated activity took place under this Part A Application. Research and development activity was guided by administrative controls and took place with either simulants (see Section 3.3) which are not regulated or with wastes within treatability exemption limits allowed by WAC 173-303-050, WAC 173-303-145,

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

and WAC 173-303-960. The results of the data gathering activity is summarized in the following sections. Attachment B illustrates the overall process used for the data gathering task.

Records Review

A review of the administrative documents used for operations under the permit application indicated that these institutional controls would have required PNL staff involved in treatment technology testing to have approval from PNL staff knowledgeable of WAC requirements before initiation of the project. Without administrative approvals in place funding authorization would be withheld and the project would not go forward. These controls would also ensure that proper notification of regulated activities would be recorded. Certifications provided by those involved with the filing and administration of the permit application also supported this conclusion.

Key word searches of PNL business records were conducted to identify projects that could have been candidates to activate the treatment component of Part A Application. For this inquiry it was assumed that all PNL administrative requirements were met to allow the project to have funding authorized. Therefore, the business records represent the "universe" of all projects conducted based on funding authorization.

The records search (business records) included all 1830 projects (under Hanford Dangerous Waste Identification Number ) back to 1987 (one year before the May 1988 permit filing). The initial search of the database was conducted using a list of known project managers who had been involved in this type of work, including both current and former employees. The search summarized all records where the payroll number matched that of the list of project managers or principal investigators provided. The second phase of the search involved the use of keywords or keyword strings in the scope statement to look for technology-specific projects. An example of how this works is as follows; string used ==> "% WASTE %", returns project listings with scope statements including hazardous waste, mixed waste, waste evaporation, waste dissolution, waste water, etc. This information was used to retain projects for closer evaluation and to eliminate others from consideration. This database evaluation was also used to identify other Principal Investigators (PIs) or Project Managers (PMs) with potential treatment testing under the Part A Application. As a result of reviewing these records in detail, no projects were found which required the Part A Application.

Other databases reviewed included Corrective Action Tracking System specific to all deficiencies/non-compliances in PNL data bases related to environmental issues. Another internal compliance database inquiry included topics

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

(objects); air sample, asbestos abatement, CERCLA, Clean Air Act, Environmental, ES&H, FEMP, NEPA, NPDES, RCRA, Water, and PNL Waste Management and Environmental Compliance. The records are limited to conditions noted during the period 1990-1995. The total number of records reviewed was greater than 1000 entries. Both databases confirmed that no treatment activity took place that would have required the activation of the Part A Application.

Other records reviewed included both external and internal inspection and compliance reports, individual project files and logbooks, project workplans or reports, and state notification files for DW treatability studies. The compliance reports were selected to isolate the facilities listed in the Part A application, specifically the 325, 331, 324 Buildings, the 300 West Area, and the 116-B-6 Crib.

Certification Requests

A total of 25 individuals received a memorandum requesting a written certification and information related to technology treatment activity. The initial distribution list for the memorandum was based on the recommendations of an ad hoc panel comprised of PNL staff and management with institutional knowledge and history of the Part A Application. Two additional lists were developed based on the certification information received from the first list and from the numerous phone interviews and discussions held with facility operations personnel/managers, compliance personnel, and PIs/PMs with knowledge of the treatment technologies included in the Part A Application.

The certification information received supported the contention that the Part A Application can be procedurally closed and that no treatment activity took place that would have required the Part A Application. The information provided showed that treatment testing did occur in PNL facilities during the period from 1988-1995; however this activity was either conducted under another regulatory authorization (CERCLA Treatability Study, Interim Status Unit - Part B, closure plan) or within treatability exemption limits. Certifications were also received from two of the originators of the Part A applications filed in 1988. Information provided with these certifications reaffirmed that the filing of the Part A Application was protective in nature for activities which were largely "anticipated" and not actually planned.

Field Evaluations

Specific buildings and testing areas on the Hanford Site that were identified in the Part A Application were visited to determine if evidence remained of treatment activity that was regulated under the application. As outlined in the Part A Application, the field inspections were limited to the 116-B-6

**Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

Crib, the 300 West Area, and the 325, 324, and the 331 Buildings. As a result of these evaluations, numerous records were gathered to determine if secondary waste streams from existing treatment technologies are regulated under the Part A Application or if proper waste decontamination was performed to preclude waste storage following the completion of treatment testing. Based on the information gathered during and as a result of the field inspections, no treatment activity took place that would have required the Part A Application.

### **3.3 Waste Designation and Waste Management**

Waste residues from activities covered under the sample exclusion were returned to the generator and treatability test study exclusion residues were sent back the generator or managed in accordance with WAC 173-303 generator requirements and PNL waste-management practices. No treatment activities involving wastes above the treatability studies sample exclusion quantity limits have been conducted.

In April 30, 1990, letter from Timothy Nord, Ecology, to Ronald Gerten, RL, Ecology made a determination that the material used in a pilot-scale in-situ vitrification of a tank containing simulated mixed-waste sludge was subject to the Washington State Dangerous Waste Regulations (WAC 173-303). As a result, that test fell within the criteria of the Interim Status Part A Permit for PNL's **Thermal Treatment Test Facilities**. Ecology based their determination on the following two criteria:

- The materials (simulated waste) used in the test are solid waste pursuant to WAC 173-303-016(4)(c) which states "materials are solid waste if they are abandoned by being accumulated, stored, or treated (but not recycled) before or in lieu of being abandoned by being disposed of, burned or incinerated."
- The materials' composition meets the criteria for dangerous waste under WAC 173-303-084, dangerous waste mixtures.

The materials when placed into the ground were not used in a manner constituting abandonment by being disposed of, burned or incinerated. They were not left in place, but subsequent to the test were removed from the ground with a determination that the resulting mass was non-hazardous, and that no residue or contamination was left at the site as a result of the test. Recent discussions with Ecology have determined that Ecology is now in agreement with RL/PNL interpretations regarding the regulation of simulants. Ecology representatives have provided written concurrence that simulants are

Thermal Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis

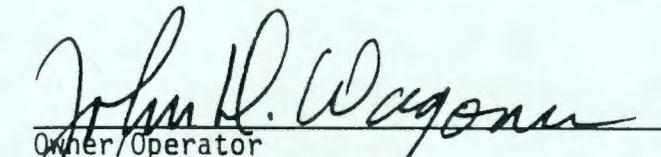
not regulated as wastes and that the 1990 ISV Pilot Scale test did not constitute disposal (See Attachment C).

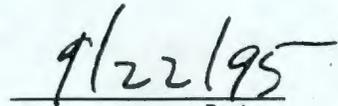
**4.0 SUMMARY**

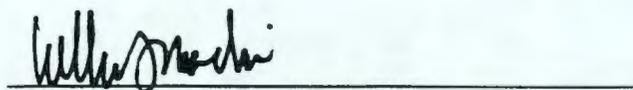
Thermal treatment test activities that have been conducted at the Hanford Site and that were subject to the Washington State Dangerous Waste Regulations, were conducted with simulants or with waste quantities falling within the treatability study sample exclusion. No activities have been conducted within the scope of the **Thermal Treatment Test Facilities** Part A Permit Application which require the preparation and submission of a Part B Permit Application, nor are any planned. RL and PNL request that procedural closure in accordance with Section 6.3.3 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Action Plan be implemented.

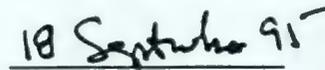
**5.0 THERMAL TREATMENT TEST FACILITIES PROCEDURAL CLOSURE TECHNICAL DATA SYNOPSIS CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

  
\_\_\_\_\_  
Owner/Operator  
John D. Wagoner, Manager  
U.S. Department of Energy  
Richland Operations Office

  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Co-operator  
William J. Madia, Director  
Pacific Northwest Laboratory

  
\_\_\_\_\_  
Date

Administrative Record Summary  
for  
Procedural Closure of Thermal Treatment Test Facilities  
and Physical/Chemical Test Facilities

<u>Volume</u>	<u>Section</u>	<u>Description of Records</u>
1	1	Certification Statements and Checklists
1	2	CATS Summary Report
1	3	EC Compliance Report Review Summary
1	4	PNL Business Records Database Search (Projects)
1	5	PNL Business Records Database Search (Project Managers)
2	1	Phone (Telecon) Conversation Records
2	2	Report: Electro Chemical Destruction of Wastes, L. Bray.
2	3	Listing of Facility Locations for Part A for Physical/Chemical and Thermal Testing
2	4	Facility Drawings for Locations Identified in Part A Applications
2	5	Decontamination Records/Information Regarding Acid Tank in 324 Building
2	6	Administrative Planning Documents for Part A Implementation (Management Plan, etc)
3	1	Part A Applications and Planning Documents for Procedural Closure of Part A Applications
3	2	Correspondence, RL, Ecology, and PNL
3	3	PNL Non-Operational Unit Managers Meeting Minutes
3	4	Historical Treatability Study Notification and and Summary Records for Treatability Studies (Annual and Quarterly Reports)
3	5	Ecology Requests for Information
3	6	Information Provided to Ecology
4	1	Internal/External Compliance Database Search Report
4	2	Compliance Reports for 324,331, 325 Buildings

9613400.0969

**Attachment A**

**Certification Request Memorandum and Distribution**

Distribution Lists for Certification Requests for Physical/Chemical and Thermal Treatment Part A Applications:

Distribution:

List 1 (both PC/TT)

WJ Bjorklund<sup>2</sup>  
WF Bonner  
RA Brouns  
TM Brouns<sup>3</sup>  
JL Buel  
PA Gauglitz  
JN Hartley<sup>2</sup>  
WO Heath  
DE Knowlton  
DA Lamar  
HD Massey<sup>1</sup>  
DA McAdie<sup>1</sup>  
JM Perez  
KA Poston<sup>2</sup>  
HW Slater<sup>2</sup>  
TL Stewart<sup>2</sup>  
JE Surma  
ST Thornton<sup>2</sup>  
PJ Turner

List 2

LK Holton (PC)  
GJ Lumetta (PC)  
LC Thompson (TT<sup>2</sup>)\*  
V Fitzpatrick (TT<sup>2</sup>)\*

List 3

EG Baker (PC)  
CL Timmerman (TT<sup>2</sup>)\*  
JK Luey (TT)  
DC Elliott (PC)  
RA Merrill (PC/TT)  
T McLaughlin (PC/TT)\*  
HT Tilden (PC/TT)

Legend: PC - Physical/Chemical Part A Certification Request  
TT - Thermal Treatment Testing Part A Certification Request

- <sup>1</sup> - Certification Request Not Applicable to individual identified
- <sup>2</sup> - Certification response included
- <sup>3</sup> - Combined with certification from RA Brouns
- <sup>4</sup> - No response received
- \* - Not employed by PNL



Project Number \_\_\_\_\_

Internal Distribution

kcb:File/LB

Date July 27, 1995  
To Distribution  
From KC Brog *[Signature]*  
Subject PROCEDURAL CLOSURE OF THE THERMAL TREATMENT TEST FACILITIES

The ES&H Directorate is leading an effort to administratively close RCRA hazardous waste permit applications which are of no further use for Laboratory R&D operations. More specifically, we need your assistance to determine if hazardous wastes were ever treated under the regulatory authorization of these permit applications. This communication is intended for those current and former PNL researchers, project managers, facility managers, etc., involved with a Resource Conservation and Recovery Act (RCRA) Part A Permit Application for Thermal Treatment technology testing.

You are requested to assist Pacific Northwest Laboratory (PNL) in establishing whether certain thermal treatment activities were conducted in specified PNL facilities. Your participation will help document whether the thermal treatment activities occurred, close the Permit application and meet a fast approaching Hanford Federal Facility Agreement and Consent Order Milestone.

Your participation is based on:

- Your involvement in the development of thermal treatment technologies at PNL.
- Your support role with projects, programs and/or facilities that planned to conduct thermal treatment activities at PNL.
- Your involvement in the hazardous waste permit application that specified the thermal treatment activities and PNL facilities.

Please complete the procedural closure checklist and certification statement(s) in the attached package and return to MH Schlender by August 11, 1995. Technical/regulatory assistance and some funding is available for completion of this task by contacting MH Schlender. A fact sheet and instructions are provide in the package for your information.

Your prompt attention to and completion of the task items will be appreciated and is critical to support a September 13, 1995 procedural closure certification statement submittal date from the PNL director and the DOE-RL manager. The submittal will satisfy a TPA milestone action with a September 1995 completion date.

If you have questions regarding the technical considerations of this request, please contact JL Buelt at 376-3926. If you know of a project manager or researcher responsible for one of the named programs but is not on the distribution for this memo or you feel that you will not be able to sign at

Distribution  
July 27, 1995  
Page 2

At least one of the attached certification statements, please contact MH Schlender on 376-8795 as soon as possible. If you have any questions regarding the Thermal Treatment Test Facilities Part A Permit Application or need a copy, please contact HT Tilden on 376-0499.

Attachment

Distribution: WJ Bjorklund  
WF Bonner  
RA Brouns  
TM Brouns  
JL Bueit  
PA Gauglitz  
JN Hartley  
WO Heath  
DE Knowlton  
DA Lamar  
HD Massey  
DA McAdie  
JM Perez  
KA Poston  
HW Slater  
TL Stewart  
JE Surma  
GT Thornton  
PJ Turner

PHYSICAL/CHEMICAL TREATMENT TEST FACILITIES  
FACT SHEET

Background

In 1987, Department of Energy (DOE) operations involving radioactive materials became subject to permitting under the Resource Conservation Recovery Act (RCRA) for all activities involving Mixed Waste. Mixed Waste is a waste stream that contains both hazardous and radioactive components. At that time, several PNL programs were developing proposals to evaluate innovative waste treatment technologies, using actual wastes (as opposed to surrogates) in pilot scale testing.

RCRA regulations allow treatability studies on actual hazardous waste above bench scale, but less than 1000 Kg per waste stream, without a RCRA hazardous waste permit. The number and variety of technologies and laboratory/research facilities PNL planned to use made the standard permitting options too costly. The Environmental Protection Agency (EPA), the State of Washington Department of Ecology (Ecology) and the Department of Energy, Richland Operations Office (DOE-RL) agreed with Battelle that a means of allowing research on a larger scale would benefit to environmental clean up. The result was three (3) treatability study based Interim Status RCRA Permits: Thermal Treatment Test Facilities, Physical and Chemical Treatment Test Facilities, and Biological Treatment Test Facilities.

In 1993, all PNL departments involved in waste treatment technologies participated in a research and development/demonstration study, conducted jointly by DOE-RL, PNL and WHC. The study concluded there were no programs in need of the treatability study Permits.

Closure

Units and activities operating under interim status are required to obtain a final status permit or close. There are two ways to close the Permits. The first requires preparing formal RCRA closure plans for each technology and each laboratory/facility listed on the interim status Permits. The second, procedural closure under the Tri-Party Agreement, is the most cost effective and less burdensome but requires proof that the treatment listed in the Application were not conducted on actual hazardous waste or mixed waste. Actual physical or chemical hazardous waste treatment above the small quantity treatability exemption (1000kg/wastestream) must also be identified.

It needs to be established that physical or chemical treatment activities under the Physical/Chemical Treatment Test Facilities Part A Application did not take place to the satisfaction of DOE-RL and Ecology. For DOE-RL, it must be sufficient that the DOE-RL manager, John Wagoner can certify under penalty of law that the Physical/Chemical Treatment Test Facilities never treated hazardous or mixed wastes. Ecology will seek satisfaction based on an examination and inspection of the facilities and the applicable research records which we utilize in support of our certification.

## Thermal Treatments

Activities covered under the Thermal Treatment Test Facilities Part A Permit Application (the Application) are treatments listed on the Application. The specific waste treatment technologies are as follows:

- in situ Vitrification
- waste vitrification
- plasma arc pyrolysis
- in situ heating on soils and sludges
- metal melting
- gamma induced oxidation of organic chemicals
- drying and decomposition of liquid slurries
- in can melting of soil wastes and liquid wastes
- microwave heating.

## Thermal Treatment Test Facilities

Facilities specifically named in the Application are:

- The Engineering Development Laboratory (EDL), EDL high bay, and EDL hot cell complex in the 324 building
- selected laboratories in the 324 building
- selected laboratories in the 325 building
- laboratories in the 331 buildings
- 600 Area ISV test site
- the 116-B-6-1 crib
- and other facilities and at radioactive mixed waste/hazardous waste remedial action locations.

INSTRUCTIONS FOR THE  
PHYSICAL/CHEMICAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CHECKLIST  
AND  
CERTIFICATION STATEMENT

You are asked to perform the following to help determine whether or not the listed physical or chemical treatment activities were conducted in the specified PNL facilities:

- Identify your involvement in the physical or chemical treatment RD&D activities at PNL.
- Fill out the attached checklist for physical or chemical Treatment activities conducted under your purview. Use the checklist to assist in identifying and collecting the appropriated documentation.
- Sign and date the applicable certification statement(s). If you feel that you will not be able to sign at least one of the certification statements, please contact MH Schlender on 376-8795 as soon as possible.
- For each of your certifications, obtain the signature and printed name of someone witnessing your certification signature.
- Return the completed checklist and signed certification statements to MH Schlender by August 11, 1995.

THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CHECKLIST  
AND  
CERTIFICATION STATEMENT

Identify any potential treatment processes, activities, operations, projects, functions that have been planned, conducted or managed under your purview from May 1988 until the present.

Including activities conducted under the treatability study exemption, were thermal treatment activities listed below conducted on hazardous or mixed waste conducted in operations/projects under your purview?

Are any of the thermal treatment activities in the list below?

- in situ Vitrification
- waste vitrification
- plasma arc pyrolysis
- in situ heating on soils and sludges
- metal melting
- gamma induced oxidation of organic chemicals
- drying and decomposition of liquid slurries
- in can melting of soil wastes and liquid wastes
- microwave heating.

For each treatment activity from the list provide the following information:

1. Was the treatment process conducted after May 19, 1988?
2. Actual location of treatment process.
3. How often did the treatment process operate (give details of operation)?
4. What materials were used in the treatment process?
5. Where did the waste originate? Who provided the waste?
6. Was the waste a hazardous or mixed waste?
7. Was the thermal treatment process conducted on the Hanford site at CERCLA units?

8. List the available documents and their location that support the information supplied above? Useful records include (but are not exclusive): program/project plans, proposals, schedules, meeting minutes, financial plans, contracts, laboratory record books, inspection reports and any other PNL documents addressing thermal treatment studies that were:
- planned but were never conducted
  - conducted using surrogates
  - conducted under small quantity treatability studies (any studies under this exemption require the production of documentation required by regulations.)
  - logs showing quantities of hazardous or mixed waste removed from research locations.
9. How were any resultant waste streams, including those conducted under the treatability study exemption, managed? (i.e. returned to generator, managed as hazardous waste in accordance with PNL waste management procedures).

PACIFIC NORTHWEST LABORATORY  
THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CERTIFICATION

The undersigned hereby certifies based on my personal knowledge and participation in or support to the program/project titled - \_\_\_\_\_; in (bldg/location) \_\_\_\_\_; (lab/suite #) \_\_\_\_\_:

That under said program/project, where actual hazardous or mixed wastes were used, no thermal treatment activities were conducted that exceeded the limitations for Treatability Studies; and that samples treated under the Treatability Study exemption were managed in compliance with applicable regulations;

I also certify that the supporting information attached was collected under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather, evaluate and verify the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief true, accurate, and complete.

/s/ \_\_\_\_\_

/s/ \_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name)

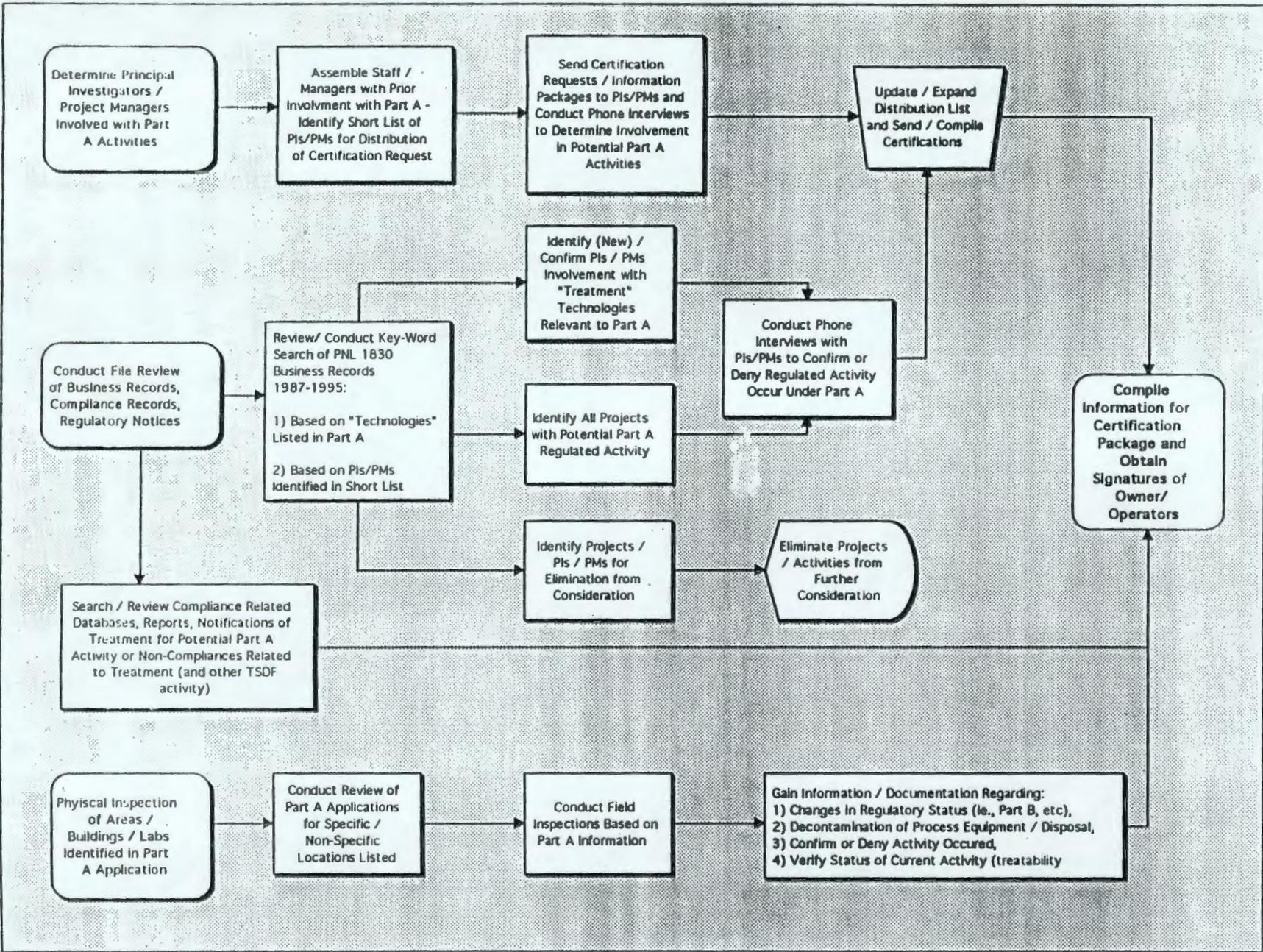
\_\_\_\_\_  
(Date)

9613400.0964

**Attachment B**

**Data Gathering Process Flow Diagram**

Part A Application Review / Data Gathering Process



9613400.0963

**Attachment C**

**Ecology Letter Regarding Regulation of Simulants**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

1315 W. 4th Avenue • Kennewick, Washington 99336-6018 • (509) 733-7581

September 11, 1995

Mr. James E. Rasmussen, Director  
Environmental Assurance, Permits and Policy Division  
U.S. Department of Energy  
P.O. Box 550  
Richland, WA 99352

Mr. Kenneth C. Brog, Director  
Environmental Safety and Health  
Pacific Northwest Laboratories  
P.O. Box 999  
Richland, WA 99352

Dear Messrs. Rasmussen and Brog:

Re: Regulation of "Simulated Waste"

The Washington State Department of Ecology (Ecology) is conducting an inspection at various U.S. Department of Energy facilities operated by Pacific Northwest Laboratories (PNL) as part of the procedural closure process for Thermal Treatment Test Facilities and Physical/Chemical Test Facilities. During this inspection, questions have arisen as to management requirements for simulated waste streams. After researching this issue, I offer the following guidance:

Simulated waste is created using prescribed chemical constituents for the purpose of performing treatability tests. This material is not considered a dangerous waste, but rather should be managed as product. Resultant waste streams, i.e., those created as a result of applied treatment, are subject to conditions of Chapter 173-303 WAC. Simulated waste cannot be created using actual dangerous waste. If dangerous waste is used to create a simulated waste, the entire mixture is subject to conditions of Chapter 173-303 WAC.

The above guidance supersedes Ecology's April 30, 1990, letter on management of simulated waste used during a pilot-scale underground tank in-situ vitrification (ISV) test.



Mr. James E. Rasmussen

Mr. Kenneth C. Brog

Page 2

September 11, 1995

Further, the material used to perform the referenced ISV test is not deemed a solid waste at the onset of the test. However, as noted above, waste streams resulting from applied treatment are subject to conditions of Chapter 173-303 WAC.

Do not hesitate to call me at (509) 736-3019 if you have any questions regarding this letter.

Sincerely,



Jeanne Wallace, Unit Manager  
Nuclear Waste Program

JW:sl

cc: Cliff Clark, USDOE  
Bob DeLannoy, USDOE  
Bet Flores, PNL  
Mike Schlender, PNL  
Harold Tilden, PNL



**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

## **1.0 INTRODUCTION**

### **1.1 Purpose**

The purpose of this synopsis is to support the request for procedural closure by the Department of Energy, Richland Operations Office (RL), and Pacific Northwest Laboratory (PNL), of the Washington State Hazardous Waste Management Act (Chapter 70.105 RCW) Permitted Physical/Chemical Treatment Test Facilities in accordance with Section 6.3.3 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Action Plan. Information discussed below will demonstrate that the **Physical/Chemical Test Facilities** have never treated, stored, or disposed of dangerous waste, including mixed waste, except as provided by WAC 173-303-200, 173-303-802, or 173-303-071(1) and (s). There are no plans to manage dangerous or mixed waste at the facilities except as provided by WAC 173-303-200 or 173-303-802. The procedural closure of the facilities will modify the Hanford Facility Permit Application by eliminating the **Physical/Chemical Test Facilities** Form 3 from that document.

### **1.2 Previous Application Submittal**

The initial Part A Permit Application (Form 3) for the unit was submitted to the Washington State Department of Ecology (Ecology) by RL on May 19, 1988. This Form 3 was submitted based on an agreement between RL, Ecology and the Environmental Protection Agency that groups of similar technologies could be permitted together, regardless of the physical location of the technologies and the types of wastes to be treated. As a result of a Research Development and Demonstration (RD&D) Permitting Strategy Study conducted by RL, PNL, and Westinghouse Hanford Company, no physical/chemical treatment technologies or activities were identified that needed regulatory permitting at this time, and no future need to obtain a "generic" permit for demonstrating the physical/chemical treatment technologies was identified.

## **2.0 FACILITY DESCRIPTION**

In the initial Part A Permit Application, physical and chemical treatment test activities were projected to occur at the 324 Building Engineering Development Laboratory (EDL), the EDL high bay, the hot-cell complex of the 324 Building, other selected laboratories in the 324, 325, 327, 329, 3720 Buildings in the 300 Area and lysimeters in the 600 area. In June 1991, a revised application was submitted which identified such physical and chemical treatment activities were identified to occur in the 325 Building Shielded Analytical Laboratories (SAL), the 324 Building Radiochemistry Hot-Cell Complex, and the 324 Building Biological Treatment Test Facilities.

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

**3.0 PROCESS INFORMATION**

**3.1 Operations History**

Waste management activities in the facilities have consisted solely of accumulation of hazardous waste in accordance with the generator requirements of WAC 173-303-200. Physical/chemical treatment test activities that have been performed were accomplished with simulated waste streams, and/or treatability study samples and samples for characterization. The simulated waste streams are not regulated by WAC 173-303. Residues from physical/chemical treatment activities on simulated waste streams were managed in accordance with WAC 173-303 requirements and PNL waste management practices.

The samples for characterization are not subject to the requirements of WAC 173-303 as long as the conditions of WAC 173-303-071(3)(1)(i) through WAC 173-303-071(3)(1)(iii) are complied with. All requirements of those sections were and are being complied with at PNL.

Samples undergoing treatability studies are only subject to the requirements of WAC 173-303-050, WAC 173-303-145, WAC 173-303-960 if the conditions of WAC 173-303-071(s)(i) through (xiii) are complied with. All requirements of those sections were and are being complied with at PNL.

The 325 Building SAL conducted treatment operations on small quantities of wastes produced during analytical chemistry operations. The 325 SAL facility and activities has now been included within the 325 Building Hazardous Waste Treatment Units Part A Application and is not covered by this closure action.

**3.2 Data Gathering for Physical/Chemical Part A Activities**

Records review, certification statements, and field inspections were used to establish whether regulated waste treatment did or did not occur during the 1988-1995 time period (See attached Administrative Record Inventory). The approach used and the results of this data gathering effort is described in the following sections.

**3.2.1 Approach**

Three primary sources of information were used or examined to provide assurance to PNL senior management, RL, and Ecology that the certification

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

statement provided is true, accurate, and complete. These information sources included:

- Review of administrative controls / records used for operations under the permit application portions in question, including RL/PNL Memorandum of Agreement dated 8/15/88; PNL-MA-8, Chapter 14 dated 8/88; and PNL internal documents.
  - "Management and Implementation Plan for Compliance with RCRA Part A Permits" dated June 1988.
  - Memo, W.R. Wiley to Distribution, PNL RCRA Permit Compliance" , dated 7/14/88.
  - "Environmental Compliance Management Plan" dated February 7, 1990.
  - PNL business records listing authorized projects from the period 1987 - 1995.
  - PNL corrective action databases for findings (internal and external) of non-compliance related to treatment activities.
  - PNL Environmental Compliance, DOE-RL inspection reports.
- Obtaining statements from Operations/Project/Program Managers and Principal Investigators that no operations regulated under the permit application portions in question took place (See Attachment A). Guidance to those receiving requests for statements included advisement for verification of the statement by utilizing the following tools:
  - Interviews/consultations with PNL staff involved with Part A application activities.
  - Spot checks of operational logs, laboratory notebooks, records and files of projects of interest.
  - Review of organizational records (plans) for projects involving the treatment of wastes or waste stimulants.
- An on-site review of all facilities included in the procedural closure requests / Part A Applications. These reviews or field evaluations would serve to verify contractor submitted information requesting

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

procedural closure. Participation included RL, Ecology, and PNL.

### **3.2.2 Data Gathering**

The results of the data gathering supported the contention that no regulated activity took place under the Part A application. Research and development activity was guided by administrative controls and took place with either simulants (see Section 3.3) which are not regulated or with wastes within treatability exemption limits allowed by WAC 173-303-050, WAC 173-303-145, and WAC 173-303-960. The results of the data gathering activity is summarized in the following sections. Attachment B illustrates the overall process used for the data gathering task.

#### Records Review

A review of the administrative documents used for operations under the permit application indicated that these institutional controls would have required PNL staff involved in treatment technology testing to have approval from PNL staff knowledgeable of WAC requirements before the initiation of the project. Without administrative approvals in place, funding authorization would be withheld and the project would not go forward. These controls would also ensure that proper notification of regulated activities would be recorded. Certifications provided by those involved with the filing and administration of the permit application also supported this conclusion.

Key word searches of PNL business records were conducted to identify projects that could have been candidates to activate the treatment component of Part A Application. For this inquiry it was assumed that all PNL administrative requirements were met to allow the project to have funding authorized. Therefore, the business records represent the "universe" of all projects conducted based on funding authorization.

The records search (business records) included all 1830 projects (under Hanford Dangerous Waste Identification Number) back to 1987 (one year before the May 1988 permit filing). The initial search of the database was conducted using a list of known project managers who had been involved in this type of work, including both current and former employees. The search summarized all records where the payroll number matched that of the list of Project Managers (PM)/Principal Investigators (PI) provided. The second phase of the search involved the use of keywords or keyword strings in the scope statement to look for technology-specific projects. An example of how this works is as follows; string used ==> "% WASTE %", returns project listings with scope statements including hazardous waste, mixed waste, waste evaporation, waste

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

dissolution, waste water, etc. This information was used to retain projects for closer evaluation and to eliminate others from consideration. This database evaluation was also used to identify other PIs or PMs with potential treatment testing under the Part A Application. As a result of reviewing these records in detail, no projects were found which required the Part A Application.

Other databases reviewed included Corrective Action Tracking System specific to all deficiencies/non-compliances in PNL data bases related to environmental issues. Another internal compliance database inquiry included topics (objects); air sample, asbestos abatement, CERCLA, Clean Air Act, Environmental, ES&H, FEMP, NEPA, NPDES, RCRA, Water, and Waste Management and Environmental Compliance. The records are limited to conditions noted to the period between 1990-1995. The total number of records reviewed was greater than 1000 entries. Both databases confirmed that no treatment activity took place that would have required the Part A Application.

Other records reviewed included both external and internal inspection and compliance reports, individual project files and logbooks, project workplans or reports, and state notification files for DW treatability studies. The compliance reports were selected to isolate the facilities listed in the Part A application, specifically the 325, 331, 324 Buildings, the 300 West Area, and the 116-B-6 Crib.

Certification Requests

A total of 26 individuals received a memorandum requesting a written certification and information related to technology treatment activity. The initial distribution list for the memorandum was based on the recommendations of an ad hoc panel comprised of PNL staff and management with institutional knowledge and history of the Part A Application. Two additional lists were developed based on the certification information received from the first list and from the numerous phone interviews and discussions held with facility operations personnel/managers, compliance personnel, and PIs/PMs with knowledge of the treatment technologies included in the Part A Application.

The certification information received supported the contention that the Part A Application can be procedurally closed and that no treatment activity took place that would have required the Part A Application. The information provided showed that treatment testing did occur in PNL facilities during the period from 1988-1995; however this activity was either conducted under another regulatory authorization (CERCLA Treatability Study, Interim Status Unit - Part B, closure plan) or within treatability exemption limits.

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

Certifications were also received from two of the originators of the Part A applications filed in 1988. Information provided with these certifications reaffirmed that the filing of the Part A Application was protective in nature for activities which were largely "anticipated" and not actually planned.

**Field Evaluations**

Specific buildings and testing areas on the Hanford Site that were identified in the Part A Application were visited to determine if evidence remained of treatment activity that was regulated under the application. As outlined in the Part A Application, the field inspections were limited to the 116-B-6 Crib, the 300 West Area, and the 325, 324, and the 331 Buildings. As a result of these evaluations, numerous records were gathered to determine if secondary waste streams from existing treatment technologies are regulated under the Part A Application or if proper waste decontamination was performed to preclude waste storage following the completion of treatment testing. Based on the information gathered during and as a result of the field inspections, no treatment activity took place that would have required the Part A Application.

**3.3 Waste Designation and Management**

Waste residues from activities covered under the sample exclusion were returned to the generator and treatability test study exclusion residues were sent back the generator or managed in accordance with WAC 173-303 requirements and PNL waste-management practices. No treatment activities involving wastes above the treatability studies sample exclusion quantity limits have been conducted.

**4.0 SUMMARY**

Physical and chemical treatment test activities that have been conducted at the Hanford Site, and which were subject to the Washington State Dangerous Waste Regulations, were conducted with simulants or with waste quantities falling within the treatability study sample exclusion.

With the exception of operations in the 325 SAL (which now operates under the 325 Building Hazardous Waste Treatment Units Part A Application, Form 3), physical and chemical treatment test activities that have been conducted at the Hanford Site and that were subject to the Washington State Dangerous Waste Regulations, were conducted with simulants or with waste quantities falling

**Physical/Chemical Treatment Test Facilities  
Procedural Closure  
Technical Data Synopsis**

within the treatability study sample exclusion. No activities have been conducted within the scope of the **Physical and Chemical Treatment Test Facilities** Part A Application that require the preparation and submission of a Part B Application, nor are any planned. RL and PNL request that procedural closure in accordance with Section 6.3.3 of the Hanford Federal Facility Agreement and Consent Order (Tri-Party Agreement) Action Plan be implemented.

**5.0 PHYSICAL/CHEMICAL TREATMENT TEST FACILITIES PROCEDURAL CLOSURE  
TECHNICAL DATA SYNOPSIS CERTIFICATION**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

John D. Wagoner  
Owner/Operator  
John D. Wagoner, Manager  
U.S. Department of Energy  
Richland Operations Office

9/22/95  
Date

William J. Madia  
Co-operator  
William J. Madia, Director  
Pacific Northwest Laboratory

18 September 95  
Date

Administrative Record Summary  
for  
Procedural Closure of Thermal Treatment Test Facilities  
and Physical/Chemical Test Facilities

<u>Volume</u>	<u>Section</u>	<u>Description of Records</u>
1	1	Certification Statements and Checklists
1	2	CATS Summary Report
1	3	EC Compliance Report Review Summary
1	4	PNL Business Records Database Search (Projects)
1	5	PNL Business Records Database Search (Project Managers)
2	1	Phone (Telecon) Conversation Records
2	2	Report: Electro Chemical Destruction of Wastes, L. Bray.
2	3	Listing of Facility Locations for Part A for Physical/Chemical and Thermal Testing
2	4	Facility Drawings for Locations Identified in Part A Applications
2	5	Decontamination Records/Information Regarding Acid Tank in 324 Building
2	6	Administrative Planning Documents for Part A Implementation (Management Plan, etc)
3	1	Part A Applications and Planning Documents for Procedural Closure of Part A Applications
3	2	Correspondence, RL, Ecology, and PNL
3	3	PNL Non-Operational Unit Managers Meeting Minutes
3	4	Historical Treatability Study Notification and and Summary Records for Treatability Studies (Annual and Quarterly Reports)
3	5	Ecology Requests for Information
3	6	Information Provided to Ecology
4	1	Internal/External Compliance Database Search Report
4	2	Compliance Reports for 324,331, 325 Buildings

**Attachment A**  
**Certification Request Memorandum and Distribution**

OSRD CONFIDENTIAL

Distribution Lists for Certification Requests for Physical/Chemical and Thermal Treatment Part A Applications:

Distribution:

List 1 (both PC/TT)

WJ Bjorklund<sup>2</sup>  
WF Bonner  
RA Brouns  
TM Brouns<sup>3</sup>  
JL Buel  
PA Gauglitz  
JN Hartley<sup>2</sup>  
WO Heath  
DE Knowlton  
DA Lamar  
HD Massey<sup>1</sup>  
DA McAdie<sup>1</sup>  
JM Perez  
KA Poston<sup>2</sup>  
HW Slater<sup>2</sup>  
TL Stewart<sup>2</sup>  
JE Surma  
GT Thornton<sup>2</sup>  
PJ Turner

List 2

LK Holton (PC)  
GJ Lumetta (PC)  
LC Thompson (TT<sup>2</sup>)\*  
V Fitzpatrick (TT<sup>2</sup>)\*

List 3

EG Baker (PC)  
CL Timmerman (TT<sup>2</sup>)\*  
JK Luey (TT)  
DC Elliott (PC)  
RA Merrill (PC/TT)  
T McLaughlin (PC/TT)\*  
HT Tilden (PC/TT)

Legend:      PC - Physical/Chemical Part A Certification Request  
                  TT - Thermal Treatment Testing Part A Certification Request

- <sup>1</sup> - Certification Request Not Applicable to individual identified
- <sup>2</sup> - Certification response included
- <sup>3</sup> - Combined with certification from RA Brouns
- <sup>4</sup> - No response received
- \* - Not employed by PNL


**Battelle**

Pacific Northwest Laboratories

Project Number \_\_\_\_\_

Internal Distribution

kcb:File/LB

Date July 28, 1995  
 To Distribution  
 From KC Brog  
 Subject PROCEDURAL CLOSURE OF THE PHYSICAL/CHEMICAL TREATMENT TEST FACILITIES

*John R. P. [Signature] for KCB*

The ES&H Directorate is leading an effort to administratively close RCRA hazardous waste permit applications which are of no further use for Laboratory R&D operations. More specifically, we need your assistance to determine if hazardous wastes were ever treated under the regulatory authorization of these permit applications. This communication is intended for those current and former PNL researchers, project managers, facility managers, etc., involved with a Resource Conservation and Recovery Act (RCRA) Part A Permit Application for Thermal Treatment technology testing.

You are requested to assist Pacific Northwest Laboratory (PNL) in establishing whether certain physical or chemical treatment activities were conducted in specified PNL facilities. Your participation will help document whether the physical or chemical treatment activities occurred, close the Permit application and meet a fast approaching Hanford Federal Facility Agreement and Consent Order Milestone.

Your participation is based on:

- Your involvement in the development of physical or chemical treatment technologies at PNL.
- Your support role with projects, programs and/or facilities that planned to conduct thermal treatment activities at PNL.
- Your involvement in the hazardous waste permit application that specified the physical or chemical treatment activities and PNL facilities.

Please complete the procedural closure checklist and certification statement(s) in the attached package and return to MH Schlender by August 11, 1995. Technical/regulatory assistance and some funding is available for completion of this task by contacting MH Schlender. A fact sheet and instructions are provide in the package for your information.

Your prompt attention to and completion of the task items will be appreciated and is critical to support a September 13, 1995 procedural closure - certification statement submittal date from the PNL director and the DOE-RL manager. The submittal will satisfy a TPA milestone action with a September 1995 completion date.

Distribution  
July 28, 1995  
Page 2

If you have questions regarding the technical considerations of this request, please contact JL Buelte at 376-8926. If you know of a project manager or researcher responsible for one of the named programs but is not on the distribution for this memo or you feel that you will not be able to sign at least one of the attached certification statements, please contact MH Schlender on 376-8795 as soon as possible. If you have any questions regarding the Physical/Chemical Treatment Test Facilities Part A Permit Application or need a copy, please contact HT Tilden on 376-0499.

Attachment

Distribution: WJ Bjorklund  
WF Bonner  
RA Brouns  
TM Brouns  
JL Buelte  
PA Gauglitz  
JN Hartley  
WO Heath  
DE Knowlton  
DA Lamar  
HD Massey  
DA McAdie  
JM Perez  
KA Poston  
HW Slater  
TL Stewart  
JE Surma  
GT Thornton  
PJ Turner

## THERMAL TREATMENT TEST FACILITIES FACT SHEET

### Background

In 1987, Department of Energy (DOE) operations involving radioactive materials became subject to permitting under the Resource Conservation Recovery Act (RCRA) for all activities involving Mixed Waste. Mixed Waste is a waste stream that contains both hazardous and radioactive components. At that time, several PNL programs were developing proposals to evaluate innovative waste treatment technologies, using actual wastes (as opposed to surrogates) in pilot scale testing.

RCRA regulations allow treatability studies on actual hazardous waste above bench scale, but less than 1000 Kg per waste stream, without a RCRA hazardous waste permit. The number and variety of technologies and laboratory/research facilities PNL planned to use made the standard permitting options too costly. The Environmental Protection Agency (EPA), the State of Washington Department of Ecology (Ecology) and the Department of Energy, Richland Operations Office (DOE-RL) agreed with Battelle that a means of allowing research on a larger scale would benefit to environmental clean up. The result was three (3) treatability study based Interim Status RCRA Permits: Thermal Treatment Test Facilities, Physical and Chemical Treatment Test Facilities, and Biological Treatment Test Facilities.

In 1993, all PNL departments involved in waste treatment technologies participated in a research and development/demonstration study, conducted jointly by DOE-RL, PNL and WHC. The study concluded there were no programs in need of the treatability study Permits.

### Closure

Units and activities operating under interim status are required to obtain a final status permit or close. There are two ways to close the Permits. The first requires preparing formal RCRA closure plans for each technology and each laboratory/facility listed on the interim status Permits. The second, procedural closure under the Tri-Party Agreement, is the most cost effective and less burdensome but requires proof that the treatment listed in the Application were not conducted on actual hazardous waste or mixed waste. Actual thermal hazardous waste treatment above the small quantity treatability exemption (1000kg/wastestream) must also be identified.

It needs to be established that thermal treatment activities under the Thermal Treatment Test Facilities Part A Application did not take place to the satisfaction of DOE-RL and Ecology. For DOE-RL, it must be sufficient that the DOE-RL manager, John Wagoner can certify under penalty of law the Thermal Treatment Test Facilities never treated hazardous or mixed wastes. Ecology will seek satisfaction based on an examination and inspection of the facilities and the applicable research records which we utilize in support of our certification.

## Physical and Chemical Treatments

Activities covered under the Physical/Chemical Treatment Test Facilities Part A Permit Application (the Application) are treatments listed on the Application. The specific waste treatment technologies are as follows:

- pH adjustment
- ion exchange for selective removal of contaminants for waste solutions
- waste concentration by evaporation
- waste dissolution such as waste retrieval from storage tanks by pH adjustment or fusion
- precipitation/filtration and solvent extraction from solutions, slurries, and sludges
- solids washing for separation of contaminants from sludges
- catalytic destruction methods; for example: electrolytic generation of oxidants such as silver, cerium, and other electrochemical-enhanced process for decontaminating metals and oxidizing non-metals
- grouting
- microwave heating.

## Physical/Chemical Treatment Test Facilities

Facilities specifically named in the Application are:

- The 325 Building Shielded Analytical Laboratory (SAL)
- The 324 Building Radiochemical Hot-Cell Complex
- The 324 Building Biological Treatment Test Facilities

Physical/Chemical Treatments conducted in the 325 Building SAL will not be considered in evaluating whether the listed physical and chemical treatment were conducted in the specified PNL facilities. Physical and Chemical treatments activities have been conducted in the 325 Building SAL, but were transferred to the 325 Hazardous Waste Treatment Units (HWTUs) operations and permits in December 1994 by the revision and submittal of the 325 HWTUs interim status permit.

INSTRUCTIONS FOR THE  
THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CHECKLIST  
AND  
CERTIFICATION STATEMENT

You are asked to perform the following to help determine whether or not the listed thermal treatment activities were conducted in the specified PNL facilities:

- Identify your involvement in the thermal treatment RD&D activities at PNL.
- Fill out the attached checklist for Thermal Treatment activities conducted under your purview. Use the checklist to assist in identifying and collecting the appropriated documentation.
- Sign and date the applicable certification statement(s). If you feel that you will not be able to sign at least one of the certification statements, please contact MH Schlender on 376-8795 as soon as possible.
- For each of your certifications, obtain the signature and printed name of someone witnessing your certification signature.
- Return the completed checklist and signed certification statements to MH Schlender by August 11, 1995.

THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CHECKLIST  
AND  
CERTIFICATION STATEMENT

Identify any potential treatment processes, activities, operations, projects, functions that have been planned, conducted or managed under your purview from May 1988 until the present.

Including activities conducted under the treatability study exemption, were thermal treatment activities listed below conducted on hazardous or mixed waste conducted in operations/projects under your purview?

Are any of the thermal treatment activities in the list below?

- in situ Vitrification
- waste vitrification
- plasma arc pyrolysis
- in situ heating on soils and sludges
- metal melting
- gamma induced oxidation of organic chemicals
- drying and decomposition of liquid slurries
- in can melting of soil wastes and liquid wastes
- microwave heating.

For each treatment activity from the list provide the following information:

1. Was the treatment process conducted after May 19, 1988?
2. Actual location of treatment process.
3. How often did the treatment process operate (give details of operation)?
4. What materials were used in the treatment process?
5. Where did the waste originate? Who provided the waste?
6. Was the waste a hazardous or mixed waste?
7. Was the thermal treatment process conducted on the Hanford site at CERCLA units?

8. List the available documents and their location that support the information supplied above? Useful records include (but are not exclusive): program/project plans, proposals, schedules, meeting minutes, financial plans, contracts, laboratory record books, inspection reports and any other PNL documents addressing thermal treatment studies that were:
- planned but were never conducted
  - conducted using surrogates
  - conducted under small quantity treatability studies (any studies under this exemption require the production of documentation required by regulations.)
  - logs showing quantities of hazardous or mixed waste removed from research locations.
9. How were any resultant waste streams, including those conducted under the treatability study exemption, managed? (i.e. returned to generator, managed as hazardous waste in accordance with PNL waste management procedures).

PACIFIC NORTHWEST LABORATORY  
THERMAL TREATMENT TEST FACILITIES  
PROCEDURAL CLOSURE CERTIFICATION

The undersigned hereby certifies based on my personal knowledge and participation in or support to the program/project titled - \_\_\_\_\_; in (bldg/location) \_\_\_\_\_; (lab/suite #) \_\_\_\_\_:

That under said program/project, where actual hazardous or mixed wastes were used, no thermal treatment activities were conducted that exceeded the limitations for Treatability Studies; and that samples treated under the Treatability Study exemption were managed in compliance with applicable regulations;

I also certify that the supporting information attached was collected under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather, evaluate and verify the information submitted. Based on my inquiry of the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief true, accurate, and complete.

/s/ \_\_\_\_\_

/s/ \_\_\_\_\_  
(Witness)

\_\_\_\_\_  
(Print Name/Title)

\_\_\_\_\_  
(Print Name)

\_\_\_\_\_  
(Date)

9613400.0976

**Attachment B**

**Data Gathering Process Flow Diagram**

Part A Application Review / Data Gathering Process

