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AWARD/CONTRACT

1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350) | RATING | PAGE OF PAGES

2. CONTRACT (Proc. Inst. Ident.) NO.: DE-AC06-RL13308

3. EFFECTIVE DATE: 09/25/96

4. REQUISITION/PURCHASE REQUEST/PROJECT NO.: RL-13308

5A. ISSUED BY CODE:
U.S. Department of Energy
Richland Operations Office
P.O. Box 550, MS: K6-51
Richland, WA 99352
Attn: P.E. Rasmussen

6. ADMINISTERED BY (If other than Item 5) CODE:

7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, state and zip code)
BNFL, Inc.
9302 Lee Highway, Suite 950
Fairfax, VA 22031

8. DELIVERY
[X] F.O.B. ORIGIN [ ] OTHER (See below)

9. DISCOUNT FOR PROMPT PAYMENT

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN: ITEM 5

CODE | FACILITY CODE

11. SHIP TO/MARK FOR CODE:

12. PAYMENT WILL BE MADE BY CODE:

13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:
[ ] 10 U.S.C. 2304 (c) ( ) [X] 41 U.S.C. 253 (c) ( )

14. ACCOUNTING AND APPROPRIATION DATA

15A. ITEM NO.	15B. SUPPLIES/SERVICES	15C. QUANTITY	15D. UNIT	15E. UNIT PRICE	15F. AMOUNT
CLIN002	LAW only and LAW/HLW	1	ea	$27,000,000	$27,000,000.00
CLIN003	LAW (min. order qty.)	1	ea	Target	
CLIN004	LAW and HLW (min. order qty.)	1	ea	Target	

15G. TOTAL AMOUNT OF CONTRACT: $ 27,000,000.00

16. TABLE OF CONTENTS

(X)	SEC.	DESCRIPTION	PAGE(S)	(X)	SEC.	DESCRIPTION	PAGE(S)
		PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES	
X	A	SOLICITATION/CONTRACT FORM		X	I	CONTRACT CLAUSES	
X	B	SUPPLIES OR SERVICES AND PRICES/COSTS				PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.	
X	C	DESCRIPTION/SPECS./WORK STATEMENT		X	J	LIST OF ATTACHMENTS	
X	D	PACKAGING AND MARKING				PART IV - REPRESENTATIONS AND INSTRUCTIONS	
X	E	INSPECTION AND ACCEPTANCE			K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
X	F	DELIVERIES OR PERFORMANCE					
X	G	CONTRACT ADMINISTRATION DATA			L	INSTRS. CONDS., AND NOTICES TO OFFERORS	
X	H	SPECIAL CONTRACT REQUIREMENTS			M	EVALUATION FACTORS FOR AWARD	

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17. [X] CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 1 copies to issuing office.) Contractor agrees to funrish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)

18. [ ] AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.

19A. NAME AND TITLE OF SIGNER (Type or print)
Rolland A. Langley, President

20A. NAME OF CONTRACTING OFFICER
John D. Wagoner

19B. NAME OF CONTRACTOR | 19C. DATE SIGNED | 20B. UNITED STATES OF AMERICA | 20C. DATE SIGNED

BY Rolland A. Langley (Signature of person authorized to sign) — Sept. 25, 1996

BY John D. Wagoner (Signature of Contracting Officer) — Sept 25, 1996

Section B Supplies or Services and Prices

B.1 Part A (Firm-Fixed Price) 1

B.2 Part B (Target Price) 2

Section B Supplies or Services and Prices

B.1 Part A (Firm-Fixed Price)

Completion of all requirements in accordance with Section C.4.1 of the *Statement of Work*.

The price for CLIN 002 is not an additive to CLIN 001, but is a stand-alone price for the work covered by CLIN 002. During performance of Part A, the Contractor for CLIN 001 will develop a solution for Low-Activity Waste (LAW) services only; the Contractor(s) selected for CLIN 002 will develop two parallel solutions: Low-Activity Waste services; and Low-Activity and High-Level Waste services.

CLIN

001 Part A Deliverables for Low-Activity Waste Services Only:

$ N/A

002 (OPTIONAL) Part A Deliverables for Low-Activity Waste Services; and Low-Activity and High-Level Waste Services:

$ 27,000,000

B.2 Part B (Target Price)

Completion of all requirements in accordance with Section C.4.2 of the *Statement of Work.*

The target prices for CLINs 003 and 004 are subject to adjustment to fixed-unit-prices at the end of Part A (*see* Standard 7, *Fixed-Unit-Prices*). Unit prices for CLINs 003A, B, C and 004A, B, C are based on metric tons (MT) of sodium (Na) in the waste envelope to be processed. The unit price for CLIN 004D is based on metric tons of waste oxides exclusive of Na and silicon (Si) in the waste envelope to be processed.

CLIN		Qty		Target Unit Price/MT		Total Target Price
003	Services for Low-Activity Waste: (Minimum Quantities)					
003A	Waste Processing Services for Waste Envelope A	2600 MT Na	x	$ 1,020,000	=	$ 2,652,000,000
003B	Waste Processing Services for Waste Envelope B	100 MT Na	x	$ 1,020,000	=	$ 102,000,000
003C	Waste Processing Services for Waste Envelope C	100 MT Na	x	$ 1,020,000	=	$ 102,000,000
004	(OPTIONAL) Services for Low-Activity and High-Level Waste: (Minimum Quantities)					
004A	Waste Processing Services for Waste Envelope A	2600 MT Na	x	$ 1,040,000	=	$ 2,704,000,000
004B	Waste Processing Services for Waste Envelope B	100 MT Na	x	$ 1,040,000	=	$ 104,000,000
004C	Waste Processing Services for Waste Envelope C	100 MT Na	x	$ 1,040,000	=	$ 104,000,000
004D	Waste Processing Services for Waste Envelope D	245 MT of waste oxides exclusive of Na and Si	x	$ 1,045,000	=	$ 256,025,000

Note: Pricing for waste treatment services in excess of minimum order quantities will be established during Part A (*see* Standard 7, *Fixed Unit Prices*).

Section C Statement of Work

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Section C Statement of Work

C.1 Introduction

The U.S. Department of Energy (DOE) Richland Operations Office (RL) is acquiring Hanford tank waste treatment services at a demonstration scale using *privatized facilities* -- privately developed, financed, constructed, owned, operated, and deactivated.

The multiple phases of this procurement are identified as Part A and Part B:

Part A — a 20-month period to establish the technical, operational, regulatory, and financial elements required by privatized facilities to provide waste treatment services at fixed unit prices. The 20-month period is divided into: a 16-month period for the Contractor to provide Part A deliverables and a four-month period during which the Part A deliverables will be reviewed and DOE will determine whether to authorize the Contractor to perform Part B. During performance of Part A, the Contractor(s) selected for CLIN 001 will develop a solution for Low-Activity Waste (LAW) services only; the Contractor(s) selected for CLIN 002 will develop two parallel solutions: Low-Activity Waste services only; and Low-Activity and High-Level Waste (HLW) services.

Part B — a 10- to 14-year period to provide waste treatment services in privatized facilities at fixed unit prices. Three LAW feed envelopes will be provided in Part B. If the Contract includes HLW services, one HLW feed envelope will also be provided. Once Contractor waste treatment services are no longer required, DOE will direct the Contractor to deactivate all Contractor-provided facilities. DOE will order a minimum quantity of waste treatment services during Part B and may provide additional orders up to a maximum quantity of waste treatment services.

Primary objectives for this procurement are to demonstrate the technical and business viability of using privatized facilities for waste treatment; define and maintain required levels of radiological, nuclear, process, and occupational safety; maintain environmental protection and compliance; and, substantially reduce life-cycle cost and the time required to treat Hanford tank waste.

The *Statement of Work* is divided into seven sections: this introduction; a description of DOE interactions with the Contractor; a summary of the regulatory environment; a description of services and deliverables; standards; specifications; and interface descriptions.

C.2 Interactions with the Contractor

a. DOE has three distinct and separate responsibilities that define interactions with the Contractor:

1) As the *Customer*, DOE will purchase a waste treatment service to convert Hanford tank waste into durable forms suitable for disposal.

2) As the *Owner* of the Hanford Site and the waste to be processed, DOE will:

(a) Provide selected services, land, facilities, and equipment to the Contractor;

(b) Require Site-wide compatibility of regulatory compliance actions; and

(c) Review the Contractor's operations to ensure that accountability is maintained for DOE-owned special nuclear material and that adequate security is provided against potential acts of sabotage involving DOE-provided radioactive materials.

3) As the *Regulator*, DOE will regulate radiological and nuclear safety to ensure that the Contractor provides for and operates within the required levels of public and worker protection. The Director will provide oversight of process safety but will not engage in enforcement actions. The Occupational Safety and Health Administration will be responsible for regulating non-radiological safety and health protection.

b. DOE will use an *Integrated Process and Product Development* (IPPD) approach to manage interactions with the Contractor. Selection of the IPPD approach signals a significant change in DOE-performed oversight and direction. DOE will use the IPPD approach to create a partnership between DOE, the Contractors, and the other Hanford Site contractors. The primary objectives of the IPPD approach are to: promote Contractor innovation and accountability for deliverables and services; minimize formal reporting and other administrative requirements; and link Hanford Site interfaces to Contractor facilities.

The IPPD approach will provide the Contractor with focused and timely access to the information and organizations required for the Contractor's success. As *Customer*, *Owner*, and *Regulator*, DOE will use the Contractor's processes and products to obtain the necessary information and performance assurances it will need.

To implement the IPPD approach, DOE and other Hanford Site contractor representatives will organize around a framework of four *Integrated Product/Process Teams* (IPTs).

The Contractor shall establish the four IPTs described below and provide the necessary Contractor staff, administrative services, and technical support for each IPT. The initial meeting of each IPT will be chaired by DOE to facilitate formation of the IPT and to establish working relationships among the Contractor and other IPT members; each IPT will establish its internal processes including the responsibility for chairing meetings. The Contractor may propose other IPTs, if deemed necessary, to implement the IPPD approach.

1) Project Management IPT:

Membership will include key DOE project management staff, a DOE Contracting Officer's Representative, Contractor staff, and other Hanford Site contractor staff. Regulators will be invited to participate as appropriate. The Project Management IPT shall be the parent IPT for all other IPTs.

The charter of the Project Management IPT is to facilitate development of the *Integrated Master Plan* (IMP) (*see* Standard 1, *Reports, Drawings, and Schedules*), make implementation decisions, review alternatives, assess performance, allocate staff resources, and serve as the forum for early resolution of conflicts.

2) Safety, Health, and Environmental IPT:

Membership will include technical staff from DOE, a DOE Contracting Officer's Representative, Contractor staff, and other Hanford Site contractor staff. Regulators will be invited to participate as appropriate. The Safety, Health, and Environmental IPT will report to the Project Management IPT.

The charter of the Safety, Health, and Environmental IPT is to facilitate the development and review of safety, health, and environmental deliverables, achieve compatibility between Contractor and Hanford Site regulatory compliance actions, and to facilitate interactions with external regulators.

3) Interface IPT:

Membership will include technical staff from DOE, a DOE Contracting Officer's Representative, Contractor staff, and other Hanford Site contractor staff. The Interface IPT will report to the Project Management IPT.

The charter of the Interface IPT is to provide a single point of contact to define, control, and manage all interfaces between the Contractor and the Hanford Site, and to prepare an Interface Control Document for each of the interfaces shown in Figure C–1, *Privatization Functions, Inputs, and Outputs.*

4) Business/Contract/Finance/Development IPT:

Membership will include key DOE staff, and may include such personnel as a DOE Contracting Officer's Representative, DOE business and financial support staff, independent financial advisors, other Hanford site Contractors, Contractor staff, and Contractor independent financial advisor. Contractor lenders/investors will be invited to participate as appropriate. The Business/Contract/Finance/ Development IPT will report to the Project Management IPT.

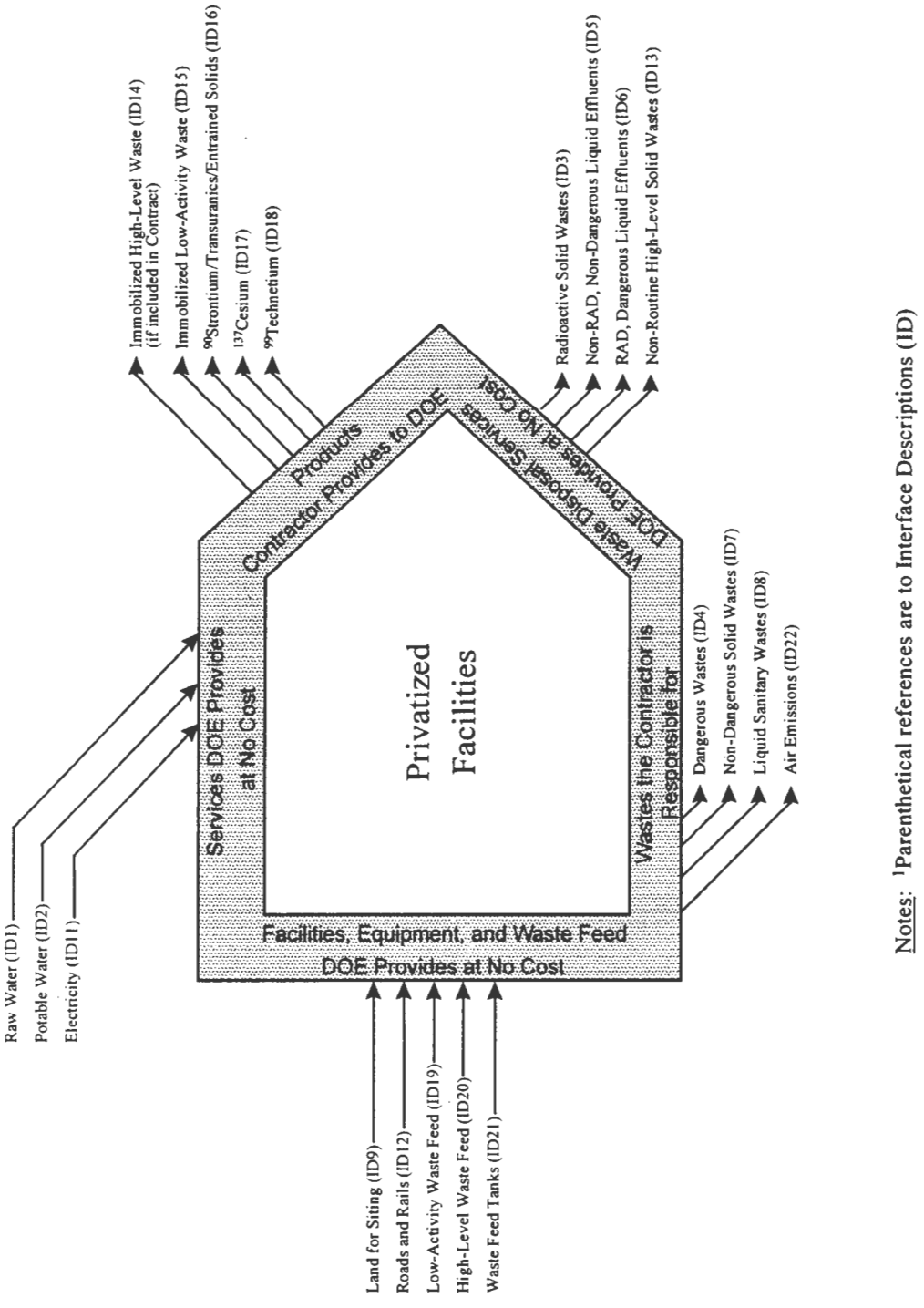
The charter of the Business/Contract/Finance/Development IPT is to facilitate development of the *Business Plan and Finance Plan* (*see* Standard 6, *Business and Finance Plan*), review and evaluate proposed incentive features, review proposed changes to facilitate financing; facilitate interactions with third party lenders and investors, identify, categorize, and evaluate risk allocations, analyze and evaluate changes between target and fixed unit prices (*see* Standard 7, *Fixed Unit Prices*), and act as a forum for discussion of business and financial issues.

DOE will use each IPT as a primary method to formally communicate information critical to the Contractor's success: regulatory framework, site requirements and interface information, Hanford Site operational constraints, and identification of potential problem areas. DOE may convene and chair IPT meetings with all privatization Contractors in attendance to enhance the communication of common information; the business sensitive or proprietary information of a single Contractor will be protected during these meetings.

C.3 Regulatory Environment

a. The Contractor will process DOE-owned highly radioactive and hazardous waste in privatized facilities. In order to operate its facilities within the appropriate and prudent level of controls consistent with the chemical and operational hazards and potential consequences, the Contractor shall establish and maintain a Safety, Health, and Environmental program that reflects: the principles and practices of effective radiological, nuclear, and process safety controls; effective industrial safety controls; and effective environmental protection.

The Contractor shall be responsible for the protection of: human health and the environment from radioactive chemicals, hazardous materials, and dangerous waste contamination; and non-radiological worker safety and health from conventional industrial and occupational hazards. The Contractor is responsible for providing safe and healthful working conditions for employees, and all other persons under the Contractor's control who work in the general vicinity of the Contractor site, including subcontractors.



Notes: [1]Parenthetical references are to Interface Descriptions (ID)

[2]Deactivated Facility and Site (ID10) is not shown

Figure C–1. Privatization Functions, Inputs, and Outputs

The Contractor shall comply with all applicable Federal, State, and local requirements for:

1) Non-radiological worker safety and health;

2) Radiological, nuclear, and process safety; and

3) Environmental protection.

Except where regulatory authority is specifically reserved for DOE by law or regulation, or where regulatory compliance responsibility is established for DOE in this Contract, DOE will not serve as a regulator or enforce regulatory compliance requirements. Where joint responsibility for regulatory compliance is assigned by an external regulator to DOE and the Contractor, the Contractor has primary responsibility and accountability to the external regulator. Where joint responsibility does not exist, the Contractor has full responsibility and accountability to the external regulator.

b. The regulatory environment for this Contract is structured into three principal areas of responsibility:

1) Non-radiological Worker Safety and Health

The Occupational Safety and Health Administration will be responsible for regulating non-radiological safety and health protection. The Contractor shall comply with all applicable Federal, State, and local safety and health regulations, including those of the Washington Industrial Safety and Health Administration (WISHA) and the Occupational Safety and Health Administration (OSHA).

2) Radiological, Nuclear, and Process Safety

DOE will regulate radiological and nuclear safety through a specifically chartered, dedicated *Regulatory Unit*. The Director of the DOE Regulatory Unit serves as the formal point of contact for radiological, nuclear, and process safety regulation. The Director will provide oversight of process safety but will not engage in enforcement actions.

3) Environmental Protection

(a) DOE will be responsible for meeting its compliance obligations under the *National Environmental Policy Act* (NEPA). The Contractor shall be required to provide materials to support these compliance efforts.

(b) The U.S. Environmental Protection Agency (EPA), Ecology, and/or the Washington State Department of Health (DOH) will regulate radioactive and non-radioactive air emissions. The Contractor shall integrate its operations and requirements into the Hanford Site-wide air compliance framework.

(c) EPA and Ecology will regulate and administer all permits for treatment and storage operations under the *Resource Conservation and Recovery Act* (RCRA) and the *State of Washington Hazardous Waste Management Act.* All RCRA/Dangerous Waste permits shall be signed by the Contractor and will be signed by DOE when required.

(d) Ecology, DOH, and/or local agencies will regulate liquid sanitary waste discharges to the soil column at the Contractor's site. No other types of liquid discharges or solid waste disposal will be allowed to the soil column.

(e) The U.S. Department of Transportation (DOT) and Ecology will regulate off-site transportation of radioactive and dangerous wastes. On-site transportation may require coordination with other Hanford Site contractors.

(f) Where required to comply with regulatory requirements or other provisions of this Contract, environmental compliance activities shall be integrated with those of DOE and other Hanford Site contractors.

C.4 Description of Services and Deliverables

a. The format of this Section is organized to identify specific deliverables for Part A and Part B and to establish specific requirements for these deliverables in *Standards, Specifications,* or *Interface Descriptions*. Best commercial practices shall apply where a *Standard, Specification,* or *Interface Description* is not provided. All data item deliverables in Part A and Part B shall be submitted in accordance with Standard 1, *Reports, Drawings, and Schedules.*

1) Part A deliverables are identified in paragraph C.4.1. In Part A, the Contractor establishes the technical, operational, regulatory, and financial elements required by privatized facilities to provide waste treatment services. The level of detail contained in Part A deliverables shall provide the information required by this Statement of Work and shall be commensurate with the level of design details produced.

2) Part B deliverables are identified in paragraph C.4.2. In Part B, the Contractor provides waste treatment services in privatized facilities at fixed unit prices, followed by deactivation of the privatized facilities. Figure C–1, *Privatization Functions, Inputs, and Outputs*, summarizes the privatization concept, responsibilities, and interfaces between the Contractor and DOE during Part B.

b. The operational concept for Part B is divided into services that shall be provided by the Contractor and services that will be provided by DOE.

1) LAW services provided by the Contractor:

(a) Receive batches of the three waste envelopes described in Specification 7, *Low-Activity Waste Envelopes Definition*, into an existing double-shell tank (DST) provided to the Contractor for operations and maintenance;

(b) Retrieve waste from the DST and transfer to Contractor facilities in a Contractor-provided transfer line;

(c) Determine the degree of *Entrained Solids*, *^{137}Cesium*, *^{99}Technetium*, and *^{90}Strontium and Transuranics* removal required to comply with the requirements of Specification 2, *Immobilized Low-Activity Waste*, and separate waste into low-activity and high-level fractions;

(d) Treat and immobilize the low-activity fraction and provide the final waste products described in Specification 2, *Immobilized Low-Activity Waste*, for return to DOE;

(e) Return the high-level fraction in the form of intermediate waste products as described in Specification 3, *Entrained Solids*; Specification 4, *^{137}Cesium*; and Specification 6, *^{90}Strontium and Transuranics*, to DOE;

(f) Store ^{99}Technetium (Specification 5, *^{99}Technetium*) as an intermediate waste product and return to DOE prior to deactivation;

(g) Disposition all secondary wastes; secondary wastes are identified on Figure C–1, *Privatization Functions, Inputs, and Outputs*, as *Waste Disposal Services DOE Provides at No Cost*, and *Wastes the Contractor is Responsible for*;

(h) Protect materials from diversion, and the facilities and materials from sabotage or other acts that can result in wide-spread exposure of workers and the public; and

(i) Deactivate all Contractor facilities at the completion of waste treatment services.

2) If the Contractor provides Low-Activity and HLW services, these additional services are required:

(a) Receive batches of the HLW feed described in Specification 8, *High-Level Waste Envelope Definition*, into a Contractor-provided transfer system, tank, and facility;

(b) Treat and immobilize the HLW feed and the ^{137}Cesium, ^{99}Technetium, and ^{90}Strontium and Transuranics in the high-level fraction, and deliver the final waste products described in Specification 1, *Immobilized High-Level Waste*; and

(c) Return the Entrained Solids as an intermediate waste product, and do not return the other intermediate waste products: ^{137}Cesium, ^{99}Technetium, and ^{90}Strontium and Transuranics.

3) Services that will be provided by DOE:

DOE will provide the services identified in Figure C–1, *Privatization Functions, Inputs, and Outputs*, subject to the conditions and limitations contained in Section C.7, *Interface Descriptions*.

c. DOE will retain title to all material in the waste envelopes provided to the Contractor and in all intermediate and final waste products. DOE will not take title or responsibility for the *Wastes the Contractor is Responsible for*, as identified on Figure C–1, *Privatization Functions, Inputs, and Outputs*. The Contractor shall be responsible for all waste envelope materials provided by DOE, and for any material releases prior to product acceptance by DOE. Only DOE-provided wastes shall be treated in the Contractor's privatized facilities.

d. The Contractor shall provide system capacity for waste treatment services for ~~both~~ minimum order quantities to be processed in 5 years and maximum order quantities which may be processed in 9 years as established in Clause H.9, *Ordering and Contract Order Quantities*, within the period of delivery estimated in Section F, *Deliveries or Performance*. For Waste Envelope A, the Contractor shall demonstrate a minimum system capacity of 600 metric tons (MT) sodium (Na) over a 12-month period. For Waste Envelope D, if included in this Contract, the Contractor shall demonstrate a minimum system capacity of 60 MT of waste oxides exclusive of Na and silicon (Si) over a 12-month period.

C.4.1 Part A

The Contractor shall provide the deliverables and services described in Table 4–1, *Part A Deliverables*:

Table 4–1, Part A Deliverables — CLIN 001 and CLIN 002*

Item No.	Description of Deliverable	Standard/Reference	Action Required	Action Party	Point of Delivery
A-1	Integrated Master Plan	Standard 1	P	D	CO
A-2	Technical Report	Standard 2	P	D	CO
A-3	Products and Secondary Wastes Plan	Standard 3	P	D	CO
A-4	Safety, Health, and Environmental Program Deliverables	Section C.3 and Standards 4 and 8	P	D, R	CO, R
A-5	Safeguards and Security Program Plan	Standard 5	P	D	CO
A-6	Interface Control Documents	Section C.7	P	D	CO
A-7	Business and Finance Plan	Standard 6	P	D	CO
A-8	Fixed-Unit-Prices	Standard 7	P	D	CO
A-9	Deactivation Plan	Standard 8	P	D	CO

Legend:

CO = Contracting Officer
D = DOE
P = Product Acceptance
R = Regulator (DOE as regulator or external regulator as appropriate)

* = If included in Contract

C.4.2 Part B

The Contractor shall provide the deliverables and services described in Table 4–2, *Part B Deliverables*:

Table 4–2, Part B Deliverables — CLIN 003 and CLIN 004*

Item No.	Description of Deliverable or Service	Standard/Reference	Action Required	Action Party	Point of Delivery
B-1	Integrated Master Plan	Standard 1	A	D	CO
B-2	Products and Secondary Wastes Plan	Standard 3	A	D	CO
B-3	Safety, Health, and Environmental Program Deliverables	Section C.3 and Standards 4 and 8	A	D, R	CO, R
B-4	Safeguards and Security Program Plan	Standard 5	A	D	CO
B-5	Low-Activity Waste Services	Specifications 2, 7 and Standard 3	P	D	H
B-6	High-Level Waste Services*	Specifications 1, 8 and Standard 3	P	D	H
B-7	Intermediate Waste Products*	Specifications 3, 4, 5, 6, 9, 10 and Standard 3	P	D	H
B-8	Facility Deactivation	Standard 8	P	D, R	H, R

Legend:

A = Review and Approve
CO = Contracting Officer
D = DOE
H = Project Hanford Management contractor
P = Product Acceptance
R = Regulator (DOE as regulator or external regulator as appropriate)

* = If included in Contract

C.5 Standards

This Section consists of the following Standards:

Standard 1: Reports, Drawings, and Schedules
Standard 2: Technical Report
Standard 3: Waste Products and Secondary Wastes
Standard 4: Safety, Health, and Environmental Program
Standard 5: Safeguards and Security Program
Standard 6: Business and Finance Plan
Standard 7: Fixed-Unit-Prices
Standard 8: Facility Deactivation

Standard 1: Reports, Drawings, and Schedules

The purpose of this *Standard* is to describe the requirements for the submission of all data item deliverables: reports, drawings, and the *Integrated Master Plan* (IMP) in Part A and Part B.

a. The Contractor shall prepare and submit all reports, drawings, and schedules as follows:

1) Legible, sequentially numbered, and securely bound;

2) Clear, concise English using precise technical writing; and

3) One reproducible hard copy and one electronic copy (with software/version identified).

b. The Contractor shall prepare and submit reports as follows:

1) Title page or cover sheet that identifies author, deliverable, and date;

2) Text on standard 8 ½" x 11" letter size paper (one-way foldouts of larger sizes may be included with report text);

3) Table of contents;

4) Summary section with introduction, summary, and conclusions; and

5) Detailed section with all required information.

c. Drawings shall be prepared and submitted in accordance with ANSI/ASME Standard Y-14 series, *Drafting Standards* (*see* Section J, Attachment 1, *List of Request for Proposals References*).

d. The Contractor shall develop and maintain an IMP. The IMP will be an event-based plan that provides:

1) Clear description of the deliverables defined in Part A and Part B;

2) Deliverable start and completion milestones, metrics to measure progress and completion-success for each event, and any decision actions that are required;

3) Description of key Contractor, Hanford Site, and regulator activities that support each deliverable with duration, start and finish dates, predecessor/successor activities, and method of performance;

4) Major performance milestones; safety, health, and environmental milestones; regulatory compliance milestones; design, construction, and start-up milestones; milestones for staging waste feed batches (*see* the waste transfer day as defined in Clause H.9, *Ordering and Contract Order Quantities*); and operational campaign milestones for waste treatment services;

5) Information for each interface shown on Figure C–1, *Privatization Functions, Inputs, and Outputs* including: type, composition, and quantity of material or service at the interface; and schedule for receipt or delivery; and

6) Gantt chart that identifies the order and interdependence of activities.

e. During Part A, the initial IMP is required 60 days after Contract award, with a final IMP submission at the end of the Contractor's period of performance for Part A. During Part B, the IMP shall be statused and updated monthly.

Standard 2: Technical Report

The purpose of this *Standard* is to describe the minimum topical content for the Technical Report, and the objective evidence to be presented in the Technical Report that demonstrates the performance of the planned waste treatment services.

The Technical Report shall include the following minimum topical contents:

a. For each waste envelope included under this Contract, a process flowsheet that includes:

1) Mass balance;

2) Preliminary equipment selection;

3) Projected equipment performance;

4) Range and expected value for the composition and volume of all product and secondary waste interfaces shown on Figure C–1, *Privatization Functions, Inputs, and Outputs;* and

5) Range and expected value of waste loading in the final waste products.

Expected values established in the process flowsheet will be used to establish the *Reference Values* for controlled elements in Clause H.6, *Price Adjustment for Waste Minimization.*

b. General facility arrangement drawings.

c. Process design basis, facility design basis, and operational concept for the waste treatment services, including:

1) Plant and major equipment life;

2) Plant capacity, operating efficiency, reliability, availability, maintainability, and inspectability;

3) Operational campaigns for each waste envelope included in this Contract and facility or process modifications required for each campaign;

4) Approach to minimize impact of waste envelope constituents that limit performance of waste treatment services; and

5) If HLW services are included in the Contract, capability to handle an alternative High-Level Waste (HLW) canister size (*see* Section J, Attachment 2, *Expanded Design Basis for High-Level Waste Processing,* paragraph b.).

d. Specific solutions to technical, operational, and related performance risks that were identified: 1) at the time of proposal; and 2) during Part A.

e. For each waste envelope included under this Contract, the disposal strategy for the *Waste the Contractor is Responsible for*, identified in Figure C–1, *Privatization Functions, Inputs, and Outputs.*

f. A detailed description of technical or operational performance improvements, the changes in the Contract required to implement the change, and the benefits if implemented. Improvement categories include, but are not limited to:

1) Materials the Contractor proposes to remove from the waste envelopes for reuse;

2) Alternative sequence to process waste envelopes;

3) Alternative site locations within the Hanford Site 200 Area;

4) Capability for increased waste treatment system capacity and duration of service;

5) Capability to provide non-*Resource Conservation and Recovery Act* regulated intermediate and final waste products;

6) Capability to increase waste oxide loading in the final waste products to a maximum achievable value;

7) Capability to reduce final waste product quantities, and volume through more aggressive separations; and

8) If HLW services are included in the Contract, the capability to receive expanded compositional range of selected constituents in the waste envelopes (*see* Section J, Attachment 2, *Expanded Design Basis for High-Level Waste Processing*, paragraph a.).

9) If HLW services are included in the Contract, the capability to treat and immobilize the HLW feed and the Entrained Solids removed from the LAW feed envelopes in the final waste products described in Specification 1, *Immobilized High-Level Waste* (no intermediate waste products would be returned to DOE under this case).

g. Plan for scale-up testing, including radioactive and non-radioactive process testing to be conducted during start of production operations; testing shall evaluate the variability expected during normal and bounding operations.

h. Design features that facilitate deactivation, and subsequent decontamination, decommissioning, and *Resource Conservation and Recovery Act* (RCRA) closure.

i. Design features that provide an integrated system of safeguards and security to prevent, detect, and respond to unauthorized possession, use, or environmental sabotage.

The objective evidence presented in the Technical Report shall include:

a. A technical performance basis document that demonstrates:

1) That the full range of waste envelopes can be treated;

2) Intermediate and final waste product requirements can be met; and

3) Separations processes are capable of separating the Hanford tank waste feed stream into a separate low-activity and high-level fraction.

b. Test results that demonstrate the performance of:

1) Separations processes for Entrained Solids, ^{137}Cesium, ^{99}Technetium, and ^{90}Strontium and Transuranics;

2) Conversion of ^{137}Cesium to an intermediate waste product; and

3) Final waste products.

Intermediate and final waste product performance shall comply with the testing and analysis requirements defined in Table S3–1, *Qualification and Verification*, Part A Qualification Requirements (*see* Standard 3, *Waste Products and Secondary Wastes*). Simulant validity shall be demonstrated if simulants are used.

The test results for Waste Envelopes A, B, and C shall identify the quantity and distribution of all materials that are present in amounts greater than 1 mg/liter or 1.0E-6 Curies(Ci)/liter.

If HLW services are included in the Contract, the test results for Waste Envelope D shall identify the quantity and distribution of all materials that are present in amounts greater than 1.0E-2 weight percent or 2.0E-5 Ci/gram.

c. Results of testing conducted on final products using simulants or waste envelope samples including the following, which must use waste envelope samples:

1) Testing with waste envelope samples is required for product waste loading, product composition, and product performance;

2) For the Immobilized Low-Activity Waste product, Specification 2 requirements established in Sections 2.2.2.6, 2.2.2.7, 2.2.2.8, 2.2.2.17, 2.2.2.20, and 2.2.2.21 shall be performed with waste envelope samples; and

3) For the Immobilized High-Level Waste Product, Specification 1 requirements established for the Product Consistency Test and compositional requirements in the WASRD shall be performed with waste envelope samples.

DOE will make available to the Contractor ten 125 ml samples of Waste Envelopes A, B, and C; two 50 gram dried samples of Waste Envelope D; and an additional 1.0 liter sample of Waste Envelope C. Samples will be sent to a location of the Contractor's choice. Liquid samples will be sent in a DOT 7A Type A Hedgehog package; dried samples will be sent in a Nu Pac PAS-1 cask (shielded cask certified by the Nuclear Regulatory Commission (USA/9184/B(U))). Sample characteristics may not be identical to waste delivered in Part B; actual tank waste characteristics will vary within waste envelopes. DOE will provide the Contractor the results of sample analysis and the methodology used to prepare samples. The Contractor is responsible for reconciling any changes to sample characteristics which may have occurred subsequent to sample preparation. DOE and the Contractor will jointly work to address problems resulting from changes in sample characteristics subsequent to sample preparation.

Standard 3: Waste Products and Secondary Wastes

The purpose of this *Standard* is to describe Contractor requirements for the *Products and Secondary Wastes Plan* submitted as a Part A deliverable; and implementation of the *Products and Secondary Wastes Plan* during Part B.

a. The Contractor shall identify, qualify, and verify all intermediate and final waste products included under this Contract; and identify and verify all secondary wastes.

b. During Part A, the Contractor shall prepare a *Products and Secondary Wastes Plan* for each intermediate and final waste product included under this Contract, and for all secondary wastes. The *Plan* shall provide the following information:

1) Identification and description of each intermediate and final waste product, and all secondary wastes. The description shall include chemical composition, physical properties, and a comparison of product characteristics to contract requirements.

2) Planned method(s) to qualify intermediate and final waste products, and all secondary wastes.

3) Planned method(s) to verify that intermediate and final waste products, and all secondary waste meet Contract requirements, including: analysis and testing of production samples, process knowledge and control, and statistical uncertainty.

4) Proposed documentation for Part B waste treatment services that certifies that intermediate and final waste products, and all secondary wastes, comply with Contract requirements.

5) For the intermediate and final waste products included in this Contract, the results for each proposed product using the requirements shown in Table S3–1, *Qualification and Verification*.

c. During Part B, the Contractor shall implement the DOE-approved *Products and Secondary Wastes Plan* and submit all required documentation that certifies that each of the intermediate and final products, and all secondary wastes, comply with Contract requirements.

Table S3–1. Qualification and Verification

Categories	Part A Qualification Requirements	Part B Verification Requirements
Package Performance	A	A, D, I
Surface Dose Rate	A	A, I
Transport Characteristics	A	D, I, T
Criticality	A	A
Product Stability	A, T	A, D, I
Product Composition and Waste Loading	A, T	A, D, I, T
Product Performance	A, T	A, D, T
Gas Generation	A	A, D
Hazardous Waste Characteristics	A, T	A, D, I, T
Product Exclusions	A	A, D, I
Volume Impact on Future HLW Production	A	A, T

Legend
A = Analysis
T = Testing
I = Inspection
D = Demonstration

These four terms are defined in Section E, *Inspection and Acceptance*.

Standard 4: Safety, Health, and Environmental Program

The purpose of this *Standard* is to: 1) define Contractor responsibilities for conventional non-radiological worker safety and health; radiological, nuclear, and process safety; and environmental protection; and 2) identify specific deliverables the Contractor shall submit during Part A and Part B.

a. The primary objectives of the Safety, Health, and Environmental Program are to:

1) Demonstrate compliance with established requirements;

2) Apply best commercial practices to provide conventional non-radiological worker safety and health protection; radiological, nuclear, and process safety, and environmental protection; and

3) Implement a cost-effective program that integrates safety, health, and environmental protection in all Contractor activities.

b. The Contractor is responsible for providing safe and healthful working conditions for employees and all other persons under the Contractor's control who work in the general vicinity of the Contractor site, including subcontractors. The Contractor shall develop and implement an integrated program for conventional non-radiological worker safety and health; radiological, nuclear, and process safety; and environmental protection. During Part A, the Contractor shall submit for DOE review and approval the Part A deliverables described in paragraph c. of this *Standard*. During Part B, the Contractor shall implement its program, and submit the Part B deliverables described in paragraph c. of this *Standard*.

c. Specific deliverables and program requirements are divided into three categories: non-radiological worker safety and health protection; radiological, nuclear, and process safety; and environmental protection. The deliverables required in each area of the Safety, Health, and Environmental Program are:

1) Non-radiological Worker Safety and Health

(a) The Contractor shall develop and implement an integrated standards-based safety management program that: 1) defines policies and procedures for protecting employees from conventional workplace hazards; and 2) ensures compliance with all applicable Federal, State, and local safety and health codes, regulations and standards including regulations of the Washington Industrial Safety and Health Administration (WISHA) and the Occupational Safety and Health Administration (OSHA).

(b) The Contractor's safety management program shall reflect proven principles of safety management and work planning that promote accident prevention, employee involvement, and sound hazard analysis and control.

2) Radiological, Nuclear, and Process Safety

(a) The Contractor shall develop and implement an integrated standards-based safety management program to ensure that radiological, nuclear, and process safety requirements are defined, implemented, and maintained. Radiological, nuclear, and process safety requirements shall be adapted to the specific hazards that are identified with the Contractor's waste treatment services.

(b) The Contractor's integrated standards-based safety management program shall be developed to comply with the specific nuclear safety regulations defined under the 10 CFR 800 series of nuclear safety requirements and with the regulatory program established in the following four documents:

(1) DOE/RL-96-0003, Revision 0, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*, February 1996;

(2) DOE/RL-96-0004, Revision 0, *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for TWRS Privatization*, February 1996;

(3) DOE/RL-96-0005, Revision 0, *Concept of the DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*, February 1996; and

(4) DOE/RL-96-0006, Revision 0, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors*, February 1996.

The integrated standards-based safety management program shall integrate the appropriate planning and practices elements specified in 29 CFR 1910.119, *OSHA Process safety management of highly hazardous chemicals*.

(c) The Contractor shall prepare and submit to the DOE Regulatory Unit for review and approval, the radiological, nuclear, and process safety deliverables defined in Table S4–1, *Radiological, Nuclear, and Process Safety Deliverables for Part A and Part B.* Each deliverable is structured around the following six actions:

(1) Standards Approval;
(2) Initial Safety Evaluation;
(3) Authorization for Construction;
(4) Authorization for Production Operations;
(5) Oversight Process Determination; and
(6) Authorization for Deactivation.

(d) Specific requirements for the radiological, nuclear, and process safety deliverables are provided in the documents referenced in paragraph c.2)(b) of this *Standard.*

(e) During Part A, the Regulatory Unit will develop and provide additional guidance and implementing detail for the preparation and review of documents and activities identified in Table S4-1.

Table S4–1. Radiological, Nuclear, and Process Safety Deliverables for Part A and Part B

	Regulatory Action	Deliverable[1]	References	Part A Deliverable Status	Part B Deliverable Status		
					Start of Construction	Start of Production Operations	Start of Deactivation
1.	Standards Approval	Safety Requirements Document	DOE/RL-96-0003	Final	Revision	Revision	
		Integrated Safety Management Plan[2, 4]	DOE/RL-96-0003,10 CFR 830, 29 CFR 1910	Final	Revision	Revision	Revision
		Hazards Analysis Report	DOE-STD-3009-94, 29 CFR 1910.119	Final	Revision	Revision	
		Employee Concerns Management System	DOE Order 5480.29	Final			
		Radiation Exposure Standard for Workers Under Accident Conditions	DOE/RL-96-0006	Final			
		Quality Assurance Program[5]	10 CFR 830.120	Final	Revision	Revision	Revision
2.	Initial Safety Evaluation	Initial Safety Assessment	DOE/RL-96-0003	Final			
3.	Authorization for Construction	Construction Authorization Request	DOE/RL-96-0003		Outline/Final		
		Deactivation Plan	DOE/RL-96-0003	Outline	Draft/Final	Revision	Revision
4.	Authorization for Production Operations	Operating Authorization Request	DOE/RL-96-0003		Outline	Final	
		Safety Analysis Report[4]	DOE/RL-96-0003, 10 CFR 830.110, 29 CFR 1910.119	Initial	Preliminary	Final	Revision
		Emergency Response Plan	Note 3	Outline	Draft	Final	Revision
		Unreviewed Safety Question Plan[4]	10 CFR 830.112	Outline	Draft	Final	Revision
		Conduct of Operations Plan[4]	10 CFR 830.310, 29 CFR 1910	Outline	Draft	Final	Revision
		Technical Safety Requirements[4]	10 CFR 830.320	Outline	Draft	Final	Revision
		Training and Qualification Plan[4]	10 CFR 830.330	Outline	Draft	Final	Revision
		Maintenance Implementation Plan[4]	10 CFR 830.340	Outline	Draft	Final	Revision
		Occurrence Reporting Procedures[4]	10 CFR 830.350	Outline	Draft	Final	Revision
		Environmental Radiological Protection Program[4]	10 CFR 834	Outline	Draft	Final	Revision
		Radiation Protection Program	10 CFR 835	Outline	Draft	Final	Revision
5.	Oversight Process Determination	Operational Assessment Reports	DOE/RL-96-0003	Outline	On-going	On-going	On-going
6.	Authorization for Deactivation	Deactivation Safety Assessment	DOE/RL-96-0003		Outline	Draft	Final
		Deactivation Authorization Request	DOE/RL-96-0003		Outline		Final

Notes:

1. In addition to the deliverables listed, supplemental information for each regulatory action shall be submitted as required by DOE/RL-96-0003 *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors.*
2. The implementation plans required by the 10 CFR 830 rules are to be integrated into the Integrated Safety Management Plan.
3. Shall comply with requirements of 40 CFR 68, 40 CFR 355, DOE/RL 94-02, Revision 1, and 29 CFR 1910.38
4. References for these deliverables may be available only as a proposed rule.
5. An initial Quality Assurance Program that supports performance of Part A activities shall be submitted 45 days after Contract award (based on existing Contractor systems wherever possible); the DOE Regulatory Unit will provide comment within 15 days of submission.

3) Environmental Protection

(a) The Contractor shall develop and implement an integrated program to provide environmental protection and compliance.

(b) The Contractor shall prepare and submit to the Contracting Officer for review and approval, the environmental protection deliverables defined in Table S4–2, *Environmental Protection Deliverables for Part A and Part B* and as follows:

Table S4–2. Environmental Protection Deliverables for Part A and Part B

Deliverable Description	Reference	Part A Deliverables	Part B Deliverables			
			Start of Construction	Start of Production Operations	During Operations	Start of Deactivation
Environmental Plan	Section C.5 and Standard 4	Final	Revision	Revision	Revision	Revision
RCRA Part B Permit Application	WAC 173-303-806	Draft	Approval from Ecology	Final	Revision	Revision
Environmental Report	Section C.3 and 10 CFR 1021	Final				

(1) Environmental Plan: Detailed plan that identifies the Contractor's structured approach for environmental protection, compliance, and permitting, including: 1) all planned environmental permitting and compliance activities for Part A and Part B; 2) a detailed permitting and compliance schedule linked to the *Integrated Master Plan* schedule; and 3) environmental monitoring and reporting requirements.

(2) RCRA Part B permit application(s): Prepared as a chapter to the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*, Permit Number WA 7890008967.

During Part A, the Contractor shall prepare the permit application(s): 1) in accordance with the requirements of WAC 173-303-806, and 2) consistent with the level of technical information required by the Contract for Part A.

During Part B, the Contractor shall complete revisions to the permit application(s) and obtain RCRA final status prior to start of production operations; the Contractor may request approval to start construction from the external regulator prior to obtaining RCRA final status.

(3) Environmental Report: A report 180 days after Contract award that describes the possible environmental impacts from construction and operation of waste treatment facilities.

The Environmental Report shall describe: 1) all reasonably foreseeable environmental impacts, including site, system and process impacts; 2) site suitability for planned activities; 3) areas to be disturbed; and 4) reasonably foreseeable, direct and indirect impacts on air quality, surface and ground water, human health, physical and biological resources, noise levels, cultural resources, socioeconomics, and land use. If information is incomplete or unavailable, the extent and impact of the missing information shall be described. The Contractor shall designate any information in the report that is business sensitive or proprietary.

Subsequent to submission of the Environmental Report, the Contractor shall provide any additional environmental and technical information required to establish the environmental impacts of Contractor activities.

Standard 5: Safeguards and Security Program

The purpose of this *Standard* is to describe the Safeguards and Security (S&S) program requirements in Part A and Part B.

The Contractor shall develop and implement an S&S program to ensure the protection of DOE-owned material.

a. The scope of DOE S&S requirements includes:

   1) Physical protection;
   2) Material control and accountability (MC&A);
   3) Information and personnel security; and
   4) Government property protection.

b. The Contractor's program shall comply with the applicable regulations, DOE Orders, and DOE-provided top-level S&S requirements stipulated in the document titled *Top-Level Safeguards and Security Requirements for TWRS Privatization* (DOE/RL-96-0002) (*see* Section J, Attachment 1, *List of Request for Proposals References*).

c. The Contractor shall prepare and submit to the Contracting Officer for review and approval, the Safeguards and Security deliverables defined in Table S5–1, *Safeguards and Security Deliverables*.

Table S5–1. Safeguards and Security Deliverables

Deliverable Description	Reference	Part A Deliverables	Part B Deliverables				
			Start of Construction	Start of Production Operations	During Operations	Start of Deactivation	Contract Closure
Safeguards and Security Program Plan consisting of:							
MC&A Plan	Standard 5 and DOE/RL-96-0002	Outline	Draft	Final	Annual Revision	Revision	
Security Plan	Standard 5 and DOE/RL-96-0002	Outline	Draft	Final	Annual Revision	Revision	
Classified Attachment	Standard 5 and DOE/RL-96-0002	Outline	Draft	Final	Annual Revision	Revision	
Internal Assessment Reports	Standard 5 and DOE/RL-96-0002			Final	Annual	Final	Final
External Assessment Reports	Standard 5 and DOE/RL-96-0002		Submission within 45 days of receipt of DOE/RL external review report.				

Standard 6: Business and Finance Plan

The purpose of this *Standard* is to describe the requirements for the Business and Finance Plan submitted as a deliverable in Part A.

a. The Business Plan for implementing the Part B work shall, as a minimum, include the following:

1) Proposed incentive features that would provide DOE with a more favorable arrangement than is presently included in the Contract;

2) Proposed changes in, or additions to, other Contract terms and conditions deemed necessary, in the opinion of the Contractor, to obtain more reasonable project financing terms;

3) Detailed text of any performance guarantees which the Contractor will provide, including any such guarantees that are a part of the Contractor's Finance Plan (*see* this Standard, paragraph b., below);

4) Changes to the following types of information previously furnished to DOE as part of the source selection process: company/team organizational structure; project roles and responsibilities; debt ratings; equity positions; and

5) For each year of the project, an estimate of the required funding by DOE for waste treatment services and for payment of termination costs in the event of a termination for convenience; this information shall be linked with the *Integrated Master Plan* information specified in Standard 1, *Reports, Drawings, and Schedules*.

b. The Finance Plan for implementing the Part B work shall, as a minimum, include the items listed below:

1) Description of the plan for financing all aspects of the Part B work, including: permitting, detailed design, construction, test operation, operation, and deactivation;

2) Sources and uses of all funds and their related mechanisms, including: equity, senior debt (both taxable and non-taxable), subordinate debt, guarantees, letters of credit, and performance bonds;

3) Description of any contingencies incorporated into the Finance Plan and identification of any reserves to be set aside from project financing to cover potential problems;

4) Identification of the participants, a summary of the level of commitment of each participant, and any restrictions, indemnifications or covenants required by the Contractor of such participants; each participant shall provide a set of audited financial statements for the past three years;

5) Project pro-forma (statements of revenue and expenses) detailing the projected revenues and expenses of the project, contributions to reserve funds and cash available for debt service, projected debt service and debt coverage ratios and cash available for distribution. In addition, provide a discussion of debt financing structure reflecting the proposed debt coverage ratios;

6) Identification of the steps and schedules for closing the financing should the Contractor be authorized to perform the Part B work; and

7) Letter of commitment from each equity participant and a letter of intent from each investor/lender, including enumeration of all applicable contingencies.

Standard 7: Fixed-Unit-Prices

The purpose of this *Standard* is to describe the requirements for the fixed-unit-prices submitted as deliverables in Part A. The fixed-unit-prices will reflect the experience and knowledge gained by the Contractor in the performance of Part A work and must be demonstrably reasonable to enable a determination of best value to the government.

a. Fixed-unit-prices shall be provided as follows:

1) For minimum order quantities of waste treatment services for Waste Envelopes A, B, and C;

2) If Low-Activity and High-Level Waste (HLW) services are included in the Contract, fixed-unit-prices for minimum order quantities of waste treatment services for Waste Envelopes A, B, C, and D;

3) Fixed-unit-price tables, for the range between minimum and maximum order quantities of waste treatment services for Waste Envelopes A, B, and C. The Contractor shall identify tiered unit prices and the corresponding range of quantities; and

4) If Low-Activity and HLW services are included in the Contract, fixed-unit-price tables for the range between minimum and maximum order quantities of waste treatment services for Waste Envelopes A, B, C, and D. The Contractor shall identify tiered unit prices and the corresponding range of quantities.

b. Any difference (increase or decrease) between the fixed-unit-prices provided in paragraphs a. 1) and 2) above, and their respective target unit prices proposed in Section B, *Supplies or Services and Prices*, shall be fully supported, in such form and detail as shall be reasonably required by the Contracting Officer. Where appropriate, such support shall include changes to the assumptions and estimate bases provided by the Contractor as part of its proposal (as said assumptions and estimate bases may have been revised by Contractor proposal revisions made prior to award of Contract) in accordance with Section L.8, *Proposal Preparation Instructions — Volume V - Pricing Proposal* of the Solicitation.

c. Differences between fixed-unit-prices and target unit prices shall not be based upon elements of cost or aspects of Contract performance that were known, or should reasonably have been known, by the Contractor at the time of Contract award or were identified as assumptions or estimate bases by the Contractor prior to award of the Contract.

Standard 8: Facility Deactivation

The purpose of this *Standard* is to describe the requirements for the *Deactivation Plan* to be submitted in Part A and the facility deactivation to be performed in Part B.

a. During Part A, the Contractor shall submit a *Deactivation Plan* for review and approval. The *Deactivation Plan* shall describe how the Contractor-provided facilities and equipment shall be deactivated, and discuss the following topical areas listed below.

1) Facility End-Point Criteria: the physical state at the end of facility deactivation, including detailed end-points for the site, facilities, systems/equipment, and documentation. Minimum facility end-point criteria shall include the following:

(a) Remediation of all hazardous and dangerous chemicals and radioactive site contamination that results from Contractor activities.

(b) Removal of inventories of hazardous and dangerous chemicals, and radioactive materials.

(c) Removal and stabilization of residual radioactive source terms to reduce risk to at least a low hazard facility in accordance with DOE Order 5480.23 and DOE-STD-1027-92. Primary facility and process system requirements include:

- Leaving in-place major process equipment, piping, and deactivated electrical systems.
- Flushing internal surfaces of all process systems to remove water-soluble or transportable chemical and radioactive material.
- Decontaminating and cleaning external surfaces of all process equipment to minimize radioactive source terms.
- Decontaminating and cleaning all internal surfaces of the process facility to minimize radioactive source terms.
- Fixing any residual contamination on internal surfaces of the process facility to prevent migration.

- Minimizing areas that require radiological or other controls.

- Containing residual hazardous and dangerous chemicals and radioactive materials within existing confinement structures.

(d) Removal of all Special Nuclear Material (SNM) to the practical extent possible. The quantity of nuclear materials remaining shall be no greater than Category IV-E levels established in DOE Order 5633.3B.

(e) Leaving in-place all confinement structures with adequate capability to maintain deactivated status; stabilizing other structures to minimize weather and prevent animal intrusion; and providing safe, controlled access to all structures.

(f) Providing the minimum number of active systems required to maintain deactivated status to accomplish the following:

- Deactivation, consolidation, or isolation of all facility and process systems to the maximum extent possible while maintaining contamination control.

- Removal of all combustible and flammable materials; reduction or elimination of all fire protection, monitoring, and alarm systems to the maximum extent possible.

- Elimination or minimization of all utility systems not required to maintain deactivated status.

(g) Removal of separable equipment, materials, and tools for other use or salvage.

(h) Installation of monitoring systems for interim surveillance for use prior to Decontamination and Decommissioning (D&D)/RCRA Closure.

(i) Provision of deactivated facility configuration and operations documentation that defines: process and facility configuration; level and location of residual contamination; system capabilities that remain for D&D/RCRA Closure; and operational requirements prior to D&D/RCRA Closure.

2) Final Facility and Site Characterization Survey: the methodology to establish location of residual contamination and contamination level.

3) Operational and Maintenance Requirements of the Deactivated Facility: the required information to maintain the deactivated facility, including operations and maintenance requirements for active systems, maintenance requirements to assure structural integrity, and procedures necessary to reactivate essential systems for eventual D&D/RCRA closure.

4) Facility Turnover: the methods to verify achievement of end-point criteria, protocols for formal turnover of the facility and site to DOE, and the transfer of facility operating records and other documentation.

b. Upon completion of waste treatment services in Part B, the Contractor shall deactivate Contractor-provided facilities in conformance with the approved *Deactivation Plan*, Interface Description 10, *Deactivated Facility and Site*, and the deactivation authorization provided by the DOE Regulatory Unit.

C.6 Specifications

This Section consists of Specifications for:

a. Products the Contractor provides to DOE for the interfaces shown in Figure C–1, *Privatization Functions, Inputs, and Outputs*;

Specification 1:	Immobilized High-Level Waste
Specification 2:	Immobilized Low-Activity Waste
Specification 3:	Entrained Solids
Specification 4:	^{137}Cesium
Specification 5:	^{99}Technetium
Specification 6:	^{90}Strontium and Transuranics

b. Waste feed provided by DOE to the Contractor for the interfaces shown in Figure C–1, *Privatization Functions, Inputs, and Outputs*; and

Specification 7:	Low-Activity Waste Envelopes Definition
Specification 8:	High-Level Waste Envelope Definition

c. Common product and waste disposal return requirements for the interfaces shown in Figure C–1, *Privatization Functions, Inputs, and Outputs*;

Specification 9:	Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask
Specification 10:	Limitations on Returned Intermediate Waste Products Affecting Immobilized High-Level Waste Product Quantity

Specification 1: Immobilized High-Level Waste

1.1 Scope: This *Specification* defines requirements for the *Immobilized High-Level Waste* (IHLW) product, one of the final waste products identified in Section C.4 of this *Statement of Work.*

The reference IHLW product for disposal in the proposed geologic repository is a vitrified borosilicate glass waste form.

1.2 Requirements:

1.2.1 References:

1.2.1.1 WASRD. DOE/RW-0351P. Rev. 2. May 1996. *Waste Acceptance System Requirements Document (WASRD)*. U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Washington, D.C.

1.2.1.2 WAPS. DOE/EM-0093. Rev. 1. May 1995. *Waste Acceptance Product Specifications for Vitrified High Level Waste Forms* (*WAPS*). U.S. Department of Energy, Office of Environmental Management, Washington, D.C.

1.2.1.3 QARD. DOE/RW-0333P. Rev. 5. October 2, 1995. *Quality Assurance Requirements and Description for the Civilian Radioactive Waste Management Program (QARD)*. U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Washington, D.C.

1.2.2 Product Requirements:

1.2.2.1 Immobilized High-Level Waste:

1.2.2.1.1 Product and Disposal Requirements: Requirements for the IHLW product are provided in the WASRD, WAPS, and QARD. The WASRD is the senior requirements document and defines the minimum set of requirements and associated limits for acceptance of the IHLW product in the proposed geologic repository. The WAPS establishes the minimum set of product requirements for the IHLW product. The QARD establishes the minimum quality assurance requirements for the IHLW product.

1.2.2.1.2 Canister System: The reference canister system used to contain the IHLW product shall be one of the following: the canister system used at the West Valley Demonstration Project in New York, the canister system used at the Defense Waste Processing Facility in South Carolina, or a Contractor-proposed canister system that requires qualification and DOE review and approval

during Part A. The Contractor shall maintain the capability for a 4.5 meter long by 0.61 meter diameter canister system until the results of a canister system trade study (being performed by DOE) is completed in Part A and DOE and the Contractor agree upon canister system requirements.

1.2.2.1.3 Product Loading: Loading of non-volatile components in Waste Envelope D shall be a minimum of 25 percent by weight in the product, on an equivalent oxide basis. No credit is given in the product loading for the Na_2O, SiO_2, and other materials that result from processing Low-Activity Waste. Product waste loading shall be calculated on an average basis for each batch transfer of Waste Envelope D.

1.2.3 Handling Requirements:

1.2.3.1 Product Handling: The canister shall have a point of connection that allows vertical upward, vertical downward, and horizontal motion while attached to a hoist and grapple.

1.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes* shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance*.

Specification 2: Immobilized Low-Activity Waste

2.1 Scope: This *Specification* defines the requirements for the *Immobilized Low-Activity Waste* (ILAW) product, one of the final waste products identified in Section C.4 of this *Statement of Work*.

2.2 Requirements:

2.2.1 References:

2.2.1.1 10 CFR 61. *Licensing Requirements for Land Disposal of Radioactive Waste*, Code of Federal Regulations. U.S. Nuclear Regulatory Commission, Washington, D.C.

2.2.1.2 40 CFR 268. *Land Disposal Restrictions*. Code of Federal Regulations. U.S. Environmental Protection Agency, Washington, D.C.

2.2.1.3 49 CFR 172.101. *Table 2 - Radionuclides*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

2.2.1.4 49 CFR 173. *Shippers-General Requirements for Shipments and Packaging.* Subpart I - *Radioactive Materials*, Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

2.2.1.5 ANSI Standard N14.5. January 16, 1987. *American National Standard for Radioactive Materials - Leakage Tests on Packages for Shipment*. American National Standards Institute, New York, New York.

2.2.1.6 ANSI/ANS-16.1. April 14, 1986. *Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short Term Test Procedure.* American National Standards Institute/American Nuclear Society, La Grange Park, Illinois.

2.2.1.7 ANSI/ANS-55.1. July 28, 1992. *American National Standard for Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants; Appendix B - Testing for Free Liquids in Solidified Matrices*. American National Standards Institute/American Nuclear Society, La Grange Park, Illinois.

2.2.1.8 ASTM B553-79. May 25, 1979. *Standard Test Methods of Electroplated Plastics*. American Society for Testing and Materials. Easton, Maryland.

2.2.1.9 ASTM C39-94. November 15, 1994. *Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens*. American Society for Testing and Materials, Easton, Maryland.

2.2.1.10 ASTM C1285-94. October 15, 1994. *Standard Test Methods for Determining Chemical Durability of Nuclear Waste Glasses: Product Consistency Test (PCT)*. American Society for Testing and Materials, Easton, Maryland.

2.2.1.11 ASTM G21-90. October 26, 1990. *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*. American Society for Testing and Materials. Easton, Maryland.

2.2.1.12 ASTM G22-76. November 26, 1976. *Standard Practice for Determining Resistance of Plastics to Bacteria*. American Society for Testing and Materials, Easton, Maryland.

2.2.1.13 DOE Order 5820.2A. September 26, 1988. *Radioactive Waste Management*. U.S. Department of Energy, Washington, D.C.

2.2.1.14 NRC. January 1995. *Branch Technical Position on Concentration Averaging and Encapsulation*. Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

2.2.1.15 NRC. January 1991. *Technical Position on Waste Form*, Rev. 1, Low-Level Waste. Division Management Branch, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission, Washington, D.C.

2.2.1.16 NUREG/BR-0204. April 1995. *Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest*. U.S. Nuclear Regulatory Commission, Washington, D.C.

2.2.1.17 NUREG-1293. Rev. 1. April 1991. Pittiglio, C. L., Jr., and D. Hedges. *Quality Assurance Guidance for a Low-Level Radioactive Waste Disposal Facility*. Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

2.2.1.18 SW-846, Method 9095. Rev. 0. September 1986. *Paint Filter Liquids Test*. In Test Methods for Evaluating Solid Waste, Volume 1C: Laboratory Manual Physical/Chemical Methods, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

2.2.1.19 WA 7890008967. Rev. 2. August 1995 (as modified). *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage and Disposal of Dangerous Waste*. Hanford Facility, Washington State Department of Ecology, Olympia, Washington.

2.2.1.20 WAC 173-303. 1995. *Dangerous Waste Regulations*, Washington Administrative Code, as amended.

2.2.2 Product Requirements:

2.2.2.1 Package Description: The ILAW products shall be in the form of a package. The constituent parts of each package are: a sealed metal container enclosing a waste form, in which the ILAW product is emplaced; an optional matrix material, which may be used to encapsulate the waste form; and an optional filler material, which may be used to fill void spaces in the container before it is closed.

2.2.2.2 Waste Loading: For every gram-mole of sodium provided to the Contractor in Waste Envelopes A and C, the Contractor may produce up to 100 cm^3 of ILAW product (based on the external dimensions of the package). For every gram-mole of sodium in Waste Envelope B, the Contractor may produce up to 250 cm^3 of ILAW product (based on the external dimensions of the package).

2.2.2.3 Size and Configuration: The package shall be a rectangular metal container and shall have an external dimension, including all appurtenances, of 1.8m (length) x 1.2m (width) x 1.2m (height), ± 0.2m. Once a package size is selected, the dimension of all packages shall be constant and have a dimensional tolerance of ± 0.01m.

2.2.2.4 Mass: The mass of each package shall not exceed 10,000 kg.

2.2.2.5 Void Space: The head space in the fully loaded package shall not exceed 1 percent of the total internal volume of the container. A non-compactible filler material (screened to 4 mesh size or smaller) may be used to meet this requirement. If the waste form and matrix materials are loaded into the container in a manner that results in void spaces between the emplaced pieces, the filler material shall be used to fill the void spaces. If a filler material is used, it shall be compatible with the other materials in the package.

2.2.2.6 Chemical Composition Documentation: The Contractor shall identify in the *Products and Secondary Wastes Plan* the chemical composition of the waste form, matrix material, and filler material for each package. The reported composition shall include elements (excluding oxygen) present in concentrations greater than 0.5 percent by weight. Crystalline and noncrystalline phases expected to be present shall be identified and the amount of each phase shall be estimated for the waste form, matrix material, and filler material.

2.2.2.7 Radiological Composition Documentation: The Contractor shall identify the individual package inventory of radionuclides that are significant as defined in NUREG/BR-0204 and 49 CFR 172.101 (Table 2), in the *Products and Secondary Wastes Plan*. ^{99}Technetium (^{99}Tc) shall be considered to be significant at concentrations greater than 0.003 Ci/m^3 in the ILAW form. The inventories shall be indexed to the year 2000. The documentation shall be consistent with the Radiological Description format described in NUREG/BR-0204.

2.2.2.8 Radionuclide Concentration Limitations: The radionuclide concentration of the ILAW form shall be less than Class C limits as defined in 10 CFR 61.55 and as described in *Branch Technical Position on Concentration Averaging and Encapsulation*. In addition, the average concentrations of ^{137}Cesium (^{137}Cs), ^{90}Strontium (^{90}Sr), and ^{99}Tc shall be limited as follows: ^{137}Cs < 3 Ci/m^3, ^{90}Sr < 20 Ci/m^3 and ^{99}Tc < 0.3 Ci/m^3. The average concentrations shall be calculated by adding the inventories of each of the above radionuclides in the packages that have been presented to date for acceptance and dividing by the total volume of waste in these packages.

2.2.2.9 Surface Dose Rate Limitations: The dose rate at any point on the external surface of the package shall not exceed 1,000 mRem/hr.

2.2.2.10 Surface Contamination Limitations: Removable contamination on the external surfaces of the package shall not exceed 367 Bq/m^2 for alpha and 3670 Bq/m^2 for beta-gamma contamination when measured using the method described in 49 CFR 173.443(a).

2.2.2.11 Labeling and Manifesting: Each package shall have a label attached or stamped on the outer surfaces of at least two sides of the container in a readily accessible location. The label shall contain a unique identification (e.g., serial number) which shall be assigned to each package and the corresponding documentation. Labels and markings shall have a predicted service life of 50 years assuming that the packages are stored in a ventilated enclosure at ambient temperatures.

The Contractor shall prepare a shipping manifest for delivery with each shipment of ILAW product. Information on the manifest shall satisfy the requirements in DOE Order 5820.2A, Chapter III, Section 3.d, and NUREG/BR–0204. Any package containing dangerous waste must be labeled and manifested in accordance with WAC 173-303-370 and the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Wastes* (Permit No. WA 7890008967).

2.2.2.12 Closure and Sealing: The fully loaded package shall be closed, sealed, and a Tamper Indicating Device applied. The closure system shall be leak tight as defined by *ANSI Standard N14.5*. The closure system shall be designed to ensure that the seal remains intact for a storage period of 50 years in an ambient-temperature, ventilated enclosure.

2.2.2.13 External Temperature: The temperature of the accessible external surfaces of the package shall not exceed 50°C when returned to DOE. This temperature constraint shall assume a shaded, still air environment at an ambient temperature of 38°C.

2.2.2.14 Free Liquids: The package shall contain no detectable free liquids as prescribed in ANSI/ANS-55.1 or SW-846 Method 9095.

2.2.2.15 Pyrophoricity or Explosivity: The package contents shall not be pyrophoric, readily capable of detonation, or readily capable of explosive decomposition or reaction (including reaction with water) at normal pressure and temperature. The waste form and any optional matrix and filler materials shall not be ignitable or reactive as defined in WAC 173-303-090(5) and WAC 173-303-090(7).

2.2.2.16 Explosive or Toxic Gases: The package shall not contain or be capable of generating quantities of explosive (e.g., hydrogen) or toxic gases, vapors, or fumes harmful to persons handling the waste.

2.2.2.17 Radionuclide Release Rate: The average fractional release rates for the waste form or waste form/matrix combination shall be the following: For ^{99}Tc, the average fractional release rate (R_{TC}) shall be less than 2.8E-14 (s^{-1}); and for, ^{79}Selenium (^{79}Se), ^{129}Iodine (^{129}I), ^{237}Neptunium (^{237}Np), and uranium isotopes, the average fractional release rate (R) shall be less than 1.4E-13 (s^{-1}) (*see* Section 2.2.2.17.1). The basis for fractional release rate determination shall be the radionuclide inventory remaining in the liquid fraction of waste processed following solid separation.

2.2.2.17.1 Silicate Glass Waste Forms: For silicate glass waste forms, compliance with the fractional release rate requirements shall be established by showing that the average value of the product of the glass corrosion rate, the glass surface area to volume ratio, and the fraction of the processed inventory of technetium that is solidified in the glass satisfies the following constraints:

Equation TS 2.1 $$R_{TC} = \left(\frac{C_g}{\rho}\right) \times \left(\frac{S_g}{V_g}\right) \times F < 2.8E\text{-}14 \ (s^{-1})$$

Equation TS 2.2 $$R = \left(\frac{C_g}{\rho}\right) \times \left(\frac{S_g}{V_g}\right) < 1.4E\text{-}13 \ (s^{-1})$$

where:

C_g is the corrosion rate of the glass ($kg/(m^2\text{-}s)$)

ρ is the glass density (kg/m^3)

S_g is the surface area of the glass in the package that is available for corrosion (m^2)

V_g is the glass volume in the package (m^3)

F is the fraction of the soluble inventory (residual inventory in the solution after solid/liquid separation) of technetium that is solidified in the glass. F is calculated by dividing the technetium inventory solidified in each package by the average inventory to date of technetium processed per package. F shall be estimated by either sampling and analyzing the feed and glass products or from process knowledge.

The average values for R and R_{TC} shall be calculated by maintaining a running summation of the R and R_{TC} values of the packages presented to date for acceptance (excluding any that have not been accepted) and dividing by the number of packages accepted to date.

The corrosion rate (C_g) shall be the average rate determined to occur at 20°C over a period of 7 days when statistical product inventory information of the waste form is tested using the Product Consistency Test (PCT) (ASTM C1285-94). The 20°C rates shall be determined as follows:

- The normalized release of sodium, silicon, and boron (if present as a constituent in the glass) shall be measured using a 7-day PCT run at 20°C (ASTM C1285-94). Alternatively, the normalized releases may be measured at any temperature in the range of 20°C to 90°C provided the Contractor develops and applies an empirical correlation to relate the elevated temperature results to those at 20°C.

- The normalized release of Si shall be used to calculate the average corrosion rate of the glass (kg/(m^2-s)) over the 7-day test period. Secondary mineral formation and phase separation shall not affect the PCT.

The surface area to volume ratio (S_g/V_g) of the glass product shall be the average surface area to volume ratio of the products expected based on information obtained from destructive examination of prototypical non-radioactive products produced during product qualification.

2.2.2.18 Compressive Strength: The Contractor shall determine the mean compressive strength of the waste form (and any optional matrix and filler materials) by testing representative non-radioactive samples. The compressive strength shall be at least 3.45E6 Pa when tested in accordance with ASTM C39-94 or an equivalent testing method.

2.2.2.19 Thermal, Radiation, Biodegradation and Immersion Stability: The ILAW product shall be resistant to thermal, radiation, biodegradation and immersion degradation, as described in NRC *Technical Position on Waste Form.* Resistance to each of these types of degradation shall be established by showing that the mean compressive strength of representative samples shall be equal to or greater than 3.45E06 Pa and not less than 75 percent of the initial compressive strength after subjecting the samples to the following:

2.2.2.19.1 Thermal degradation: 30 thermal cycles between a high of 60°C and a low of -40°C in accordance with the ASTM B553-79 or an equivalent testing method.

2.2.2.19.2 Radiation degradation: Exposure to a minimum radiation dose of 1.0E08 rad or to a dose equivalent to the maximum level of exposure expected from self-irradiation during storage, transportation and disposal if this is greater than 1.0E08 rad.

2.2.2.19.3 Biodegradation: No evidence of culture growth when representative samples are tested in accordance with ASTM G21-90, ASTM G22-76, or equivalent methods.

2.2.2.19.4 Immersion degradation: Immersion for 90 days under the ANSI/ANS-16.1 testing conditions.

2.2.2.20 Waste Form Leach Testing: The waste form shall have a sodium leachability index greater than 6.0 when tested for 90 days in deionized water using the ANSI/ANS-16.1 procedure.

2.2.2.21 Dangerous Waste Limitations: The ILAW product shall be acceptable for land disposal under the State of Washington *Dangerous Waste Regulations*, WAC 173-303 and 40 CFR 268. The Contractor shall perform sampling and testing necessary to support designation of the ILAW product for dangerous waste characteristics, dangerous waste criteria and dangerous waste sources as specified in WAC 173-303-070. Information needed to show that the treated waste in the ILAW product is not prohibited from land disposal pursuant to WAC 173-303-140 and 40 CFR 268 shall be provided by the Contractor. Also, information specified in WAC 173-303-072 to pursue an exemption or categorical exclusion from the dangerous waste requirements shall be provided by the Contractor in the *Products and Secondary Wastes Plan*. The sampling, preparation and testing methods shall conform to the requirements in WAC 173-303-110.

2.2.2.22 Compression Testing: Each fully loaded package shall be able to withstand a compression load of 50,000 kg force. Compliance with this specification shall be established by using the compression test described in 49 CFR 173.465(d). The Contractor shall demonstrate the integrity of the package by showing that the dimensions of the tested packages are within the tolerance range and by showing that the seal remains intact in accordance with Section 2.2.2.12.

2.2.2.23 Container Material Degradation: The container shall be resistant to degradation by microbial action, moisture, radiation effects, or chemical reactions with the container contents under the expected storage conditions that may reasonably occur during storage (in an ambient-temperature, ventilated enclosure) and handling and disposal operations. The container and handling appurtenances shall be designed to allow safe lifting and movement (in accordance with Section 2.2.3.1) after a storage period of 50 years. The integrity of the container shall not be jeopardized by wind, blowing sand, precipitation, sunlight, or extreme temperatures (+60°C, -40°C).

2.2.3 Handling Requirements:

2.2.3.1 Package Handling: The package shall be compatible with forklift and crane lifting and movement. The package shall be equipped with lifting and other handling appurtenances designed to allow safe lifting, movement, and stacking of the packages when fully loaded. The package shall maintain its integrity during handling, transportation, and stacking. The package shall allow for vertical stacking of six packages.

2.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance* and NUREG-1293. In addition to Section E requirements for ILAW, the Contractor shall conform to the Contractor Certification Program as described in DOE Order 5820.2A, Chapter 3, Section 3.E.(4).

Specification 3: Entrained Solids

3.1 Scope: This *Specification* defines the requirements for the *Entrained Solids* product, one of the intermediate waste products identified in Section C.4 of this *Statement of Work*. The separated Entrained Solids product may be mixed with the ^{90}Strontium and Transuranics (^{90}Sr/TRU) product if the Contractor does not provide High-Level Waste services under this Contract.

The Contractor is not required to produce an Entrained Solids product under this Contract. The Contractor shall determine the degree of Entrained Solids removal required to comply with the requirements of Specification 2, *Immobilized Low-Activity Waste*.

3.2 Requirements:

3.2.1 References: None

3.2.2 Product Requirements:

3.2.2.1 Limitation on ^{137}Cs Content: The total quantity of soluble ^{137}Cesium (^{137}Cs) returned to DOE in the Entrained Solids product and soluble plus insoluble ^{137}Cs in the ^{90}Sr/TRU product (*see* Specification 6, *^{90}Strontium and Transuranics*) shall be less than 5 percent of the total ^{137}Cs provided by DOE in the Low-Activity Waste (LAW) feed.

3.2.2.2 Limitation on ^{99}Tc Content: The total quantity of soluble ^{99}Technetium (^{99}Tc) returned to DOE in the Entrained Solids product and soluble plus insoluble ^{99}Tc in the ^{90}Sr/TRU product (*see* Specification 6, *^{90}Strontium and Transuranics*) shall be less than 5 percent of the total ^{99}Tc provided by DOE in the LAW feed.

3.2.2.3 Volume Limitation:

The entrained solids must meet one of the following criteria:

- Greater than 20 volume percent solids;
- Greater than 50% of the solids content at which the slurry viscosity is 30 cP; or
- Greater than 50% of the solids content at which the slurry specific gravity is 1.5.

The preceding criteria represent minimum constraints. Maximum constraints are defined in Specification 9, *Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask*.

3.2.2.4 Limitation on Additives: Entrained Solids shall be returned meeting the requirements of Specification 10, *Limitations on Returned Intermediate Waste Products Affecting Immobilized High-Level Waste Product Quantity.*

3.2.3 Handling Requirements: Entrained solids separated from the Low-Activity fraction shall be returned, meeting the requirements of Specification 9, *Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask.*

3.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance*.

Specification 4: ^{137}Cesium

4.1 Scope: This *Specification* defines the requirements for the *^{137}Cesium* (^{137}Cs) product, one of the intermediate waste products identified in Section C.4 of this *Statement of Work*. DOE will not accept the ^{137}Cs product if High-Level Waste treatment services are provided.

The Contractor shall determine the degree of ^{137}Cs removal required to comply with the requirements of Specification 2, *Immobilized Low-Activity Waste*.

4.2 Requirements:

4.2.1 References:

4.2.1.1 ASME. 1995. *Boiler and Pressure Vessel Code*. Section III, Division I, Subsection ND, American Society of Mechanical Engineers, New York, New York.

4.2.1.2 49 CFR 173.443(a). *Contamination Control*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

4.2.1.3 49 CFR 173.24. *General Requirements for Packagings and Packages*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

4.2.1.4 49 CFR 173.411. *General Design Requirements*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

4.2.1.5 49 CFR 173.412. *Additional Requirements for Type A Packages*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

4.2.1.6 49 CFR 173.465. *Type A Packaging Tests*. Code of Federal Regulations. U.S. Department of Transportation, Washington, D.C.

4.2.1.7 ANSI Standard N14.5. January 16, 1987. *American National Standard for Radioactive Materials - Leakage Tests on Packages for Shipment*. American National Standards Institute, New York, New York.

4.2.1.8 NRC Regulatory Guide 7.4. June 1975. *Leakage Tests on Packages for Shipment of Radioactive Material*. Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C.

4.2.2 Product Requirements: The Contractor shall provide the ^{137}Cs product as a dry, free flowing product in a container with a 50-year storage capability. The product shall not be combined with any other intermediate waste products: Entrained Solids, ^{99}Technetium, or ^{90}Strontium and Transuranics (TRU).

4.2.2.1 Segregation from Technetium: The product shall not contain more than 1 percent of the total technetium provided in Waste Envelopes A, B, and C.

4.2.2.2 Segregation from TRU: Transuranic materials removed with the ^{137}Cs do not require further separation from cesium in the product.

4.2.2.3 Free Liquids: Free liquids shall not be present within each container.

4.2.2.4 Gases: The product and package shall not contain or be capable of generating quantities of flammable or explosive gases during the 50-year storage period.

4.2.2.5 Free-flowing: The product shall be free-flowing; free-flowing is defined as the ability to flow out of an open container positioned at a 45 degree angle.

4.2.2.6 Criticality: The K_{eff} of the product shall not exceed 0.95 under any conditions, including any statistical uncertainties and bias in the calculational model and the presence of soluble poisons.

4.2.2.7 Pyrophoricity and Explosivity: The package contents shall not be pyrophoric, readily capable of detonation, or readily capable of explosive decomposition or reaction (including reaction with water) at normal pressure and temperature.

4.2.2.8 Stability: The product shall not have the potential for exothermic reaction.

4.2.2.9 Container Description: The container shall be a right circular cylinder that does not exceed the external dimensions of 33 cm in diameter and 137 cm in length. The container shall be fabricated from stainless steel with welded bottom and top closures and provide a handling pintle. The container may contain an inner package for the product.

4.2.2.10 Design Pressure: The container design pressure shall be determined in accordance with ASME *Boiler and Pressure Vessel Code* and shall not be exceeded during the 50-year storage period.

4.2.2.11 Packaging: The container shall comply with 49 CFR 173.24, 49 CFR 173.411, and 49 CFR 173.412 and pass the tests outlined in 49 CFR 173.465.

4.2.2.12 Labeling: Each container shall have a label attached or stamped on the outer surface in a readily accessible location. The label shall contain a unique identification number (e.g., a serial number), which shall be assigned to each package and the corresponding documentation. Labels and markings shall have a predicted service life of 50-years, assuming that the packages are stored in a ventilated enclosure at ambient temperatures.

4.2.2.13 Radiolytic Heat Generation: Any single, filled container shall not exceed 1.5 kW of radiolytic heat generation, and the calculational basis for radiolytic heat generation shall be provided for each container.

4.2.2.14 Container Integrity: All filled containers shall maintain container integrity during vertical or horizontal storage in a 70°C free convection environment.

4.2.2.15 Surface Contamination: Removable contamination on the external surface of each container shall not exceed 367 Bq/m^2 for alpha and 3670 Bq/m^2 for beta-gamma contamination as measured by the method described in 49 CFR 173.443(a).

4.2.2.16 Closure and Sealing: The fully loaded package shall be closed and sealed. The container closure system shall be leak tight as defined by *ANSI Standard N14.5* and *NRC Regulatory Guide 7.4*.

4.2.2.17 Dose Rate Limits: The maximum surface dose shall be less than 10^5 Rem/hr gamma and 10 Rem/hr neutron.

4.2.3.18 Limitation on Additives: The ^{137}Cs product shall be returned meeting the requirements of Specification 10, *Limitations on Returned Intermediate Waste Products Affecting Immobilized High-Level Waste Product Quantity*.

4.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance*.

Specification 5: ^{99}Technetium

5.1 Scope: This *Specification* defines the requirements for the *^{99}Technetium* (^{99}Tc) product, one of the intermediate waste products identified in Section C.4 of this *Statement of Work*. DOE will not accept the ^{99}Tc product if High-Level Waste treatment services are provided.

The Contractor is not required to produce a ^{99}Tc product under this Contract. The Contractor shall determine the degree of ^{99}Tc removal required to comply with the requirements of Specification 2, *Immobilized Low-Activity Waste*.

5.2 Requirements:

5.2.1 References: None

5.2.2 Product Requirements:

5.2.2.1 Product Segregation: The ^{99}Tc product shall not be combined with any other intermediate waste products: Entrained Solids, ^{137}Cesium, or ^{90}Strontium and Transuranics.

5.2.2.2 Radioactivity Limits: The product shall contain less than 1.5E-03 curies per liter of gamma emitting radionuclides with energies greater than 0.4 MeV in secular equilibrium.

5.2.2.3 Limitation on Additives: The ^{99}Tc product shall be returned meeting the requirements of Specification 10, *Limitations on Returned Intermediate Waste Products Affecting Immobilized High-level Waste Product Quantity*.

5.2.3 Handling Requirements: The product shall be returned as a solution or slurry that meets the requirements of Specification 9, *Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask*.

5.2.3.1 Product Transfer: The product shall be transferred at the end of all waste treatment services.

5.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Wastes Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance*.

Specification 6: ^{90}Strontium and Transuranics

6.1 Scope: This *Specification* defines the requirements for the *^{90}Strontium and Transuranics* (^{90}Sr/TRU) product, one of the intermediate waste products identified in Section C.4 of this *Statement of Work*. DOE will not accept the ^{90}Sr/TRU product if High-Level Waste services are provided under this Contract. The separated ^{90}Strontium and Transuranics (^{90}Sr/TRU) product may be mixed with the Entrained Solids product if the Contractor does not provide High-Level Waste services under this Contract.

The Contractor is not required to produce a ^{90}Sr/TRU product under this Contract. The Contractor shall determine the degree of ^{90}Sr/TRU removal required to comply with the requirements of Specification 2, *Immobilized Low-Activity Waste*.

6.2 Requirements

6.2.1 References: None

6.2.2 Product Requirements:

6.2.2.1 Limitation on ^{137}Cs Content: The total quantity of soluble plus insoluble ^{137}Cesium (^{137}Cs) returned to DOE in the ^{90}Sr/TRU product and soluble ^{137}Cs in the Entrained Solids product (*see* Specification 3, *Entrained Solids*) shall be less than 5 percent of the total ^{137}Cs provided by DOE in the Low-Activity Waste (LAW) feed.

6.2.2.2 Limitation on ^{99}Tc Content: The total quantity of soluble plus insoluble ^{99}Technetium (^{99}Tc) returned to DOE in the ^{90}Sr/TRU product and soluble ^{99}Tc in the Entrained Solids product (*see* Specification 3, *Entrained Solids*) shall be less than 5 percent of the total ^{99}Tc provided by DOE in the LAW feed.

6.2.2.3 Volume Limitation:

The ^{90}Sr/TRU must meet one of the following criteria:

- Greater than 20 volume percent solids;
- Greater than 50% of the solids content at which the slurry viscosity is 30 cP; or
- Greater than 50% of the solids content at which the slurry specific gravity is 1.5.

The preceding criteria represent minimum constraints. Maximum constraints are defined in Specification 9, *Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask*.

6.2.2.4 Limitation on Additives: The ^{90}Sr/TRU shall be returned meeting the requirements of Specification 10, *Limitations on Returned Intermediate Waste Products Affecting Immobilized High-Level Waste Product Quantity*.

6.2.3 Handling Requirements: ^{90}Sr/TRU separated from the LAW fraction shall be returned, meeting the requirements of Specification 9, *Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask.*

6.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance.*

Specification 7: Low-Activity Waste Envelopes Definition

7.1 Scope: This *Specification* establishes three waste envelopes for Low-Activity Waste (LAW) services: Waste Envelopes A, B, and C. Each waste envelope provides the compositional range of chemical and radioactive constituents in the waste feed to be treated.

7.2 Composition: This specification lists the concentration limits for the LAW Envelopes A, B, and C feed to be transferred by DOE to the Contractor for LAW services. The waste feed will be delivered with a sodium concentration between 3M and 14M. The insoluble solids fraction will not exceed 5 volume % of the waste transferred as Waste Envelopes A, B, and C. Trace quantities of radionuclides, chemicals, and other impurities may be present in the waste feed. All feed provided will meet the Tank Farm Operations specifications given in OSD-T-151-00007.

Table TS–7.1 LAW Chemical Composition

Chemical Analyte	Maximum Ratio, analyte (mole) to sodium (mole)		
	Envelope A	Envelope B	Envelope C
Al	1.9E-01	1.9E-01	1.9E-01
Ba	1.0E-04	1.0E-04	1.0E-04
Ca	4.0E-02	4.0E-02	4.0E-02
Cd	4.0E-03	4.0E-03	4.0E-03
Cl	3.7E-02	8.9E-02	3.7E-02
Cr	6.9E-03	2.0E-02	6.9E-03
F	9.1E-02	2.0E-01	9.1E-02
Fe	1.0E-02	1.0E-02	1.0E-02
Hg	1.4E-05	1.4E-05	1.4E-05
K	1.8E-01	1.8E-01	1.8E-01
La	8.3E-05	8.3E-05	8.3E-05
Ni	3.0E-03	3.0E-03	3.0E-03
NO_2	3.8E-01	3.8E-01	3.8E-01
NO_3	8.0E-01	8.0E-01	8.0E-01

Table TS–7.1 LAW Chemical Composition (Continued)

Chemical Analyte	Maximum Ratio, analyte (mole) to sodium (mole)		
	Envelope A	Envelope B	Envelope C
OH	7.0E-01	7.0E-01	7.0E-01
Pb	6.8E-04	6.8E-04	6.8E-04
PO_4	3.8E-02	1.3E-01	3.8E-02
SO_4	9.7E-03	7.0E-02	2.0E-02
TIC	3.0E-01	3.0E-01	3.0E-01
TOC[1]	6.0E-02	6.0E-02	5.0E-01
U	1.2E-03	1.2E-03	1.2E-03

Note:

[1] For each atom of Carbon in TOC.

Table TS–7.2 LAW Radionuclide Content

Radionuclide[1]	Maximum Ratio, radionuclide (Bq) to sodium (mole)		
	Envelope A	Envelope B	Envelope C
TRU	4.8E+05	4.8E+05	3.0E+06
^{137}Cs	4.3E+09	6.0E+10	4.3E+09
^{90}Sr	4.4E+07	4.4E+07	8.0E+08
^{99}Tc	7.1E+06	7.1E+06	7.1E+06

Notes:

[1] Some radionuclides, such as ^{90}Sr and ^{137}Cs, have daughters with relatively short half-lives. These daughters have not been listed in this table. However, they are present in concentrations associated with the normal decay chains of the radionuclides.

Specification 8: High-Level Waste Envelope Definition

8.1 Scope: This *Specification* establishes one waste envelope, Waste Envelope D, for High-Level Waste (HLW) services. This waste envelope provides the compositional range of chemical and radioactive constituents in the waste feed to be treated.

8.2 Composition: The composition range for selected feed components, minimum and maximum, is defined in Tables TS–8.1 and TS–8.2. Maximum feed composition for radionuclides are defined in Table TS–8.3. Compositions are defined in terms of elemental or anion concentrations based on an overall waste concentration of 31 grams (g) equivalent non-volatile oxides/liter (l). Actual feed concentration of equivalent non-volatile oxides may range from 25 g/l to 100 g/l. Decay products, such as radon from uranium and trace isotopes below 1.0E-09 Curies per liter (Ci/l) are not shown. Non-volatile trace components below 0.001 g/l are not shown. Table TS–8.4 defines the range for selected physical properties of HLW feed delivered to the HLW Contractor. The bulk of the HLW feed components are in the form of insoluble suspended solids in an aqueous slurry. Feed will be delivered to the Contractor providing HLW treatment services by pipeline in batches. Limits apply to individual batches. Some elements, components, and isotopes are determined by calculation and not analytic measurement.

Table TS–8.1 High-Level Waste Feed Composition Limits for Non-Volatile Components

Non-Volatile Element	g/l		Non-Volatile Element	g/l	
	Minimum	Maximum		Minimum	Maximum
Ag	NE	0.17	Cu	NE	0.15
Al	1.3	4.3	Dy	NE	0.008
Am	NE	0.02	Eu	NE	0.005
As	NE	0.05	F	NE	1.1
B	NE	0.4	Fe	2.6	8.9
Ba	NE	1.4	Gd	NE	0.003
Be	NE	0.02	Hg	NE	0.03
Bi	NE	0.86	K	NE	0.41
Ca	NE	2.2	La	NE	0.8
Cd	NE	1.4	Li	NE	0.043
Ce	NE	0.25	Mg	NE	0.65
Co	NE	0.14	Mn	NE	2
Cr	NE	0.21	Mo	NE	0.2
Cs	NE	0.18	Na	2.3	6.0

Table TS–8.1 High-Level Waste Feed Composition Limits for Non-Volatile Components (Continued)

Non-Volatile Element	g/l		Non-Volatile Element	g/l	
	Minimum	Maximum		Minimum	Maximum
Nb	NE	0.003	Si	NE	5.8
Nd	NE	0.53	Sm	NE	0.053
Ni	0.05	0.73	Sn	NE	0.011
Np	NE	0.03	Sr	NE	0.16
P	NE	0.54	Ta	NE	0.008
Pb	NE	0.34	Tc	NE	0.08
Pd	NE	0.04	Te	NE	0.04
Pm	NE	0.03	Th	NE	0.16
Pr	NE	0.11	Ti	NE	0.4
Pu	NE	0.016	Tl	NE	0.14
Rb	NE	0.06	U	NE	4.2
Re	NE	0.03	V	NE	0.01
Rh	NE	0.04	W	NE	0.074
Ru	NE	0.11	Y	NE	0.05
S	NE	0.20	Zn	NE	0.13
Sb	NE	0.26	Zr	NE	4.6
Se	NE	0.16			

Legend:

NE = Not estimated

Table TS–8.2 High-Level Waste Feed Composition Limits for Volatile Components

Volatile Components	g/l	
	Minimum	Maximum
Cl	0	0.1
CO_3	0.74	9.3
NO_2^-	0	11.2 (total NO_2^-/NO_3^-) as NO_3^-
NO_3^-	0	
TOC	0	3.4
CN	0	0.5
NH_3	0	0.5

Table TS–8.3 Maximum Radionuclide Composition of High-Level Waste Feed

Isotope	Ci/l	Isotope	Ci/l	Isotope	Ci/l
^{3}H	2E-05	^{115m}Cd	6.55E-10	^{152}Eu	1.5E-04
^{14}C	2E-06	^{119m}Sn	1.0E-08	^{154}Eu	1.6E-02
^{55}Fe	1.0E-03	^{121m}Sn	9.0E-06	^{155}Eu	9.0E-03
^{59}Ni	1.4E-05	^{126}Sn	4.8E-05	^{234}U	7.7E-07
^{60}Co	3.0E-03	^{124}Sb	2.61E-09	^{235}U	3.2E-08
^{63}Ni	1.6E-03	^{126}Sb	4.83E-06	^{236}U	8.2E-08
^{79}Se	4.2E-07	^{126m}Sb	3.43E-05	^{238}U	5.8E-07
^{90}Sr	3.1E+00	^{125}Sb	1.0E-02	^{237}Np	2.3E-05
^{90}Y	3.1E+00	^{125m}Te	3.0E-03	^{238}Pu	1.1E-04
^{93m}Nb	8.7E-05	^{129}I	9.0E-08	^{239}Pu	9.5E-04
^{93}Zr	1.4E-04	^{134}Cs	6.8E-03	^{240}Pu	2.6E-04
^{99}Tc	4.5E-03	^{135}Cs	3.0E-05	^{241}Pu	6.9E-03
^{106}Ru	2.0E-04	^{137}Cs	3.0E+00	^{242}Pu	7.1E-08
^{106}Rh	2.0E-04	^{137m}Ba	3.0E+00	^{241}Am	4.3E-02
^{107}Pd	4.0E-06	^{144}Ce	1.0E-04	^{242}Am	3.1E-05
^{110m}Ag	1.0E-08	^{144}Pr	1.0E-04	^{242m}Am	3.2E-05
^{113m}Cd	1.09E-03	^{144m}Pr	1.0E-07	^{243}Am	5.0E-06
^{113m}In	1.88E-06	^{147}Pm	1.6E-01	^{242}Cm	3.7E-05
^{113}Sn	1.88E-06	^{151}Sm	9.3E-02	^{244}Cm	9.3E-04

Table TS–8.4 High-Level Waste Feed Physical Properties

Property	Design Range
Total solids (wt %) dried at approximately 100°C	2.5-13
Total equivalent non-volatile oxides (g/l)	25-100
Slurry density (g/ml)	1.02-1.10
Settled solids (vol %)	7-95
Apparent viscosity (cP at 25°C)	
at 10 s^{-1} (50 rpm agitator)	6-94
at 25 s^{-1} (130 rpm agitator)	3-50
at 183 s^{-1}	1-50
Yield stress, (dyne/cm^2)	1-150
Settled solids shear strength after 2 days (dyne/cm^2)	20-200
Heat capacity (cal/g-°C)	0.79-0.97
pH	>10

Specification 9: Liquids or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask

9.1 Scope: This *Specification* defines the requirements for the return of liquids and slurries for three intermediate waste products: Entrained Solids, ^{99}Technetium (^{99}Tc), and ^{90}Strontium and Transuranics (^{90}Sr/TRU). DOE will not accept the ^{99}Tc and ^{90}Sr/TRU intermediate waste products if High-Level Waste Services are provided under this Contract.

9.2 Requirements:

9.2.1 References:

9.2.1.1 ASTM G75-95. January 30, 1995. *Standard Test Method for Determination of Slurry Abrasivity (Miller Number) and Slurry Abrasion Response of Materials (SAR Number)*. American Society for Testing and Materials, Easton Maryland.

9.2.1.2 Greenburg, A.E., L.S. Clesceri, and A.D. Eaton, eds. *Standard Methods for the Examination of Water and Wastewater*. 18th edition, McGraw-Hill, New York.

9.2.1.3 OSD-T-151-00007. Rev. H-16. November 20, 1995. *Operating Specification for 241-AN, AP, AW, AY, AZ, and SY Tank Farms*. Westinghouse Hanford Company, Richland, Washington.

9.2.1.4 WHC-SD-WM-OCD-015. Rev. 1. April 24, 1995. Fowler, K.D *Tank Farm Waste Transfer Compatibility Program*. Westinghouse Hanford Company, Richland, Washington.

9.2.2 Product Requirements:

9.2.2.1 Product Composition: The elemental composition of the product shall be provided for all elements constituting more than 0.5 wt% (percent by weight) of the product on a dry basis and for all radionuclides present in concentrations greater than 5% of the total activity.

9.2.2.2 Composition Limits: The composition of the product shall be within the composition limits specified in OSD-T-151-00007 (assumed at a storage temperature of 100°C) and comply with WHC-SD-WM-OCD-015.

9.2.2.3 Criticality: The plutonium concentration in the returned material shall not be greater than 0.05 grams per gallon. No single transfer shall be in excess of 200 grams plutonium. The concentration of the fissile materials shall be provided to DOE prior to transfer.

9.2.2.4 Storage: The Contractor shall demonstrate, in its *Products and Secondary*

Wastes Plan, that a separable organic phase will not develop during prolonged storage of the product materials in the Double-Shell Tank system.

9.2.2.5 Heat Generation: The Contractor shall determine and report the heat generation rate for product in the *Products and Secondary Wastes Plan*.

9.2.2.6 Physical Parameters: The Contractor shall determine and report the specific gravity, viscosity, solids content, pH, and temperature of the product at the time of transfer to DOE in the *Products and Secondary Wastes Plan*. Procedure 2450F, *Settleable Solids*, from *Standard Methods for the Examination of Water and Wastewater* (*see* Section J, Attachment 1, *List of Request for Proposals References*), shall be used to determine the volume of solids in the liquid or slurry. The product shall meet the requirements shown in Table TS–9.1.

Table TS–9.1 Physical Requirements for Liquids or Slurries Transferred to DOE

Specific Gravity[1]	1.0 to 1.5
Viscosity[1]	1.0 to 30.0 cP
Solids Content[1,2]	<30% (volume of bed)
pH Range	>11.0
Operating Temperature (Waste)	26.6°C to 82.2°C
Minimum Pipeline Velocity	1.8 m/sec
Reynolds Number	>20,000
Particles size greater than 4000 µm	0% w/w
Particles size between 500 and 4000 µm	<1% w/w
Particles size between 50 and 500 µm	<5% w/w
Miller number of slurry at transfer temperature and concentration (ASTM G75-95)	<100

Notes:

[1] Measured at minimum planned transfer temperature. Maximum temperature drop during transfer is 11°C.
[2] Value reported is the percent of slurry volume represented by the settled bed of solids.

9.2.2.7 Scaling: Transport of the product shall not deposit scale on the pipe walls.

9.2.2.8 Stability Prevention of Exothermic Reaction: The Entrained Solids, ^{99}Tc, and ^{90}Sr/TRU products shall not have the potential for an exothermic reaction.

9.2.3 Handling Requirements: None

9.3 Inspection and Acceptance: The *Products and Secondary Wastes Plan* provided as a Part A deliverable in Standard 3, *Waste Products and Secondary Wastes*, shall define the content and delivery of Contractor documentation required to demonstrate compliance with the requirements of this specification. Product inspection and acceptance requirements will be performed in accordance with Section E, *Inspection and Acceptance.*

Specification 10: Limitations on Returned Intermediate Waste Products Affecting Immobilized High-Level Waste Product Quantity

10.1 Scope: This *Specification* establishes limitations on the impact to *Immobilized High-Level Waste* (IHLW) product quantity.

10.2 Requirements:

10.2.1 References:

10.2.1.1 WAC 173-303. 1995. *Dangerous Waste Regulations*, Washington Administrative Code, as amended.

10.2.2 Product Requirements:

10.2.2.1 High-Level Waste Volume Impact: The Contractor shall: 1) demonstrate that the calculated IHLW product quantity will not be affected by processing Low-Activity Waste (LAW) feed (*see* Specification 7, *Low-Activity Waste Envelopes Definition*); or 2) comply with the following two limitations for every metric ton of sodium in the LAW feed:

Limitation 1: Add and/or precipitate less than 10 kilograms of material in total to the intermediate waste products (on an equivalent oxide basis excluding silicon and sodium), including: Entrained Solids, ^{137}Cesium (^{137}Cs), ^{90}Strontium, (^{90}Sr) and Transuranics (TRU), and ^{99}Technetium, (^{99}Tc) (*see* Specification 3, *Entrained Solids*, Specification 4, *^{137}Cesium*, Specification 5, *^{99}Technetium*, and Specification 6, *^{90}Strontium and Transuranics*).

Limitation 2: Add less than 100 grams of sulfur, phosphorous, fluorine, chlorine, and chromium in total to the intermediate waste products (on an equivalent oxide basis if applicable), including: Entrained Solids, ^{137}Cs, ^{90}Sr and TRU, and ^{99}Tc (*see* Specification 3, *Entrained Solids*, Specification 4, *^{137}Cesium*, Specification 5, *^{99}Technetium*, and Specification 6, *^{90}Strontium and Transuranics*).

10.2.2.2 Material Additions: The following materials may not be added to the product without advance approval by DOE: radionuclides; organics; noble metals, iodine; materials that are designated in WAC 173-303 as dangerous waste; and materials excluded by regulatory requirements and permits at the Hanford site.

10.2.2.3 Sodium Return in Intermediate Waste Products: For the ^{137}Cs and ^{99}Tc intermediate waste products, the Contractor shall return less than 10 kilograms of sodium per metric ton of sodium in LAW feed (*see* Specification 7, *Low-Activity Waste Envelopes Definition*).

For the Entrained Solids and ^{90}Sr and TRU intermediate waste products, the Contractor shall return less than 60 grams of sodium per kilogram of insoluble solids, measured on a dry solids basis.

C.7 Interface Descriptions

This Section consists of one Interface Description for each of the interfaces identified in Figure C–1, *Privatization Functions, Inputs, and Outputs*, as listed below. Each Interface Description consists of three parts:

a. A definition of the interfaced item;
b. The responsibilities of the Contractor and the U.S. Department of Energy (DOE) or its other Hanford Site contractors; and
c. Interface details to be established during Part A.

Interface Descriptions (ID):

ID 1: Raw Water
ID 2: Potable Water
ID 3: Radioactive Solid Wastes
ID 4: Dangerous Wastes
ID 5: Non-Radioactive, Non-Dangerous Liquid Effluents
ID 6: Radioactive, Dangerous Liquid Effluents
ID 7: Non-Dangerous Solid Wastes
ID 8: Liquid Sanitary Wastes
ID 9: Land for Siting
ID 10: Deactivated Facility and Site
ID 11: Electricity
ID 12: Roads and Rails
ID 13: Non-Routine High-Level Solid Wastes
ID 14: Immobilized High-Level Waste
ID 15: Immobilized Low-Activity Waste
ID 16: ^{90}Strontium/Transuranics/Entrained Solids
ID 17: ^{137}Cesium
ID 18: ^{99}Technetium
ID 19: Low-Activity Waste Feed
ID 20: High-Level Waste Feed
ID 21: Waste Feed Tanks
ID 22: Air Emissions

The DOE member of the Interface Integrated Product/Process Team (IPT) will consider requests for additional Hanford Site services. However, DOE is not required to provide any Hanford Site services beyond the Interface Descriptions described in Section C.7.

Interface Description 1: Raw Water

Interface Definition:

Raw Water – The 200 East Raw Water System provides raw make-up water for process use and fire water for the 200 East Area. The Hanford Site raw water supply is unfiltered, untreated Columbia River water subject to seasonal changes in temperature and composition.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Specify to DOE the amount of raw water required (average and peak flows) for its process and for fire suppression. 2) Connect its facility to the line(s) provided for raw water and fire water at the Contractor's site perimeter. 3) Maintain the portion of those lines that are within the Contractor's own site boundaries.	DOE or its other Hanford Site contractors will . . . 1) Provide up to 760 liters per minute (lpm) (24-hour average) of process water to the Contractor. 2) Provide and maintain a pipeline for process water to the Contractor's site perimeter. 3) Provide up to a total of 9,450 lpm of fire water to be shared among the Contractors. 4) Provide and maintain a pipeline for fire water to each Contractor's site perimeter. 5) Monitor raw water usage. 6) Function as the Site Water Purveyor. 7) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Request for raw water services in excess of 760 lpm (24-hour average).
2) Request for fire water services in excess of 9,450 lpm.
3) Physical interface locations.
4) Time frame for delivery of the raw water.
5) Water-use minimization incentives.
6) Final Interface Control Document.

Interface Description 2: Potable Water

Interface Definition:

Potable Water – The 200 East Sanitary Water System provides potable water for domestic use.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Specify to DOE the amount of potable water required (average and peak flows) for its facility. 2) Connect its facility to the line provided for potable water at the Contractor's site perimeter. 3) Maintain the portion of those lines that are within the Contractor's own site boundaries.	DOE or its other Hanford Site contractors will . . . 1) Provide up to 95 lpm (24-hour average) of potable water to the Contractor. 2) Provide and maintain a pipeline for potable water to the Contractor's site perimeter. 3) Monitor potable water usage. 4) Function as the Site Water Purveyor. 5) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Request for potable water services in excess of 95 lpm (24-hour average).
2) Physical interface locations.
3) Time frame for delivery of potable water.
4) Water-use minimization incentives.
5) Final Interface Control Document.

Interface Description 3: Radioactive Solid Wastes

Interface Definition:

Radioactive Solid Wastes – Low-level, low-level mixed, transuranic (TRU), and TRU mixed solid wastes generated by the Contractor. These wastes will be transferred to DOE for management and disposal.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . .	DOE or its other Hanford Site contractors will . . .
1) Estimate the volume of radioactive solid wastes to be generated during this Contract and provide these forecasts to DOE. 2) Submit to DOE all technical information and analyses required to modify or comply with any affected Hanford Site permits necessary to dispose of the waste. 3) Comply with the *Hanford Site Solid Waste Acceptance Criteria* (HSSWAC), WHC-EP-0063. 4) Package the radioactive solid wastes in accordance with the HSSWAC. 5) Document that packaged radioactive solid wastes meet the HSSWAC. 6) Transfer the certified radioactive solid wastes to DOE for transportation.	1) Review the HSSWAC *Waste Certification Summary* and accept certified radioactive solid wastes from the Contractor. 2) Negotiate any necessary modification to Hanford Site permits with the regulator(s). 3) Establish and maintain the HSSWAC. 4) Implement the Waste Verification and Confirmation Program, as defined in the HSSWAC. 5) Provide transportation services and vehicles for transporting radioactive solid wastes to the disposal facility. 6) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Physical interface locations.
2) Schedule, documentation, and procedures for waste transfer.
3) Radioactive solid waste minimization incentives.
4) Final Interface Control Document.

Interface Description 4: Dangerous Wastes

Interface Definition:

Dangerous Wastes – Non-radioactive, dangerous wastes that are sent to an external RCRA-permitted treatment, storage, and disposal facility as Contractor-owned and generated wastes.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Manage and disposition all non-radioactive, dangerous waste streams. 2) Not commingle different waste types.	DOE or its other Hanford Site contractors will . . . 1) Not accept non-radioactive, dangerous waste from the Contractor.

To Be Established During Part A:

Not applicable.

Interface Description 5: Non-Radioactive, Non-Dangerous Liquid Effluents

Interface Definition:

Non-Radioactive, Non-Dangerous Liquid Effluents – Uncontaminated waste water which meets interface acceptance criteria for discharge directly to the 200 Area Treated Effluent Disposal Facility (TEDF).

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Establish the operating range for total volume and maximum weight percent solids of the transferred liquid effluents. 2) Submit to DOE all technical information and analyses required for modifications to or compliance with any affected permits necessary to transfer liquid effluents to the 200 Area TEDF. 3) Connect its facility to the line provided for the liquid effluent at the Contractor's site perimeter. 4) Meet the requirements of the *200 Area Treated Effluent Disposal Facility Interface Control Document*, WHC-SD-W049H-ICD-001, and the *State Waste Discharge Permit*, ST 4502. 5) Not commingle different waste types.	DOE or its other Hanford Site contractors will . . . 1) Accept from each Contractor up to 300,000 m^3/yr. corresponding to an average flow rate of 570 lpm. 2) Provide and maintain a transfer pipeline from the Contractor's site boundary to the 200 Area TEDF. 3) Negotiate with regulator(s) any necessary permit changes associated with the new waste stream. 4) Verify the volume and composition of liquid effluents discharged by the Contractor. 5) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Physical interface locations and administrative interfaces.
2) Time frame for commencement of liquid effluent services.
3) Maximum instantaneous discharge rate.
4) Liquid effluent minimization incentives.
5) Final Interface Control Document.

Interface Description 6: Radioactive, Dangerous Liquid Effluents

Interface Definition:

Radioactive, Dangerous Liquid Effluents – Dilute radioactive and/or dangerous process waste liquid effluents which require treatment to meet interface acceptance criteria for discharge to the Liquid Effluent Retention Facility (LERF) and/or to the Effluent Treatment Facility (ETF) for subsequent treatment.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Establish the operating range for total volume, total curies, composition, and maximum weight percent solids of the radioactive, dangerous liquid effluents to be transferred. 2) Submit to DOE all technical information and analyses required to modify or comply with any affected permits to transfer radioactive, dangerous liquid effluents to the LERF and/or ETF. 3) Connect its facility to the line provided for the liquid effluent at the Contractor's site perimeter. 4) Document the volume and composition of discharged liquid effluents. Meet the ETF *Acceptance of Feed Streams for Treatment at the LERF/ETF Complex*, as specified in WHC-SD-ETF-WAC-001. 5) Pretreat liquid effluents as negotiated with DOE. 6) Discharge liquid effluents within the current ETF treatability envelope. 7) Not commingle different waste types.	DOE or its other Hanford Site contractors will . . . 1) Specify ETF treatability envelope. 2) Accept from the Contractor and treat up to 100,000 m^3/yr of radioactive, dangerous liquid effluents corresponding to an average flow rate of 190 lpm. 3) Provide and maintain an RCRA-compliant transfer pipeline between the Contractor's site boundary and the ETF. 4) Compare the predicted effluent characteristics to the ETF's treatability envelope and determine whether treatability tests or ETF process modifications are necessary. 5) Verify the volume and composition of liquid effluents discharged by the Contractor. 6) Dispose of secondary solid wastes resulting from waste water treatment at the ETF. 7) Negotiate with regulator(s) any necessary permit changes associated with the new waste stream. 8) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Physical interface locations and administrative interfaces.
2) Any Contractor pretreatment or ETF process changes necessary to maintain ETF discharge concentrations below maximum permissible limits.
3) Time frame for commencement of liquid effluent treatment services.
4) Maximum instantaneous discharge rate with DOE.
5) Liquid effluent waste minimization incentives.
6) Final Interface Control Document.

Interface Description 7: Non-Dangerous Solid Wastes

Interface Definition:

Non-Dangerous Solid Wastes – Non-radioactive, non-dangerous wastes that are sent to an external treatment, storage, and disposal facility as Contractor-owned and generated wastes.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Manage and disposition all non-radioactive, non-dangerous solid wastes.	DOE or its other Hanford Site contractors will . . . 1) Not accept non-radioactive, non-dangerous solid wastes.

To Be Established During Part A:

Not applicable.

Interface Description 8: Liquid Sanitary Wastes

Interface Definition:

Liquid Sanitary Wastes – Contractor-owned and generated sanitary sewer discharges.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Design, permit, install, operate, and deactivate a sanitary waste treatment system for its needs.	DOE or its other Hanford Site contractors will . . . 1) Not accept liquid sanitary wastes.

To Be Established During Part A:

1) Any additional land required to install the sanitary sewer system.

Interface Description 9: Land for Siting

Interface Definition:

Land for Siting – The appropriate land required in the 200 East Area for waste treatment services. Land for facility siting will be provided to the Contractor under a no-cost lease that authorizes the Contractor to use the property for construction, operation, and deactivation.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Perform Part A in such a manner that allows DOE the flexibility to assign any contiguous 6-hectare site during Part B. 2) Construct, operate, and deactivate its facility within the site boundaries.	DOE or its other Hanford Site contractors will . . . 1) During Part A, provide the Contractor site-investigation access to the region shown in Section J, Attachment 3, *Siting Plan/Aerial View of Proposed Contractor Locations*. 2) At the start of Part B, select and lease a 6-hectare site within the region shown in Section J, Attachment 3. 3) Establish baseline site and environmental conditions through a third party. 4) Ensure that site-use satisfies requirements through the environmental checklist process at the initiation of Part B. 5) Provide Site Evaluation Reports. 6) Provide land corridors and required siting information for tank waste transfer lines.

To Be Established During Part A:

1) Baseline site and environmental conditions prior to use.
2) Additional land if the 6-hectare site is not sufficient.
3) Final Interface Control Document.

Interface Description 10: Deactivated Facility and Site

Interface Definition:

Deactivated Facility – Facilities that have been deactivated and are ready for transfer to DOE for surveillance and maintenance, decontamination/decommissioning, and RCRA closure. Facilities to be deactivated include the site (land), Contractor improvements to the site/land corridors or other Government-furnished property and equipment, transfer pipelines, diversion boxes, and associated components, nuclear processing facilities, and support buildings, but excludes the original DOE-provided waste feed tanks and their associated upgrades.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Deactivate facilities. 2) Establish baseline deactivation conditions through a third party. 3) Transfer deactivated facility(ies) and site to DOE. 4) Provide documentation required by the approved *Deactivation Plan.*	DOE or its other Hanford Site contractors will . . . 1) Authorize facility deactivation.

To Be Established in Part A:

1) Process and protocols for turning over the facilities and site to DOE.
2) Specific elements of the *Deactivation Plan,* including the deactivation end-points for the deactivated facility(ies) and specific end-points for all systems and spaces.
3) Final Interface Control Document.

Interface Description 11: Electricity

Interface Definition:

Electricity – 20 Megawatts (MW) power at 13.8 kilovolts (kV), 60 hertz (Hz), three-phase alternating current (AC), will be available to the Contractor's site electrical distribution system.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Specify to DOE the amount of AC power (average and peak loads) required for its process.	DOE or its other Hanford Site contractors will . . . 1) Deliver up to 20 MW of power at the defined capacity. 2) Deliver power to the Contractor's site perimeter. 3) Monitor power consumption. 4) Provide and maintain electrical distribution at the defined capacity to the Contractor's site perimeter. 5) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Request for power services in excess of 20 MW.
2) Schedule of electrical outages for maintenance.
3) Physical interface locations.
4) Time frame for delivery of power.
5) Power-use minimization incentives.
6) Final Interface Control Document.

Interface Description 12: Roads and Rails

Interface Definition:

Roads and Railways – The primary roads and DOE rail system provide access to the 200 Area. No direct rail link to the Contractor's site will be provided, and DOE rail system may be discontinued during the Contract term.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Provide roads within its own site boundaries. 2) Notify DOE, in advance, of road closures the Contractor requires outside its boundary. 3) Identify demand on existing Hanford Site roads and rail system.	DOE or its other Hanford Site contractors will . . . 1) Provide road access between the Contractor's site boundary and existing Hanford Site roads. 2) Maintain the existing roads and rail system spurs in the vicinity of the Contractor's facility. 3) Manage road closures outside the Contractor's site boundary as necessary. 4) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Requests for upgrades of existing roads and rail system.
2) Protocols and procedures for road closures.
3) Physical interface locations.
4) Final Interface Control Document.

Interface Description 13: Non-Routine High-Level Solid Wastes

Interface Definition:

Non-Routine High-Level Solid Wastes – Processing of tank wastes may generate secondary radioactive solid waste that meets the Nuclear Regulatory Commission's source-based definition of High-Level Waste or incidental waste. DOE anticipates that small quantities of such waste may be produced on a non-routine basis during Part B operations, particularly during facility deactivation.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Estimate the volume of non-routine High-Level solid waste to be generated by the Contractor. 2) Minimize the quantity of non-routine High-Level solid waste produced during Contract operations through segregation and decontamination. 3) Submit to DOE all technical information and analyses required for modifications to, or compliance with, affected Hanford Site permits necessary to store waste. 4) Comply with waste package requirements for the HLW product. 5) Load the non-routine High-Level solid waste package in an approved shipping container provided by DOE. 6) Document that the non-routine High-Level solid waste meets, to the extent practical, the HLW acceptance criteria in the *Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms* (WAPS), DOE/EM-0093, and *Waste Acceptance System Requirements Document* (WASRD), DOE/RW-0351P. 7) Provide documentation of the non-routine High-Level solid waste in the Contractor's immobilized High-Level Waste product *Wasteform Qualification Report* required by the WAPS. 8) Transfer ownership of the non-routine High-Level solid waste to DOE for transportation along with shipping manifests and appropriate documentation.	DOE or its other Hanford Site contractors will . . . 1) Accept certified non-routine High-Level solid waste from the Contractor. 2) Negotiate any necessary modifications to Hanford Site permits with regulators. 3) Evaluate requirements for transfer, interim storage, and ultimate disposal of non-routine High-Level solid waste. 4) Pick up the loaded shipping container from the Contractor-designated transfer facility. 5) Provide transportation services and vehicles for the non-routine High-Level solid waste. 6) Verify the volume and composition of the non-routine High-Level solid waste. 7) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Physical interface location.
2) Schedule, documentation, and procedures for waste transfer.
3) Non-routine HLW minimization incentives.
4) Final Interface Control Document.

Interface Description 14: Immobilized High-Level Waste

Interface Definition:

Immobilized High-Level Waste – Immobilized High-Level Waste (IHLW) sealed in canisters suitable for interim storage and future placement in the geologic repository.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Provide a facility for physical transfer and acceptance of the canistered IHLW form. 2) Place the IHLW product in accordance with Specification 1, *Immobilized High-Level Waste*, in an approved shipping container provided by DOE. 3) Notify DOE that the loaded shipping container is ready for pickup and provide access for DOE's transportation equipment to accomplish the physical pickup. 4) Provide required documentation to DOE. 5) Provide lag storage with a minimum capacity to accommodate 60 days production.	DOE or its other Hanford Site contractors will . . . 1) Provide a clean, approved shipping container delivered to the Contractor-designated transfer facility. Shipping containers will be provided in accordance with the following: a) Smearable contamination on shipping container (internal and external): <367 Bq/m^2 alpha, and <3670 Bq/m^2 gamma/beta b) Radiation level (when loaded): <200 mRem/hr for shipping container outer surface <10 mRem/hr at a distance of two meters from the vertical surface of the shipping container 2) Accept the IHLW product. 3) Pickup the loaded shipping container from the Contractor-designated transfer facility. 4) Transport shipping containers: a) Empty - to the Contractor's loading facility b) Full - from the Contractor's loading facility 5) Provide the transport vehicle. 6) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Procedures for product acceptance and sampling.
2) Schedule for empty shipping container delivery and loaded shipping container pickup.
3) Design for handling and shipping fixtures/appurtenances compatible with lifting and movement equipment, IHLW packaging, and shipping containers.
4) IHLW minimization incentives.
5) Final Interface Control Document.

Interface Description 15: Immobilized Low-Activity Waste

Interface Definition:

Immobilized Low-Activity Waste – Immobilized Low-Activity Waste (ILAW) product suitable for disposal on the Hanford Site.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Provide a facility for physical transfer and acceptance of the ILAW product. 2) Place the ILAW product in accordance with Specification 2, *Immobilized Low-Activity Waste*, in an approved shipping container provided by DOE. 3) Notify DOE that the loaded shipping container is ready for pickup and provide access for DOE's transportation equipment to accomplish the physical pickup. 4) Provide required documentation to DOE. 5) Provide lag storage with a minimum capacity to accommodate 60 days production.	DOE or its other Hanford Site contractors will . . . 1) Provide a clean, approved shipping container delivered to the Contractor-designated transfer facility. Shipping containers will be provided in accordance with the following: a) Smearable contamination on shipping container (internal and external): <367 Bq/m^2 alpha, and <3670 Bq/m^2 gamma/beta b) Radiation level (when loaded): <200 mRem/hr for shipping container outer surface <10 mRem/hr at a distance of two meters from the vertical surface of the shipping container 2) Accept the ILAW product. 3) Pickup the loaded shipping container from the Contractor-designated transfer facility. 4) Transport shipping containers: a) Empty - to the Contractor's loading facility b) Full - from the Contractor's loading facility 5) Provide the transport vehicle. 6) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Procedures for product acceptance and sampling.
2) Schedule for empty shipping container delivery and loaded shipping container pickup.
3) Design for handling and shipping fixtures/appurtenances compatible with lifting and movement equipment, ILAW product packaging, and shipping containers.
4) ILAW product minimization incentives.
5) Final Interface Control Document.

Interface Description 16: ^{90}Strontium/Transuranics/Entrained Solids

Interface Definition:

^{90}Strontium/Transuranics/Entrained Solids – ^{90}Strontium (^{90}Sr), Transuranics (TRU), and Entrained Solids contained in LAW feed separated from tank waste that will be transferred to DOE via pipeline.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Transfer the Entrained Solids and ^{90}Sr/TRU separated from the waste feed envelopes consistent with Specifications 3 and 6, *Entrained Solids* and *^{90}Strontium and Transuranics*, respectively, to DOE by pipeline transfer. 2) Flush the transfer line. 3) Provide required documentation to DOE. 4) Provide lag storage with a minimum capacity to accommodate 60 days production. 5) Provide a transfer line from a point of connection with the DOE transfer system (adjacent to the AP Tank Farm) to the Contractor's facility.	DOE or its other Hanford Site contractors will . . . 1) Receive the ^{90}Sr/TRU, Entrained Solids, and transfer line flush water. 2) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Physical interface locations.
2) Schedule, documentation, and procedures for waste transfer.
3) Pipeline flushing requirements.
4) Product composition.
5) Product minimization incentives.
6) Final Interface Control Document.

Interface Description 17: ^{137}Cesium

Interface Definition:

^{137}Cesium – ^{137}Cesium (^{137}Cs) separated from tank waste envelopes that will be transferred to DOE as a solid in a container. This interface applies to the Contractor who is performing LAW treatment services only, during Part B.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Provide a facility for physical transfer and acceptance of the ^{137}Cs product. 2) Place the ^{137}Cs product in accordance with Specification 4, *^{137}Cesium*, in an approved shipping container provided by DOE. 3) Notify DOE that the loaded shipping container is ready for pickup and provide access for DOE's transportation equipment to accomplish the physical pickup. 4) Provide required documentation to DOE. 5) Provide lag storage with a minimum capacity to accommodate 60 days production.	DOE or its other Hanford Site contractors will . . . 1) Provide a clean, approved shipping container delivered to the Contractor-designated transfer facility. Shipping containers will be provided in accordance with the following: a) Smearable contamination on shipping container (internal and external): <367 Bq/m^2 alpha, and <3670 Bq/m^2 gamma/beta b) Radiation level (when loaded): <200 mRem/hr for shipping container outer surface <10 mRem/hr at a distance of two meters from the vertical surface of the shipping container 2) Accept the ^{137}Cs product. 3) Pickup the loaded shipping container from the Contractor-designated transfer facility. 4) Transport shipping containers: a) Empty - to the Contractor's loading facility b) Full - from the Contractor's loading facility 5) Provide the transport vehicle. 6) Notify the Contractor in advance of scheduled interruption of services.

To Be Established During Part A:

1) Procedures for product acceptance and sampling.
2) Schedule for empty shipping container delivery and loaded shipping container pickup.
3) Design for handling and shipping fixtures/appurtenances compatible with lifting and movement of equipment, ^{137}Cesium product packaging, and shipping containers.
4) Product minimization incentives.
5) Final Interface Control Document.

Interface Description 18: ^{99}Technetium

Interface Definition:

^{99}Technetium – ^{99}Technetium (^{99}Tc) separated from LAW feed tank waste that will be returned to DOE as a liquid/slurry that meets pipeline or cask transport criteria as defined in Specification 9, *Liquid or Slurries Transferred to DOE by Pipeline or Liquid Transport Cask.* This interface applies to the Contractor who is performing LAW treatment services only, during Part B.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Store the ^{99}Tc product until the completion of waste treatment services. 2) Transfer the ^{99}Tc product to DOE. 3) Generate less than 10 liters of ^{99}Tc product per metric ton of sodium in LAW feed.	DOE or its other Hanford Site contractors will . . . 1) Receive the ^{99}Tc product.

To Be Established During Part A:

1) Physical interface locations.
2) Schedule, documentation, and procedures for waste transfer.
3) Product composition.
4) Product minimization incentives.
5) Final Interface Control Document.

Interface Description 19: Low-Activity Waste Feed

Interface Definition:

Low-Activity Waste (LAW) Feed – Liquids and Entrained Solids as defined in Specification 7, *Low-Activity Waste Envelopes Definition,* transferred to the Contractor for treatment services.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Request LAW feed. 2) Prepare waste feed tank to receive LAW feed. 3) Receive water from the transfer pipeline flush following transfer of waste.	DOE or its other Hanford Site contractors will . . . 1) Select waste envelope and waste quantity consistent with Specification 7, *Low-Activity Waste Envelopes Definition.* 2) Provide tank waste feed composition prior to transfer to the Contractor's waste feed tank (AP-106 or AP-108) and provide the information to the Contractor. 3) Transfer waste feed to the Contractor in accordance with Clause H.9, *Ordering and Contract Order Quantities.* 4) Flush the transfer line. 5) Provide samples of the LAW feed to the Contractor for testing.

To Be Established During Part A:

1) Physical interface locations.
2) Schedule, documentation, and procedures for waste feed transfer.
3) Pipeline flushing requirements.
4) Methods and procedures to establish feed composition.
5) Final Interface Control Document.

Interface Description 20: High-Level Waste Feed

Interface Definition:

High-Level Waste (HLW) Feed – Pretreated HLW feed as defined in Specification 8, *High-Level Waste Envelope Definition*, transferred to the Contractor for treatment services.

Responsibilities:

CONTRACTOR	DOE
The Contractor performing Low-Activity and High-Level Waste (HLW) services shall . . . 1) Request HLW feed. 2) Provide a transfer line from a point of connection to the DOE transfer system (adjacent to AP Tank Farm) to the Contractor's facility. 3) Receive and store HLW feed from DOE for vitrification. 4) Receive water from the transfer pipeline flush following transfer of HLW.	DOE or its other Hanford Site contractors will . . . 1) Transfer the HLW feed consistent with Specification 8, *High-Level Waste Envelope Definition,* to the Contractor. 2) Provide the HLW feed composition and transmit the results to the Contractor. 3) Transfer the waste feed to the Contractor in accordance with Clause H.9, *Ordering and Contract Order Quantities.* 4) Flush the transfer line. 5) Provide samples of HLW feed to the Contractor for testing.

To Be Established During Part A:

1) Physical interface locations.
2) Schedule, documentation, and procedures for waste transfer.
3) Pipeline flushing requirements.
4) Methods and procedures to establish feed composition.
5) Final Interface Control Document.

Interface Description 21: Waste Feed Tanks

Interface Definition:

Waste Feed Tanks – Double-shell tanks AP-106 or AP-108 provided to the Contractor to stage Low-Activity Waste feed for treatment services.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . .	DOE or its other Hanford Site contractors will . . .
1) Review tank inspection results, agree to pre-existing conditions, and accept tank. 2) Provide and install any needed equipment, monitoring hardware, and control systems to operate and transfer waste. 3) Operate, monitor, and maintain the feed tank in accordance with OSD-T-151-00007, OSD-T-151-00017, OSD-T-151-00031, OSR-T-152-00001, WHC-SD-WM-EV-053, and WHC-SD-WM-OSR-016. 4) Provide all power and consumables required to operate all Contractor-owned instrumentation attached to the waste feed tank. 5) Provide and install ventilation and emissions monitoring systems and disconnect existing ventilation and monitoring systems in accordance with OSD-T-151-00017. 6) Provide capability for emergency transfer of tank contents back to DOE. 7) Perform turnover final inspection for return. 8) Return the waste feed tank to DOE with the effective RCRA permit. 9) Issue final history document (includes final as-built drawings). 10) Allow DOE access to Contractor-controlled site to perform repair and maintenance of DOE systems. 11) Install barriers to separate DOE's and Contractor's property. 12) Provide pipeline(s) from the waste feed tank to the Contractor's site. 13) Maintain and operate monitoring systems except for the secondary containment tank monitoring system. 14) Minimize mixing or blending of different waste envelopes.	1) Perform waste feed tank inspection prior to turnover. 2) Turn over the waste feed tank. 3) Provide necessary as-built design information on waste feed tank and auxiliary systems. 4) Monitor and maintain the secondary containment tank leak detection system (i.e., leak pit) and cathodic protection system. 5) Maintain the secondary containment tank leak detection system. 6) Provide capacity to receive emergency transfer of tank wastes. 7) Receive the waste feed tank from the Contractor. 8) Allow the Contractor access to DOE-controlled site to perform repairs and maintenance of Contractor systems.

To Be Established During Part A:

1) Emergency tank waste transfer procedure.
2) Tank turnover procedure to and from the Contractor including schedule and details for system by system turnover and tank condition.
3) Access protocol.
4) Waste feed tank transfer procedure including leak detection quantification, acceptance requirements, and pipeline flushes for receipt of tank wastes.
5) Waste feed tank modifications.
6) Documentation required to transfer operational responsibility of the waste feed tank.
7) Final Interface Control Document.

Interface Description 22: Air Emissions

Interface Definition:

Air Emissions – Treated gaseous wastes from the operation of waste treatment services that are discharged to the atmosphere as Contractor-owned and generated wastes.

Responsibilities:

CONTRACTOR	DOE
The Contractor shall . . . 1) Submit Notices of Construction to the State of Washington for both radioactive air emissions and non-radioactive air emissions.	Not applicable.

To Be Established During Part A:

1) Source allocation.
2) Required environmental monitoring.
3) Administrative interfaces.
4) Final Interface Control Document.

Section D Packaging and Marking

Packaging and marking of deliverable products called for under this Contract shall be in compliance with the applicable provisions and requirements of this Contract.

Section E Inspection and Acceptance

Part A — Deliverables for Part A are identified in Section C.4.1. Acceptance will occur when all the deliverables required for Part A are determined by the Contracting Officer (CO) to have been provided in accordance with the terms and conditions of this Contract.

Part B — Deliverables for Part B are identified in Section C.4.2. Acceptance will occur when deliverables are determined by the CO to have been provided in accordance with the terms and conditions of this Contract. Product resulting from waste treatment services provided in Part B will be accepted in the following manner:

Interim Acceptance

Product will be accepted on an interim basis when the Contractor has submitted the following required documentation: 1) objective evidence for the results of analysis, testing, inspection, and demonstration that are defined in Table S3–1, *Qualification and Verification*, Part B Verification Requirements, and required by the *Products and Secondary Wastes Plan* (*see* Standard 3, *Waste Products and Secondary Wastes*); and 2) certification that the product complies with Contract requirements.

Interim acceptance will be determined by the Contracting Officer within 15 working days of receipt of all required documentation described above.

Final Acceptance

Final acceptance of product will be made on a lot basis. The lot size shall be defined by the Contractor subject to the following limitations: 1) for Waste Envelopes A, B, and C, the lot size shall not exceed the amount of product that is produced from a single batch transfer of a waste envelope (*see* Clause H.9, *Ordering and Contract Order Quantities*); and 2) for Waste Envelope D, the lot size shall not exceed the product quantity that results from six months of waste treatment services.

Final acceptance will be determined by the Contracting Officer within 90 working days after the Contractor has submitted all required documentation described under Interim Acceptance for all product in the lot.

DOE reserves the right at any time to: 1) verify Contractor submitted documentation, and 2) verify product compliance with Contract requirements. Verification methods used by DOE include, but are not limited to, independent inspection, review of operating records, or independent sampling and analysis of product. Upon request by DOE, the Contractor shall provide representative product samples.

If it is subsequently determined that waste treatment services have not been performed as required by the Contract, or if waste envelope materials cannot be accounted for, DOE may revoke any interim or final acceptance and require refund of any payments made.

Non-Conforming Product

In the event that the Contracting Officer identifies a product as non-conforming, the Contractor shall develop and implement a corrective action plan for the non-conforming product and a plan to correct and prevent recurrence of the non-conforming condition.

If DOE agrees that the Contractor cannot reasonably correct the non-conforming condition, the Contractor shall submit to DOE the analyses required to demonstrate that the non-conforming condition present in the product will not affect safe interim storage, ultimate disposal, or required re-work of the non-conforming product.

If the Contractor's analyses described above are acceptable to DOE, DOE will agree to take possession of the non-conforming product. DOE reserves the right to recover from the Contractor additional reasonable costs incurred by DOE to inspect, receive, handle, transport, interim store, rework, or dispose of the non-conforming product.

Definition of Terms

Analysis (A) -- As used in the specifications, an analysis is a set of engineering or scientific calculations that demonstrate that a product meets or exceeds a specification requirement. These calculations are typically based upon available data and assumptions regarding process operating conditions or materials. Analysis is required to identify conditions or assumptions which might limit validity and to identify specific documentation or measurements made during production to ensure validity (waste loading, container material, process additives, process measurements, etc.). Analyses shall be conducted and documented in sufficient detail that a knowledgeable technical person can review and concur in their accuracy and validity. Evidence of an independent review for each analysis shall be provided. An analysis will be considered to demonstrate compliance with specification requirements when: a) it has been approved by DOE; and b) when the conditions for validity or assumptions have been verified by independent means (e.g., process control records, raw material certifications).

Demonstration (D) -- A demonstration is the proof-of-principle of a specimen, article, or process test used to verify its conformance to the conditions of an analysis or product specification. Demonstrations are conducted where analysis is insufficient to provide proof-of-product acceptability or where analysis indicates the need for verification of assumptions (e.g., waste loading, explosivity, scale-up, process control). Demonstration reports shall identify: a) the demonstration being conducted; b) the limits of the demonstration's validity; and c) those inspections or tests that will be conducted during operations to verify that the demonstration results are still applicable to the product being produced. Proposed demonstrations will be submitted as part of the *Products and Secondary Wastes Plan* in Part A. A demonstration will constitute verification of compliance with a specification requirement when: a) it has been approved by DOE; and b) when the conditions for validity or assumptions have been verified by independent means (e.g., process control records, raw material certifications) during operation.

Inspection (I) -- Inspection is a non-destructive examination or measurement of a product characteristic that verifies compliance with product specifications. Inspections are conducted when product

characteristics can be easily verified by direct measurement (weight, dimensions, labeling, external temperature, etc.) or where the results of the calculations leave some doubt as to satisfaction of the product requirements.

Test (T) -- A test is the evaluation of a product characteristic in which representative samples are destructively examined or measured to verify compliance with product specifications. Tests are typically conducted where product characteristics cannot be readily verified by inspections, or where an inspection by itself, does not provide adequate verification of compliance (e.g., chemical composition, radionuclide release rate). Upon request by DOE, the Contractor shall split and provide DOE with samples obtained from or representative of the delivered products. The Contractor is responsible for defining what constitutes a statistically representative sample (e.g., based on the extent of process control achieved for that product).

Section F Deliveries or Performance

The period of performance for this Contract shall extend until June 1, 2012.

The following schedule shall apply to Part A:

CLIN or Activity	From	To
001	Date of Contract award (as indicated on item 28 of SF 26)	16 months from date of Contract award
002[1]	Date of Contract award (as indicated on item 28 of SF 26)	16 months from date of Contract award
Evaluate Contractors for initiation of Part B	16 months from date of Contract award (target date of December 29, 1997)	20 months from date of Contract award (target date of April 30, 1998)

The following estimated schedule shall apply to Part B and will be definitized prior to the authorization to proceed with Part B.

CLIN or Activity	From	To
Obtain Permit/Complete Design	Date of authorization to proceed with Part B work (target date of April 30, 1998)	December 31, 1999
Construction/Testing	December 31, 1999	June 1, 2002
003A, B & C (Completion of Minimum Order Quantities)	End of Construction/Testing	June 1, 2007
004A, B, C, & D (Completion of Minimum Order Quantities)[1]	End of Construction/Testing	June 1, 2007
Deactivation	DOE notification that no additional batches of waste will be provided	1 year after notification

A schedule for waste treatment services in excess of minimum order quantities will be estimated during Part B. As specified in Section H, Clause H.20, *Financial Responsibility for Deactivation*, deactivation may commence at any time after all of the minimum quantities have been processed and the U.S. Department of Energy (DOE) has provided notice. Deactivation shall be completed not more than one year after the Contractor's receipt of the notice that no additional batches of waste will be provided.

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[1] If included in Contract

Section G Contract Administration Data

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Section G Contract Administration Data

G.1 Correspondence Procedures

To promote timely and effective administration, correspondence submitted under this Contract shall include the Contract number and shall be subject to the following procedures:

a. Technical Correspondence. Technical correspondence (as used herein, excludes technical correspondence where patent or technical data issues are involved and correspondence which proposes or otherwise involves waivers, deviations, or modifications to the requirements, terms, or conditions of this Contract) shall be addressed to the U.S. Department of Energy (DOE) Contracting Officer's Representative (COR), with an information copy addressed to the DOE Contracting Officer.

b. Other Correspondence. All other correspondence shall be addressed to the DOE Contracting Officer with information copies of the correspondence to the COR and the DOE Patent Counsel (where patent or technical data issues are involved).

G.2 Contract Administration

The DOE Contracting Officer (CO) is:

U. S. Department of Energy
Richland Operations Office
Procurement Services Division, MSIN A7-80
Mr. Peter Rasmussen
P.O. Box 550 or 825 Jadwin Avenue
Richland, WA 99352

G.3 Billing Instructions

a. The Contractor shall submit the original and three copies of invoices or vouchers in accordance with the payments provision of this Contract to the following address:

U. S. Department of Energy
Richland Operations Office
Procurement Services Division, MSIN A7-80
Mr. Peter Rasmussen
P.O. Box 550 or 825 Jadwin Avenue
Richland, WA 99352

b. The Contractor shall submit invoices in accordance with the Billing Instructions, which will be provided at time of award of a Contract, and other applicable clauses of this document.

G.4 DOE Property Administration

For purposes of administration of DOE property the point of contact is:

U. S. Department of Energy
Richland Operations Office
Organizational Property Management Officer
Site Infrastructure Division, MSIN G3-18
P.O. Box 550 or 2261 Stevens Blvd.
Richland, WA 99352

G.5 Contract Authority

a. No order, statement, or conduct of DOE personnel who visit the Contractor's facilities or in any other manner communicate with Contractor personnel during the performance of this Contract shall constitute a change under the *Changes* Clause (FAR 52.243-1) of this Contract.

b. The Contractor shall not comply with any order, direction or request of DOE personnel unless it is issued in writing and signed by the CO or designated representative pursuant to specific authority otherwise included as a part of this Contract.

c. The Contractor shall not represent DOE in any communications or contact with stakeholders, regulators, or any third party unless written approval has been obtained from DOE. This limitation does not restrict the Contractor from working with the regulators and stakeholders to negotiate permits or to discuss issues associated with the Contractor's work.

d. The Contractor shall notify the CO orally within twenty-four hours, and if requested by the CO, in writing within five calendar days, from the date the Contractor receives from any person other than the CO any written or oral communication which can reasonably be construed as:

1) Authorizing a change or waiver of any Contract provision or requirement;

2) Providing an interpretation of any Contract provision or requirement; or

3) Constituting a recommendation, advice or direction.

e. On the basis of the most accurate information available to the Contractor, the oral and written notice specified in Section G.5.d. above, shall:

1) State the name and, if known, the employer and function of the person making the communication;

2) Identify any documents and state the substance of any oral communication involved;

3) State the name and title of the contracting official or employee involved in or knowledgeable of the matter; and

4) Provide any other information available such as dates, circumstances, and reasons for the communication.

G.6 Modification Authority

As stated above and not withstanding any of the other provisions of this Contract, the CO shall be the only individual on behalf of DOE authorized to:

a. Accept non-conforming work;

b. Waive any requirement of this Contract; or

c. Modify any term or condition of this Contract.

G.7 Representations and Certifications

Representations, Certifications, and Other Statements of Offerors completed as Section K of the Solicitation leading to the award of this Contract, dated May 9, 1996, as supplemented July 3, 1996, are hereby incorporated into this Contract by reference.

G.8 Delivery Destination for Contract Deliverables

In accordance with the deliverables described in Section C, *Statement of Work,* paragraphs C.4.1 and C.4.2, the following delivery points apply:

a. Contracting Officer (CO)

U. S. Department of Energy
Richland Operations Office
Procurement Services Division, MSIN A7-80
Attn: Mr. Peter Rasmussen
P.O. Box 550 or 825 Jadwin Avenue
Richland, WA 99352

b. Hanford Site contractor (H)

Project Hanford Management contractor
Hanford Site

c. Regulator (R)

Regulator as stated.

Section H Special Contract Requirements

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Section H Special Contract Requirements

H.1 Description of Contract

This is a two-part Contract to acquire Hanford tank waste treatment services at demonstration scale and on a privatized basis. The Contractor has been selected as having the requisite technical, business, and financial capability to perform both parts. Part A is a fixed term, firm-fixed price effort to establish the technical, operational, regulatory, and financial elements required to provide fixed-unit-priced waste treatment and immobilization services on a privatized basis. Based upon the Contractor's performance of Part A work and review of Part A deliverables, the Contracting Officer will determine whether to authorize the Contractor to proceed to perform Part B. In Part B, the Contractor would, on a demonstration scale and at fixed-unit-prices, treat Hanford tank waste utilizing facilities that are developed, financed, permitted, constructed, owned, operated, and deactivated by the Contractor.

H.2 Obligation of Funds

a. The amount of funds obligated to this Contract with respect to the work covered by Part A is $27,000,000.00.

b. Part B of this Contract will be incrementally funded. The amount of funds obligated to this Contract with respect to the work covered by Part B is $0.00. Such funds may be unilaterally increased by the U.S. Department of Energy (DOE). If the Contractor is not authorized to proceed with Part B, these funds may be unilaterally decreased by DOE. If the Contractor is authorized to proceed with Part B, the funds may be decreased by written agreement of the parties.

1) DOE's obligation for performance of this Contract is contingent upon the availability of appropriated funds from which payment for Contract purposes can be made. No liability on the part of DOE for any payment, termination liability, or other contractual requirement may arise from performance under this Contract unless and until funds are made available and obligated to this Contract.

2) DOE will make its best efforts to obligate funds to the Contract after Congressional authorization and appropriation, and the allotment is received by the DOE Richland Operations Office (RL). DOE intends to obligate sufficient funds to meet or exceed any annual termination liability (*see* Clause H.25, *Termination Settlement*) and performance payment requirements.

3) The Contractor will notify the Contracting Officer in writing whenever it has reason to believe that the payments due from DOE under this Contract in the next 60 days, when added to all payments previously made, will in the event of termination for convenience, or otherwise, result in an amount to be due from DOE which exceeds the amount obligated by DOE as specified in Clause H.2. Such notice shall, as a minimum, identify 1) the payments made to date; 2) expected payments to the point of exceeding amounts obligated; and 3) estimated payments for the remaining portion of DOE's fiscal year. Upon receipt of such notice, DOE will within 15 calendar days respond to the Contractor with a plan of action to address funding requirements.

4) In the event that DOE does not obligate sufficient funds, the Contractor shall have no further obligation to continue performance. In such event, DOE will advise the Contractor, within a reasonable time, of its intentions and expectations regarding further obligation of funds. If, solely by reason of failure of the Government to obligate additional funds in amounts sufficient for timely performance of the contract, the Contractor incurs additional costs or is delayed in the performance of the work under this contract and if additional funds are obligated, an equitable adjustment will be made in the contract prices, or in the time of delivery, or both. Failure to agree to any such equitable adjustment hereunder will be a dispute within the meaning of FAR 52.233-1.

H.3 Payments For Completed Work

DOE will pay the Contractor, upon the submission of proper invoices or vouchers, the prices stipulated in this Contract for completed work in accordance with the following:

a. For Part A, a single payment at the end of Part A will be made after receipt and acceptance of all deliverables in accordance with the requirements of Section C, *Statement of Work*, and Section E, *Inspection and Acceptance*.

b. For Part B, payment for waste treatment services will be made in accordance with the requirements of Section C, *Statement of Work*, and Section E, *Inspection and Acceptance*. Contractor invoices for payment may be submitted no more frequently than monthly.

H.4 Payment Pending Resolution of Contested Claim

In order to ensure that the Contractor is promptly compensated for all work that has been satisfactorily performed and accepted by the DOE, the DOE will pay the uncontested portion of any properly submitted claim, invoice, or other payment made in accordance with the terms of this Contract.

H.5 Economic Price Adjustments

a. The unit prices specified in Section B for Part B, are effective at October 1, 1997. Accordingly, the fixed-unit-prices may require prospective economic price adjustment on an annual basis.

b. The fixed-unit-prices applicable for the processing of order quantities for the Part B waste envelopes, shall be adjusted for pricing and billing as provided herein.

c. The fixed-unit-prices specified for Contract Line Item Numbers (CLINs) 003 and 004 may be prospectively adjusted on October 1 of each year as follows:

$$APt = (FP_{(q)} * 0.5) + ((FP_{(q)} * 0.5) * f)$$

The Index factor (f) equals ECI_{fg}/ECI_{fgb}

Where:

APt is the adjusted Fixed Price.

$FP_{(q)}$ is the Fixed Price bid at time of authorization to proceed with Part B.

ECI_{fg} is the published index entitled "Employment Cost Index, Wages and Salaries, All Private Industry Workers (ECIWSP)," as forecasted by Data Resources, Inc., hereinafter called the "*Index*." The calculations of rate adjustments shall always use the October 1 version of the *Index*.

ECI_{fgb} shall be the value for the index for the base period at October 1, 1997.

d. The Contractor agrees that, in the event that any of the indices utilized herein are removed from publication, negotiations will be conducted to select an alternate published index as nearly identical in scope and content as possible to the original index.

H.6 Price Adjustment for Waste Minimization

a. The Contractor and DOE shall negotiate a waste minimization performance incentive prior to the commencement of Part B work, which provides incentives for waste minimization and a penalty when waste volumes exceed reference values. The Contractor and DOE may establish a price adjustment mechanism based on the following criteria:

1) The basis for the price adjustment for Part B waste treatment services will be a comparison of the:

(a) *Reference values* established in Part A for the controlled elements of final products, intermediate products, and secondary wastes; and

(b) *Actual values* for the controlled elements during Part B waste treatment services.

2) The measurement *period* for price adjustment will be one-month or greater; each *reference value* and *actual value* will be a function of the total amount of waste treatment services provided during the *period.*

3) During the *period*, if the *actual value* for the controlled elements is within a threshold range of the corresponding *reference value*, no incentive or penalty will be applied.

4) During the *period*, if the *actual value* for any controlled element is outside the threshold range of the corresponding *reference value*, an incentive or penalty will apply.

5) The maximum aggregate adjustment will be limited to a fixed range.

6) Adjustments will not modify any requirement established for final products, intermediate products, or secondary waste generation established in Section C, *Statement of Work.*

b. In the event DOE and the Contractor are unable to agree upon a specific price adjustment mechanism for waste minimization as contemplated herein, the Contracting Officer may unilaterally establish a price adjustment mechanism for waste minimization, and such determination will be subject to the *Disputes* Clause (FAR 52.233-1) of this Contract.

H.7 Authorization to Proceed with Part B Work

a. At the conclusion of the period of performance specified in Section F, *Deliveries or Performance,* for CLIN 001 or CLIN 002 (if a part of this Contract), or sooner as determined by the Contracting Officer, DOE will review the deliverables specified in Section C, *Statement of Work*, paragraph C.4.1. DOE will have up to a four-month period to evaluate the deliverables and determine whether to authorize the Contractor to proceed to perform all or a portion of the Part B work specified in Section C, *Statement of Work*, paragraph C.4.2.

b. If DOE determines to authorize the Contractor to proceed with the performance of said Part B work, the Contractor shall immediately commence such performance and diligently prosecute said work in accordance with this Contract. If the Contractor is performing CLIN 002 during Part A, and the Contractor is authorized to proceed with Part B work, the authorization will be for either Low-Activity Waste (LAW) services, or Low-Activity and High-Level Waste (HLW) services.

c. The failure of DOE to authorize the Contractor to proceed to perform Part B work shall not be deemed a breach of Contract or a termination for the convenience of DOE, and the Contractor's only entitlement shall be to receive payment of the Contract price for CLIN 001, or CLIN 002 if a part of this Contract, upon delivery and acceptance of all Contract Part A deliverables. If DOE has not authorized the Contractor to perform Part B work twenty months after contract award, the Contract will be deemed to have been completed on that date.

H.8 Other Government Contractors

a. DOE has existing contracts and may award other contracts for work or services on the Hanford Site. It is recognized that the Contractor's performance will require day to day cooperation with other Hanford Site contractors. The Contractor shall use its best efforts to reach agreement with other Hanford Site contractors with which it has an interface, in order to define and formalize the interfaces and relationships among various contractors performing work for DOE on the Hanford Site.

b. The Contractor shall not commit or permit any act which will interfere with the performance of work by any other Hanford Site contractor.

c. Should other Hanford Site contractors interfere with the Contractor's performance during Part B, the Contractor will promptly inform the Contracting Officer and take appropriate action to mitigate such interference. If the Contractor is materially impacted by the interference, the Contractor shall be entitled to recovery of those incremental costs resulting solely from interfering actions of other Hanford Site contractors provided such costs are not attributable in whole or in part to activities for which the Contractor would otherwise be responsible under this Contract. In this event, the Contractor shall submit a proposal for an equitable adjustment under the *Changes* Clause (FAR 52.243-1) of the Contract.

H.9 Ordering and Contract Order Quantities

a. The minimum and maximum order quantities under this Contract for Waste Envelope A are as follows:

1) The minimum order quantity is 2,600 metric tons of sodium.

2) The maximum order quantity is 4,900 metric tons of sodium.

b. The minimum and maximum order quantities under this Contract for Waste Envelope B are as follows:

1) The minimum order quantity is 100 metric tons of sodium.

2) The maximum order quantity is 1,000 metric tons of sodium.

c. The minimum and maximum order quantities under this Contract for Waste Envelope C are as follows:

1) The minimum order quantity is 100 metric tons of sodium.

2) The maximum order quantity is 2,400 metric tons of sodium.

d. The minimum and maximum order quantities under this Contract for Waste Envelope D, if included in this Contract, are as follows:

1) The minimum order quantity is 245 metric tons of waste oxides exclusive of sodium and silicon.

2) The maximum order quantity is 465 metric tons of waste oxides exclusive of sodium and silicon.

e. Notwithstanding paragraphs H.9.a., H.9.b, and H.9.c, the maximum combined quantity of Waste Envelope A, Waste Envelope B, and Waste Envelope C the Contractor is required to process shall not exceed 5,100 metric tons of sodium.

f. DOE orders for quantities for each waste envelope in excess of minimum order quantities will be based on an evaluation of the Government needs and the best value to the Government. The determination to order or not order waste treatment services in excess of minimum order quantities shall be solely the Government's, and this determination shall not be subject to the *Disputes* Clause of this Contract.

g. For Waste Envelopes A, B, and C, and if included in this Contract, Waste Envelope D, the Contractor shall provide written notice to the Contracting Office specifying: 1) the quantity of the waste envelope requested, hereinafter referred to as a batch; and 2) the date the Contractor requests a transfer of the batch, hereinafter referred to as the *Waste Transfer Day* (WTD). The written notice shall be provided to the Contracting Officer 60 calendar days prior to the requested WTD. The Contractor is thereafter obligated to promptly inform the Contracting Officer in writing of any change to the WTD and the reason for any such change.

h. All orders for waste treatment services are subject to the terms and conditions of the Contract. In the event of conflict between an order and this Contract, the Contract shall control. Orders for waste treatment services up to the Contract minimum order quantity for each waste envelope shall be processed in accordance with the following schedule:

1) Waste Envelope A

(a) DOE will deliver the initial batch of Waste Envelope A containing at least 500 metric tons of sodium. The initial batch may be transferred along with a double-shell tank (DST) or separately from the transfer of the DST. Each transfer will be coordinated with the Contractor for the earliest practical date, but no later than June 2002.

(b) DOE intends to transfer subsequent batches to fill the Contractor's feed tank in optimum practical quantities; however, additional batches of Waste Envelope A will be delivered in quantities containing no less than 100 metric tons of sodium.

2) Waste Envelope B

(a) DOE will deliver the minimum order quantity of Waste Envelope B, containing at least 100 metric tons of sodium, after delivery of the minimum order quantity of Waste Envelope A.

(b) Any additional batches up to the maximum order quantity will be in quantities containing no less than 100 metric tons of sodium, however, actual volumes could be significantly higher.

3) Waste Envelope C

(a) DOE will deliver the minimum order quantity of Waste Envelope C, containing at least 100 metric tons of sodium, after the delivery of the minimum order quantity of Waste Envelope B.

(b) Any additional batches up to the maximum order quantity will be in quantities containing no less than 100 metric tons of sodium, however, actual volumes could be significantly higher.

4) Waste Envelope D (if included in this Contract)

(a) DOE will deliver an initial batch of Waste Envelope D containing at least 5 metric tons of waste oxides exclusive of sodium and silicon.

(b) Any additional batches up to the maximum order quantity will be in quantities agreed to between DOE and the Contractor.

i. All services to be furnished under this Contract shall be ordered by issuance of written order by the Contracting Officer within 30 calendar days of the WTD. The written order shall specify the batch, the WTD, and the expected date of delivery. After issuance of the order, DOE shall be obligated to complete delivery not later than 30 days after the WTD specified by the Contractor's notice in paragraph H.9.g or the date the Contractor is ready to receive waste, whichever is later.

j. Prior to the completion of the Contractor's waste treatment services for the minimum order quantities specified herein, DOE shall provide the Contractor with a preliminary schedule for waste treatment services in excess of the minimum order quantity. This schedule is for informational purposes only and shall not be binding on the DOE. In the event of a conflict between the schedule and a written order issued pursuant to paragraph H.9.h above, the written order shall prevail.

H.10 Availability of Government-Furnished Items

a. DOE will provide the Government-furnished items that are identified as *Provided by DOE at No Cost* on Figure C–1, *Privatization Functions, Inputs, and Outputs,* and defined in Section C.7, *Interface Descriptions*. Government-furnished items will be provided: 1) under the conditions stated in the Interface Control Document established in Section C.7, *Interface Descriptions*; and 2) in accordance with the DOE-approved *Integrated Master Plan* schedule established at the end of Part A.

b. Unless both parties agree to a change to the conditions and schedule for Government-furnished items, the Contractor shall have responsibility and sole expense for any item that is: 1) not identified as a Government-furnished item; 2) identified as a Government-furnished item, but requested in quantities, or under conditions, that are different than those established in the Interface Control Document established in Section C.7, *Interface Descriptions*; or 3) identified as a Government-furnished item, but requested by the Contractor on a schedule different than the DOE-approved *Integrated Master Plan* schedule established at the end of Part A.

c. The DOE rail system identified on Figure C–1, *Privatization Functions, Inputs, and Outputs*, and defined in Section C.7, *Interface Description 12: Roads and Rails*, may be discontinued during the term of the Contract. Discontinuance of the DOE rail system will not be considered a Contract change or uncontrollable circumstance as defined in Clause H.28, *Uncontrollable Circumstances*, and the Contractor will not be entitled to any adjustment in Contract price or prices in the event of discontinuance of the DOE rail system.

d. Government-furnished items will be provided on a best effort basis consistent with historical reliability which reflects normal maintenance, periodic equipment failure, and other scheduled/unscheduled interruptions.

H.11 Contractor Property

a. Unless identified in the Contract as DOE-furnished, the Contractor shall provide all materials and supplies necessary to perform the work as specified in the Contract. All such materials and supplies must be compatible and operate safely with existing systems equipment. For Contractor vehicles and equipment requirements on the Hanford Site (*see* Section J, Attachment 4, *Contractor Vehicles and Equipment*).

b. The Contractor shall retain title to the facility, exclusive of the land on which the facility is situated, and all equipment installed by the Contractor during the Contract term, unless the Contract is terminated by DOE. In the event of termination, DOE may exercise ownership rights in accordance with the requirements of Clause H.25, *Termination Settlement.*

c. Upon completion of deactivation, the Contractor shall remove from the site, all items of property as specified in the Deactivation Plan delivered to the DOE in accordance with this Contract. Items remaining on the site, shall become the property of DOE, and the Contractor shall provide such property, free of any liens, mortgages or other encumbrances.

H.12 Environmental Permits and Applications

a. To the extent permitted by law and subject to other applicable provisions of the Contract that impose responsibilities on DOE, and provisions of law that impose responsibility on DOE or third parties, the Contractor shall be responsible for obtaining in its own name and shall solely be responsible for compliance with all permits, authorizations and approvals from federal, state, and local regulatory agencies which are necessary for the performance of the work required of the Contractor under this Contract. Copies of all applications and notifications to regulatory agencies shall be provided to DOE at the same time they are provided to regulatory agencies.

b. Notwithstanding the above, for purposes of the compliance with the hazardous waste provisions of the *Resource Conservation and Recovery Act* (RCRA) as amended, and the *State of Washington Hazardous Waste Management Act of 1976* as amended (Chapter 70.105A Revised Code of Washington (RCW)), and implementing regulations, to the extent permitted by law, the Contractor shall obtain its hazardous and dangerous waste permit(s) as chapter(s) to the *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for Treatment, Storage, and Disposal of Dangerous Waste* (Permit Number WA 78900008967). The Contractor's facility shall be considered an individual unit or units under permit WA 7890008967. Depending upon decision of the regulatory agency(ies), the Contractor may be authorized to proceed with construction of required facilities under DOE's permit for hazardous and dangerous waste activities at the Hanford Site prior to issuance of a final status Part B Hazardous (Dangerous) Waste permit for the Contractor's facility.

c. DOE shall, as required by the applicable regulatory agency(ies) sign the hazardous (dangerous) waste permit application(s) for the Contractor's unit and based upon the outcome of review by regulatory agencies, may sign other permit applications such as Contractor's air operating permit applications as co-owner, due to DOE's ownership of the land upon which the facility will be located, and will remain responsible to the extent provided by law and this Contract in each case. The Contractor shall request the regulatory agency(ies) to permit the feed tank as a unit separate from the remaining double shell tanks, subject to other provisions in the Contract as to responsibilities of DOE. If the regulatory agency(ies) are unwilling to permit this feed tank as a separate unit under the Hanford Site permit WA 7890008967, the Contractor shall take all necessary steps to become a co-operator of the double shell tank unit under the Hanford Site Hazardous (dangerous) permit and air emissions permit(s). DOE shall have no obligations with regard to construction, upgrades, or operation of the Contractor's

facilities and ancillary equipment at Contractor's facilities, and the double shell tank which is provided as government furnished property to the Contractor for use as the feed tank (except as may be specifically provided for elsewhere in the Contract). Conversely the Contractor shall have no permit obligations beyond the Contractor's facilities, property, ancillary equipment, and the double-shell tank provided to the Contractor for use.

d. The Contractor shall provide to DOE for review and comment in draft form, any hazardous/dangerous waste permit applications and other regulatory materials and permits which are required to be co-signed or submitted by DOE. These materials shall be provided to DOE initially not later than 90 days prior to the date they are to be submitted to the regulatory agency. DOE will provide comments to the Contractor within 30 days after receipt of the document. The final regulatory documents shall be provided to DOE at least 30 days prior to the date of submittal to the regulatory agencies. The Contractor shall provide a certification statement attesting to DOE, that the information DOE is being requested to sign has been prepared in accordance with applicable requirements, by including the following certification statement in the submittal of such materials to DOE:

> "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 person or persons who manage the system, or those 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."

The certification statement to DOE shall be signed by the individual who is authorized to sign such certification statements submitted to state or Federal regulatory agencies under the applicable regulatory program. DOE shall provide an analogous statement for information provided by DOE to Contractor to be included in any Contractor permit application. The Contractor shall indemnify and hold harmless DOE and its employees, officers, agents and other Hanford Site contractors from any costs, claims (including third-party claims for damage to persons or property), demands, fines or any penalties, including reasonable legal costs, to the extent resulting from any failure of the Contractor to comply with applicable permits or regulatory requirements, or resulting from any obligations DOE may incur as a result of signing hazardous, dangerous waste, or other permit applications or submittal for facilities under control of the Contractor, except for claims for which DOE has accepted liability under DEAR 952.250-70, *Nuclear Hazards Indemnity Agreement* and Clause H.24, *Pre-existing Conditions*.

e. The Contractor shall provide to DOE copies of all environmental permits, authorizations, and regulatory approvals issued to the Contractor by the regulatory agencies. DOE shall, upon request, make available to the Contractor access to copies of all environmental permits, authorizations, and approvals issued by the regulatory agencies to DOE, that the Contractor may need to comply with applicable law.

The Contractor shall provide all necessary technical information required to support applications for revision of DOE or other Hanford Site contractor environmental permits when such applications or revisions are related to Contractor's operations. Upon request, DOE shall provide to the Contractor access to all necessary and available technical information required to support applications for or revisions to permit applications. The Contractor and DOE shall provide to each other a certification statement relating to such technical information in the form required by paragraph d. herein. The Contractor shall perform all monitoring and reporting required to meet permitting or other compliance requirements required of DOE or the Contractor for acceptance of Contractor waste streams. When such reporting is required of DOE for Hanford on a site-wide basis, the Contractor shall provide the technical information related to its operations accompanied by the certification statement directly to DOE (*see* paragraph H.12.d).

f. In the event of termination or expiration of this Contract, DOE may require the Contractor to take all necessary steps to transfer without cost to DOE some or all environmental permits held by the Contractor. DOE will assume responsibility for such permits, with the approval of the regulating agency, and the Contractor shall be relieved of all liability and responsibility to the extent that such liability and responsibility results from the acts or omissions of a successor Contractor or DOE, or their agents, representatives, or assigns.

g. Except to the extent covered by insurance maintained or required to be maintained by the Contractor under this Contract or otherwise required by law, DOE agrees to reimburse, and the Contractor shall not be responsible for any costs, claims (including third party claims for damage to persons or property), demands, fines or penalties (but those limited to a civil nature), including reasonable legal costs, resulting from (i) any failure of DOE or other Hanford contractors to comply with applicable permits or regulatory requirements; (ii) compliance costs related to conditions on other portions of the Hanford Site at any time and on the land, items, equipment or facilities provided to Contractor after transfer back to DOE upon completion or other termination or expirations of the Contract; provided, however, that such costs, claims, demands, fines or penalties are not caused by or arise out of performance of work by the Contractor under this Contract.

H.13 Insurance - Indemnification by Contractor

a. At all times during contract performance, the Contractor shall maintain insurance coverage required by law and the schedule contained in Section J, Attachment 5, *Contractor Required Insurance*, of this Contract. In addition, the Contractor shall, in a timely fashion, obtain any performance and payment bonds required by law underwritten by sureties acceptable to the Government. The Contractor shall submit to the Contracting Officer copies of all required insurance policies and bonds before commencing the work covered by the insurance policy.

b. Required insurance policies shall name the DOE as an additional insured party, and shall waive any subrogation rights against the Government, its Hanford Site management contractor(s), and their agents, employees and assigns. Required insurance shall cover losses for claims made after the completion date of this contract where the acts or omissions giving rise to the claims occurred during contract performance.

c. Except as otherwise provided in this Contract, the Contractor shall indemnify and hold harmless DOE and its employees, officers, agents and contractors from any costs, claims or liabilities, including legal fees, for property damage and personal injury resulting from or incident to Contractor's performance of this Contract.

To the extent necessary to effectuate the foregoing indemnification obligation, the Contractor specifically waives any and all immunity provided by any industrial insurance or workers' compensation act (including the *Washington Industrial Insurance Act*, RCW Title 51) and agrees to release, indemnify, and save harmless the Government, its Hanford Site contractors, and their agents, employees, and representatives from liability for any action brought by or on behalf of the Contractor's own employees or agents or the agents or employees of any of the Contractor's subcontractors at any tier.

H.14 Litigation and Claims

a. The Contractor shall notify DOE of initiation of litigation against third parties, including proceedings before administrative agencies, in connection with this Contract. In litigation against third parties related to the performance of this Contract initiated by the Contractor, DOE, where appropriate, will cooperate with and furnish all reasonable assistance to the Contractor.

b. The Contractor shall give the Contracting Officer prompt notice in writing of any action, including any proceeding before any administrative agency, filed against the Contractor arising out of the performance of the Contract. Except as otherwise directed by the Contracting Officer in writing, the Contractor shall furnish promptly to the Contracting Officer, copies of all pertinent papers received by the Contractor with respect to such action. DOE, where appropriate, will cooperate with and furnish all reasonable assistance to the Contractor.

c. Nothing in this clause shall affect or impair DOE's obligation under the Nuclear Hazards Indemnity Agreement at DEAR 952.250-70, the *Pre-Existing Conditions* Clause at H.24, or any other provisions of this Contract or law obligating DOE to defend, indemnify or hold the Contractor harmless.

H.15 Protection of Lienholders' Interest

a. DOE recognizes that project financing associated with Contractor performance on the Contract may be accomplished using third-party financing, and as such, may be secured by a mortgage and/or security interest in this Contract and the Contractor equipment or facilities referred to herein.

b. DOE will consider:

1) Requests for assignments of monies due or to become due under the Contract, provided the assignment complies with the *Assignment of Claims Act*;

2) Requests to provide lenders or lienholders copies of any cure or show cause notice issued to the Contractor;

3) Requests by lenders or lienholders for extension of response time to cure or show cause notices; and

4) A proposed takeover of Contract performance in the event the Contractor defaults in performance. Requests for takeover of the Contract on substantially the same terms and conditions will be approved if the proposed substitute party is acceptable to DOE.

H.16 Implementation of Section 3161 Policy on Work Force Restructuring

a. Pursuant to the requirements of Section 3161 of the *National Defense Authorization Act for Fiscal Year 1993* (Public Law 102-484), preference is to be provided to displaced employees whose eligibility is defined in the DOE guidelines on work force restructuring or the *Hanford Site Work Force Restructuring Plan*, including lower-tier subcontractor employees, for work at the Hanford Site in accordance with the following, unless modified by final Section 3161 guidance issued by DOE. The Contractor shall:

1) Require subcontractors and sub-tier contractors offering or bidding to perform a work activity to provide hiring preference, to the extent practicable, in filling vacancies to displaced employees who meet the eligibility criteria contained in DOE's *Interim Planning Guidance for Contractor Work Force Restructuring* and who are qualified for the prospective work.

2) Hold discussions with affected unions or subcontractors and bargain where required by law regarding the implementation of the hiring preference provided by paragraph H.16.a.1.

b. The Contractor and any lower-tier subcontractor subject to paragraph H.16.a.1 shall negotiate with affected unions to implement the hiring preference, including if necessary, special agreements for allocation of work or arrangements for exceptions to internal union rules that might otherwise be obstacles to implementation of the hiring preference, consistent with DOE guidance regarding Section 3161.

c. Nothing in this Clause shall be construed to excuse the Contractor or any subcontractor from compliance with the requirements of any applicable law.

d. Nothing in this Clause is intended to create rights in third parties or persons.

H.17 Preference in Hiring

a. The Contractor will give preference, where practicable and consistent with the Contractor's judgement of business needs, for filling job vacancies for work under this Contract to eligible workers who meet the position qualification requirements, and who have been:

1) Involuntarily separated from employment within the DOE complex as a result of restructuring of the DOE defense nuclear facilities; or,

2) Voluntarily separated as a result of a work force restructuring and who used the Training and Education Assistance Program, as set forth below. (Priority in filling vacancies will be given to involuntarily separated workers over voluntarily separated workers.)

b. Preference will be given in the following order to involuntarily and voluntarily separated workers who are registered through DOE's Job Opportunities Bulletin Board System (JOBBS), as follows:

1) Involuntarily separated eligible former workers of DOE/RL, its contractors, subcontractors and lower-tier contractors;

2) Involuntarily separated eligible former workers of other offices of DOE, its contractors, subcontractors and lower-tier contractors at DOE sites other than DOE/RL; and

3) Eligible former workers of DOE/RL, its principal contractors, and their integrated subcontractors who have taken a voluntary layoff and who have significant participation in DOE's educational assistance program.

c. Where these requirements conflict with any existing contract or collective bargaining agreement, the Contractor may be relieved of the obligation to meet these requirements if it specifically identifies the conflict in its proposal and the reasons the conflict cannot be reasonably resolved by other means.

H.18 Labor Relations

a. Pursuant to Section 3161 of the *National Defense Authorization Act for Fiscal Year 1993* (Public Law 102-484), the Contractor shall provide hiring preference for filling specialized initial operating and maintenance positions for the Part B activities, to displaced and surplus Project Hanford Management (PHM) contractor employees, except for positions required for work that historically has been determined to be covered by the *Davis-Bacon Act*. Accordingly, the Contractor shall:

1) Initially fill specialized operating and maintenance positions required for the Part B activities of this contract, other than managerial and supervisory positions, by offering a right of first refusal to qualified employees of the Contractor and its major subcontractors who have enrolled in training pools to be established and operated by the PHM contractor.

(a) The PHM contractor, in advance of the commencement of Part B, shall be required to establish one-time training programs specifically for the purpose of retraining employees in the specialized skills required for each facility required for Part B operations. The training program shall terminate upon completion of the initial Part B hiring process unless the Contractor independently contracts for extended training with the PHM contractor.

(b) Employees of the PHM contractor and its major subcontractors eligible for such training will be first those who have been displaced or who are facing displacement as a result of work force restructuring and are eligible for hiring preference pursuant to Section 3161 of the *National Defense Authorization Act for Fiscal Year 1993*. Any remaining training pool positions will be filled by the PHM contractor, based upon the recommendations of the Contractor.

2) Assist in the operation of the training pool by advising the PHM contractor on the number of specialized skill training positions to be established, on the training content and methodology and on skill proficiency requirements; and, if practicable, shall jointly conduct subsequent on-the-job training of training pool employees with the PHM contractor. Training pool employees will be employed solely by the PHM contractor.

3) Notify and solicit applications from the training pool employees as early as practicable prior to the commencement of operations of each facility required for Part B. Qualified employees shall be given a reasonable period within which to accept such offers, which in no case shall be less than 10 days.

4) Make no offers of employment, other than for managerial and supervisory positions, until the Contractor has fully complied with the requirement to offer training pool employees a right of first refusal for filling initial positions for Part B.

5) Determine the number of employees necessary for the efficient performance of this contract.

6) Not be required to offer a right of first refusal to any employee in the training pool who failed to meet all skill proficiency requirements established by the Contractor.

7) Fill vacant positions, other than those filled from the training pool pursuant to this Section, in accordance with the Contractor's normal business practices, subject to any applicable requirements of this contract, including Section 3161 of the *National Defense Authorization Act for Fiscal Year 1993.*

b. As a result of the training pool and initial hiring requirements, it is determined that the following will occur:

1) PHM contractor training pool employees being retrained for manual job classifications will be represented for collective bargaining by the Hanford Atomic Metal Trades Council (HAMTC) under the then existing labor contract with the PHM contractor.

2) A majority of potential bargaining unit employees hired by the Contractor for Part B operations will be former training pool employees of the PHM contractor who had been represented by the HAMTC.

3) Employees hired from the PHM contractor training pool are likely to have had experience and training in environmental remediation work, including tank waste storage, monitoring and treatment, and are likely to carry over substantially the same skills to their new work for Part B operations.

4) Based on the foregoing, the Contractor shall initially consult with HAMTC regarding the initial terms and conditions of employment of the employees previously represented by HAMTC, and shall recognize and bargain with HAMTC as the collective bargaining representative of those employees as a successor employer, consistent with the *National Labor Relations Act.*

c. In addition to, and consistent with the provisions set forth above, the Contractor will respect the rights of employees to:

1) Organize, form, join or assist labor organizations, bargaining collectively through representatives of the employees' own choosing, and engage in other protected concerted activities for the purpose of collective bargaining; and

2) Refrain from such activities.

d. To the extent required by law, the Contractor, or its major subcontractors shall give notice to any lawfully designated representative of its employees for purposes of collective bargaining agreement and, upon proper request, bargain to good faith impasses or agreement, or otherwise satisfy applicable bargaining obligations.

e. The Contractor shall, at the request of the Contracting Officer, provide all applicable documentation regarding any labor relations developments at the prime or subcontract level that involve or appear likely to involve:

1) Possible strike situations affecting the facility;

2) Referral to the Energy Labor-Management Relations Panel;

3) The National Labor Relations Board at any level;

4) Recourse to procedures under the *Labor-Management Act of 1947*, as amended, or any other Federal or state Labor law; or

5) Any grievance which may reasonably be assumed will be arbitrated under a Collective Bargaining Agreement.

H.19 Implementation of the Hanford Site Stabilization Agreement

a. The *Hanford Site Stabilization Agreement* for all construction work for DOE at the Hanford Site, which is referenced in this Section, consists of a Basic Agreement dated September 10, 1984, plus appendices thereto, signed by J.A. Jones Construction Services Company and Morrison-Knudsen Company, Inc., the Building and Construction Trades Department, AFL-CIO, and its affiliated International Unions, and the International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America.

b. In accordance with the *Hanford Site Stabilization Transition Agreement*, dated December 18, 1986, and effective 12:01 a.m., March 1, 1987, the ICF Kaiser Hanford Company (ICF-KH) is recognized as successor in interest to those rights, duties, and obligations previously held by J.A. Jones Construction Services Company under the terms of the *Hanford Site Stabilization Agreement*.

c. This Section applies to employees performing work, under contracts (or subcontracts thereunder) administered by the Richland Operations Office of the U.S. Department of Energy (DOE/RL) which are subject to the *Davis-Bacon Act*, in the classifications set forth in the *Hanford Site Stabilization Agreement* for work performed at the Hanford Site.

d. Contractors and subcontractors at all tiers who are parties to an agreement(s) for construction work with a local union having jurisdiction over DOE/RL construction work performed at the Hanford Site, or who are parties to a national labor agreement for such construction work, shall become signatory to the *Hanford Site Stabilization Agreement* and shall abide by all of its clauses, including all current appendices thereto. Subcontractors at all tiers who have subcontracts with a signatory contractor or subcontractor shall become signatory to the *Hanford Site Stabilization Agreement* and shall abide by all of its articles, including all current appendices thereto.

Contractors and subcontractors at all tiers who are not signatory to the *Hanford Site Stabilization Agreement* and who are not required under this Section to become signatory to it, shall pay not less and no more than the wages, fringe benefits, and other employee compensation set forth in Appendix A thereto and shall adhere, except as otherwise directed by the Contracting Officer, to the following Articles of the *Hanford Site Stabilization Agreement*:

1) Article VII, Employment, Section 2 only

2) Article XII, Non-Signatory Contractor Requirements

3) Article XIII, Hours of Work, Shifts, and Overtime

4) Article XIV, Holidays

5) Article XV, Wage Scales and Fringe Benefits, Sections 1 and 2 only

6) Article XVII, Payment of Wages - Checking In & Out, Section 3 only

7) Article XX, General Working Conditions

8) Article XXI, Safety and Health

e. The obligation of the Contractor and its subcontractors to pay fringe benefits shall be discharged by making payments required by this Contract in accordance with the Articles of the amendments to the *Davis-Bacon Act* contained in the Act of July 2, 1964 (Public Law 88-349-78, Statutes 238-239), and the Department of Labor regulations in implementation thereof (29 CFR 1, 5).

f. DOE may from time to time provide notice to the Contractor of any changes in wages, fringe benefits, and other employee compensation as the *Hanford Site Stabilization Agreement*, including all current appendices thereto may be modified by the parties thereto from time to time. The Contractor shall not be entitled to any change in the Contract price due to any such change in wages or fringe benefits under the *Hanford Site Stabilization Agreement* during the term of the Contract.

g. The requirements of this Section are in addition to, and shall not relieve the Contractor of any obligation imposed by other sections or subsections of the Contract.

h. The Contractor agrees to maintain its bid or proposal records showing rates and amounts used for computing wages and other compensation, and its payroll and personnel records during the course of work, and to preserve such records for a period of three years thereafter, for all employees performing such work. Such records will contain the name and address of each such employee, the employee's correct classification, rate of pay, daily and weekly number of hours worked, and dates and hours of the day within which work was performed, deductions made, and amounts for wages and other compensation covered in this Section. The Contractor agrees to make these records available for inspection by the Contracting Officer and will permit him to interview employees during working hours on the job.

i. The Contractor agrees to insert the clauses of this Section in all subcontracts for the performance of work subject to the *Davis-Bacon Act* administered by DOE/RL at the DOE's Hanford Site.

H.20 Financial Responsibility for Deactivation

a. The Contractor shall be responsible for deactivation of the Contractor's facility in accordance with the requirements of this Contract (Section C.5, Standard 8, *Facility Deactivation*).

In order to ensure the Contractor is financially capable of carrying out these functions, the Contractor shall establish a financial assurance mechanism, containing terms and conditions acceptable to DOE, prior to commencement of waste treatment services under this Contract, that will ensure that sufficient funds are available for completion of deactivation activities. The Contractor shall create and make regular payments to a Deactivation Escrow Account in order to fund the most current deactivation cost estimate submitted in accordance with paragraph h. of this Clause.

b. The Deactivation Escrow Account will be administered by a third party trustee in accordance with applicable state laws and the requirements of this Clause. The Deactivation Escrow Account shall be immune from any levy, attachment, or lien for the benefit of any creditor, including the financial institution. Authorized investments must be restricted to direct obligations of the United States or obligations on which the principle and interest are guaranteed by the United States. Payments shall be made no less frequently than quarterly and must be sufficient to provide for full funding of deactivation costs by the time the minimum order quantity has been processed and invoiced by DOE. The quarterly payments shall be such that the percentage of funds in the Deactivation Escrow Account divided by the current estimated deactivation cost shall equal or exceed the percentage of the minimum order quantity processed for all waste feeds processed and invoiced to DOE at that date.

If the Contractor does not make quarterly payment in accordance with the requirements of this Clause, DOE reserves the right to withhold amounts required from payments to the Contractor and to directly fund the Deactivation Escrow Account.

c. Interest or other earnings remain part of the Deactivation Escrow Account and shall be accounted for separately. The Contractor may not remove any funds from the Deactivation Escrow Account until deactivation is initiated and such funds shall be used solely for deactivation of the facility. The trustee cannot release funds from the Deactivation Escrow Account without DOE's authorization to proceed with deactivation. At the end of successful completion of deactivation, any remaining funds shall be released to the Contractor for the Contractor's unencumbered use.

During deactivation, the Contractor may withdraw no more than 90 percent of the funds in the Deactivation Escrow Account. The remaining 10 percent of funds will be withheld in the Deactivation Escrow Account until DOE authorizes release based upon successful completion of all contract requirements, including deactivation. Upon DOE authorization to release remaining funds, such funds shall promptly be released to the Contractor. If the Contractor does not complete performance under this Contract, DOE will have the right to the remaining 10 percent withheld in the Deactivation Escrow Account. The exercise of this right does not relieve the Contractor from its obligation for completion of performance of the Contract.

d. If the Contract is terminated for convenience prior to the processing of the minimum order quantity, the ratio of the Deactivation Escrow Account balance on the termination date to the deactivation cost estimate must equal or exceed the ratio of the waste processed and invoiced to DOE to the minimum order quantity for all waste feeds.

e. If DOE orders processing of waste above the minimum order quantity and the current deactivation cost estimate required in paragraph f. below indicates a funding shortfall, quarterly payments should be at least one-quarter of any deficiency (total funding shortfall) between the Deactivation Escrow Account balance and the most recently estimated cost of deactivation. Any deficiency identified in the annual estimate shall be funded within the year or before deactivation begins, if deactivation is to occur within the year.

f. The Contractor shall have a detailed written estimate in current dollars of the cost of deactivating the facility in accordance with the *Deactivation Plan*, as described in Standard 8, *Facility Deactivation,* provided for in this Contract. The deactivation estimate shall:

1) Equal the cost of deactivation at the point in the facility's operating life when the extent and manner of its operation would make deactivation the most expensive as indicated by its deactivation plan;

2) Be based on the costs to the Contractor of hiring a third party, not a parent or subsidiary of the Contractor to perform the deactivation. Such estimate must be segregated from *Resource Conservation and Recovery Act* (RCRA) closure, decontamination and decommissioning (D&D), and site restoration estimates; and

3) Not incorporate any salvage value that may be realized with the sale of any facility structures or equipment, or other assets associated with the facility at the time of deactivation.

g. During the active life of the facility, the Contractor shall at least annually adjust the deactivation estimate for inflation or other operational factors which would significantly alter the latest annual estimate for deactivation. The inflation adjustment may be made by recalculating the maximum costs of deactivation in current dollars or by using the *Index* as stated in the *Economic Price Adjustments* Clause (H.5). If a significant operating event or occurrence of an unusual nature creates a material impact on the deactivation cost estimate, the Contractor shall adjust the cost estimate within 60 days.

h. The Contractor shall submit the most current estimate for deactivation to DOE for review and concurrence no later than October 31 of each year. DOE review and concurrence in the cost estimates do not constitute any change in the scope of work or fixed prices. The Contractor is not relieved of any obligation for fully funding or performing deactivation through submission of the deactivation cost estimate or DOE review thereof. In addition, the Contractor shall compare the deactivation estimate with current funding in the Deactivation Escrow Account and anticipated funding for the next year.

In the event that the Contractor is required to complete deactivation and the deactivation costs exceed the amount of funds in the Deactivation Escrow Account, the Contractor shall remain responsible for fully funding the deactivation activity.

i. The financial assurance mechanism shall provide that DOE is party to the Deactivation Escrow Account and that DOE will succeed to the interests of the Contractor in the event that the Contractor is not required to complete deactivation or does not complete performance under this Contract. The trust agreement must provide that in such event any funds held in escrow, trust, other accounts, or that are otherwise secured or guaranteed will be transferred to DOE for use by DOE in carrying out the deactivation activities. DOE shall transfer any remaining deactivation funds to the Contractor within 60 days of completion of deactivation activities by DOE.

H.21 Preservation of Antiquities and Land Areas

Federal law provides for the protection of antiquities located on land owned or controlled by DOE. Antiquities include Indian graves or campsites, relics, and artifacts. The Contractor shall control the movements of its personnel and its subcontractor's personnel at the job site to ensure that any existing antiquities discovered thereon will not be disturbed or destroyed by such personnel. It shall be the duty of the Contractor to report to the Contracting Officer the existence of any antiquities so discovered. The Contractor shall also preserve all vegetation except where such vegetation must be removed for survey or construction purposes. Any removal of vegetation shall be in accordance with the terms of applicable permits.

H.22 Tri-Party Agreement

a. The DOE and the U.S. Environmental Protection Agency (EPA) Region 10, and the Washington State Department of Ecology (Ecology) have entered into the *Hanford Federal Facility Agreement and Consent Order*, referred to as the *Tri-Party Agreement* (TPA), to ensure compliance with the *Resource Conservation and Recovery Act* (RCRA) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), as amended. The TPA sets forth certain requirements and milestones for clean-up activities at the Hanford Site. While the TPA is binding and enforceable only against the TPA signators, the Contractor agrees to plan and perform work under this Contract consistent with the existing requirements or, when appropriate, proposed milestones of the TPA set forth in Section J, Attachment 6, *Tentative Agreement on Tank Waste Remediation System Privatization -- TPA Change Package*.

b. The Contractor shall be responsible for terminating facility operations and positioning the facility for transition into the Hanford Site Decontamination and Decommissioning (D&D) program as part of deactivation. This transition process activity shall be performed in accordance with Standard 8, *Facility Deactivation*, and consistent with the TPA, Section 14.0, *Facility Decommissioning Process*, as revised (identified as Section 8.0 in the Tentative Agreement on Amendment Six to the TPA). Actions taken to deactivate the facility will also be consistent with the provisions of the TPA, Section 6.0; Treatment, Storage, and Disposal Unit Process, Planning. Implementation of this transition shall be in accordance with Section C.2, *Interactions With the Contractor*, of the Contract.

c. The parties recognize that the TPA may be amended during the performance period of this Contract. DOE will formally direct the Contractor to implement those amended TPA requirements which will apply to the scope of work under this Contract. DOE's direction under this Clause is unilateral, however, the Contractor may be entitled to an equitable adjustment under the *Changes* Clause (FAR 52.243-1) of the Contract, when such DOE direction has materially impacted the Contractor.

H.23 Contractor Acceptance of Notices of Violation or Alleged Violations, Fines and Penalties

a. Regardless of whether it is DOE or the Contractor who receives a notice of violation (NOV) or notice of alleged violation (NOAV) or who is assessed a fine or penalty, as between DOE and the Contractor, responsibility for such NOV, NOAV, fine or penalty (including a penalty under the TPA) shall follow the principle that each is responsible for its own performance under this Contract.

b. The Contractor may conduct negotiations with regulators regarding NOVs/NOAVs, fines and penalties; however, the Contractor shall not make any commitments or offers to regulators which would bind DOE in any form or fashion, including monetary obligations, without receiving written concurrence from the Contracting Officer prior to making any such offers/commitments. Further, DOE shall utilize its best efforts not to make commitments or offers to regulators which would bind the Contractor in any form or fashion, including monetary obligations, without receiving written concurrence from the Contractor prior to making any such offers/commitments.

c. In the event that a regulatory agency assesses a monetary fine against DOE for violations caused by Contractor activities, including penalties assessed against DOE pursuant to the TPA, the Contractor shall reimburse DOE for the amount of the fine and other associated costs.

H.24 Pre-existing Conditions

a. DOE agrees to reimburse, and the Contractor shall not be held responsible for, any liability (including without limitation, a claim involving strict or absolute liability and any civil fine or penalty), expense, or remediation cost, but limited to those of a civil nature, which may be incurred by, imposed on, or asserted against the Contractor arising out of any site condition, act or failure to act which occurred before the Contractor assumed facility site responsibility on the effective date of Notice to Proceed with Part B work. To the extent the acts or omissions of the Contractor cause or add to any liability, expense or remediation cost resulting from conditions in existence prior to the effective date of Notice to Proceed with Part B work, the Contractor shall be responsible in accordance with the terms and conditions of the Contract.

b. The Contractor shall inspect the facilities and sites and identify to the Contracting Officer, in a timely manner, those conditions which it believes could give rise to a liability, obligation, loss, damage, penalty, fine, claim, action, suit, cost, expense, or disbursement, or areas of actual or potential noncompliance with the terms and conditions of the Contract or applicable law or regulation.

c. The obligations of DOE under this Clause are subject to the availability of appropriated funds from which such payments can be made.

H.25 Termination Settlement

a. Notwithstanding the *Termination for Convenience* Clause in Section I, *Contract Clauses,* additional rights and responsibilities of the parties are specified in this Clause to effect the termination settlement.

b. In the event of a termination for convenience, all right, title, and interest in all of the Contractor's tangible property is retained by the Contractor, unless DOE exercises its unilateral right in accordance with this Clause to take possession and thereby obtain title to any or all facilities and equipment at the Contractor's Facility site related to the performance of this Contract, or other Contractor property located elsewhere that is solely dedicated to performance of this Contract. If DOE exercises this right, the Contractor shall be compensated in accordance with FAR 52.249-2. Regarding technical data, DOE may take possession of all technical data, including proprietary data and data obtained from subcontractors, licensors, and licensees necessary to operate the facility, pursuant to and subject to DEAR 952.227-75, *Rights in Technical Data*, as well as the designs, construction work in progress, completed facilities, equipment and other property necessary for performance of the work. The *Rights in Technical Data* Clause includes protection for proprietary data. In addition, the Contractor will take all necessary steps to assign permits and authorizations for operations and closure of the facility to DOE or such other party as DOE may designate.

c. DOE's maximum liability under a termination for convenience shall not exceed the amount of funds obligated under Clause H.2 of this Contract.

d. If the termination for convenience is prior to completion of the processing of the minimum order quantities, the Contractor's allowable costs will include the financing cost and those legal, underwriter, third party credit support, and other professional fees directly related to obtaining the financing. Such costs must also be reasonable, allocable, and not conflict with any other cost principle under FAR 31.2. This Clause constitutes an authorized deviation from FAR 31.205-20 as it would pertain to a termination for convenience.

H.26 Assignment of Contract

DOE may assign its rights and responsibilities under this Contract to another DOE prime contractor upon 90 days written notice to the Contractor. In the event of such assignment, DOE shall continue to perform radiological, nuclear, and process safety regulatory oversight responsibilities. The rights and obligations of the Contractor shall not be adversely affected in any material respect as a result of such assignment, including Contractor's rights to receive payments and to be indemnified as provided in this contract.

H.27 Radiological, Nuclear, and Process Safety Regulation

a. The Radiological, Nuclear, and Process Safety regulatory program for this Contract as set forth in Section C.5, Standard 4, *Safety, Health and Environmental Program*, shall implement the requirements of DEAR 952.223-72, *Radiation Protection and Nuclear Criticality* and DEAR 952.223-74, *Nuclear Facility Safety Applicability*.

b. The Director of the DOE Regulatory Unit will have the authority to: 1) stop work if the Contractor fails to provide the required levels of radiological, nuclear, and process safety; 2) authorize the resumption of work upon completion of corrective actions: and 3) authorize start of construction, start of production operations and start of deactivation. The DOE Regulatory Unit's authority for radiological, nuclear and process safety is independent and distinctly severable from the authority of the Contracting Officer under this Contract. The DOE Regulatory Unit intends to utilize pre-established processes and action criteria whenever possible in order to minimize the impact to the Contractor. Notwithstanding the provisions in FAR 52.242-15, the Contractor shall not be entitled to an equitable adjustment in Contract time or price for any additional delay or costs resulting from the issuance of a stop work order hereunder by the DOE Regulatory Unit.

H.28 Uncontrollable Circumstances

a. In the event that an uncontrollable circumstance causes a material change in the amount, cost, or character of the work performed under Part B of this Contract, an equitable adjustment of the Contract price or prices may be made and the Contract modified in writing accordingly. The procedures and the respective rights of the parties regarding such equitable adjustment shall be the same as provided in the Article herein entitled *Changes*. The Contractor shall bear the burden of proof to establish that an upward adjustment in the Contract price is warranted by the circumstances.

b. An uncontrollable circumstance is an act, event, or condition listed in this paragraph (b) which has a material effect on the ability of the Contractor to perform its obligations under Part B of this Contract, or that materially increases or decreases the cost of performing such obligations, but only if such act, event, or condition and its effect 1) is beyond the control of the Contractor and its subcontractors; 2) is not caused by the fault or negligence of the Contractor or its subcontractors; and 3) could not have been reasonably avoided by the Contractor or its subcontractors. The following events and conditions and no others, shall constitute an uncontrollable circumstance if they meet the conditions of the preceding sentence:

1) Act of God, including blizzard, earthquake, explosion, fire, flood, hurricane, lightning, or tornado, but not including reasonably anticipated weather conditions for the geographic area;

2) Act of the public enemy, war, embargo, insurrection, riot, or civil disturbance;

3) Failure of the DOE to provide and maintain those utilities, services, water and power transmission lines to the facility site, which DOE has agreed to provide under other provisions of this Contract, and which are required for and essential to the construction, operation, or deactivation of the facility, excluding temporary interruptions resulting from adverse weather conditions or other failure not due to the fault or negligence of DOE or its other Hanford Site contractors;

4) A change in law after the effective date of the notice to proceed with Part B of this Contract.

(a) "Change in Law" means any of the following:

- The enactment, adoption, promulgation, modification, or repeal of any Federal, State, or local law (excluding tax laws) ordinance, code, rule, regulation or similar legislation relating to environmental, safety or health requirements; or

- The imposition of any material condition on the issuance, modification, or renewal of any permit, license, or approval which establishes requirements making the contract work financially more burdensome than the most stringent requirement in effect on the effective date of notice to proceed with Part B of this Contract.

(b) Change in Law Exclusions. No enactment, adoption, promulgation, or modification of laws, ordinances, codes, rules, regulations or similar requirement shall be considered a "Change in Law" if, as of the effective date of the notice to proceed with Part B, such law, ordinance, code, rule, regulation, or similar requirement was officially proposed by the responsible agency and published in final form in the Federal Register or equivalent Federal, State, or local publication and thereafter becomes effective without further action, or enacted into law or promulgated by the appropriate agency before the effective date of the notice to proceed with Part B, and the comment period with respect to which expired on or before the effective date of the notice to proceed with Part B and any required hearing concluded on or before such date. In no event shall a change in Federal, State, or local tax law be considered a "Change in Law".

5) Denial, failure to issue or renew, or termination, by a regulatory agency, of any environmental permit or other authorization essential to the design, construction, startup, operation, or deactivation of the facility, if such act or event shall not be the result of the willful or negligent action or inaction of the Contractor, or of the failure of the Contractor to exercise prudent business judgement, and if the Contractor has taken all reasonable actions in good faith to mitigate or contest such act or event; and

6) Judicial action by a third party which contests the DOE *National Environmental Policy Act* (NEPA) actions and results in a judicial order enjoining performance of the Contractor's work.

c. The Contractor shall give the Contracting Officer prompt notice of the existence of an uncontrollable circumstance, and shall provide evidence of its diligent efforts to avoid, overcome, mitigate, or remove the consequences of the uncontrollable circumstance.

d. Nothing contained in this Clause shall impair the Government's right, under Clause H.25 and FAR 52.249-2 herein, to terminate this Contract for its convenience upon the occurrence of any of the events specified in this Article.

H.29 Emergency Clause

a. In addition to any other rights set forth in this contract, the DOE/RL Manager or designee shall have the discretion to determine when an emergency situation exists at the Hanford Site affecting site personnel, the public health, safety, the environment, or security. In the event the DOE/RL Manager or designee determines such an emergency exists, the DOE/RL Manager or designee will have the authority to direct any and all activities of the Contractor and subcontractors necessary to respond to or resolve the emergency situation.

b. In the event that the DOE/RL Manager or designee declares an emergency situation, the Contractor, if materially impacted, shall be entitled to recovery of incremental costs solely attributable to the emergency situation provided the emergency situation is not the result of activities for which the Contractor is responsible for under this contract. In such event, the Contractor may submit a proposal for an equitable adjustment under the *Changes* Clause (FAR 52.243-1) of the Contract.

c. The Contractor shall include this Clause in all subcontracts.

H.30 Idle Facilities

a. During Part B, the Contractor may become eligible for "idle facilities" payments when the Contractor has "idle facilities" due solely to DOE's delay in providing waste feed according to the schedule established in Clause H.9, *Ordering and Contract Order Quantities*. To be considered idle, the facility must stand operationally ready to receive and process waste feed and be in compliance with the requirements of this Contract. The Contractor is not eligible for "idle facilities" payments under this Clause until 30 days after either the waste transfer day (WTD) specified in the Contractor's notice under paragraph H.9.g or the date the Contractor is actually ready to receive and process waste, whichever is later. Further, the Contractor is not eligible for "idle facilities" payment under this Clause based on DOE's decision not to order waste treatment services in excess of the minimum order quantities stated in Clause H.9.

b. Nothing contained herein shall be construed in any way to provide relief to the Contractor for idle facilities due to:

1) A facility problem which creates a situation which violates any Federal, State, or local law or regulation;

2) Any cause related directly or indirectly to compliance with the radiological, nuclear and process safety requirements of this Contract;

3) Actions by DOE in carrying out its responsibilities as the regulator of radiological, nuclear, and process safety; or

4) Causes which are due in whole or in part to the fault of the Contractor or its subcontractors.

c. To facilitate payment for idle facilities, the Contractor and DOE will negotiate an advance agreement to establish a daily idle facilities rate which will compensate the Contractor for those allowable costs, including capital costs, which continue during idle time periods. The Contractor shall submit a detailed proposal for the daily idle facilities rate prior to Part B operations.

H.31 Responsibility for DOE-Provided Wastes

a. DOE will retain title to all material in the waste envelopes provided to the Contractor and in all intermediate and final waste products.

b. DOE will not take title or responsibility for the *Wastes the Contractor is Responsible for*, as identified on Figure C–1, *Privatization Functions, Inputs, and Outputs*.

c. The Contractor shall be responsible for all waste envelope materials provided by DOE, and for any releases of such materials prior to product acceptance by DOE.

d. The highly radioactive waste stream will contain quantities of Special Nuclear Materials in low concentrations. In accordance with National Security Policy, the Contractor shall take no action to separate the Special Nuclear Material from the waste envelopes or to divert the Special Nuclear Material in any manner.

e. The Contractor shall protect facilities and waste envelope materials from sabotage or other acts that can result in wide-spread exposure of workers and the public.

f. The Contractor shall treat only DOE-provided wastes in the privatized facilities.

H.32 Land Lease for Contractor's Facility

If the Contractor is authorized to proceed with Part B work, the land for siting the Contractor's waste processing facility will be provided under the Lease Agreement included in Section J, Attachment 7, *U.S. Department of Energy TWRS Privatization Lease*.

H.33 Performance Guarantee

During Part A, the Contractor shall determine its proposed arrangements for the provision of a performance guarantee or equivalent completion assurances for Part B and shall include these arrangements in its *Business and Finance Plan* deliverable in accordance with Standard 6, *Business and Finance Plan of the Contract Scope of Work*.

Section I Contract Clauses

The following clauses are incorporated into the Contract:

Table I–1

Document	Title
DEAR 952.202-1	Definitions (SEP 1991)
FAR 52.203-3	Gratuities (APR 1984)
FAR 52.203-5	Covenant Against Contingent Fees (APR 1984)
FAR 52.203-6	Restrictions on Subcontractor Sales to Government (OCT 1995)
FAR 52.203-7	Anti-Kickback Procedures (OCT 1995)
FAR 52.203-9	Requirement for Certification of Procurement Integrity - Modification (SEP 1995)
FAR 52.203-10	Price or Fee Adjustment for Illegal or Improper Activity - Modified (SEP 1990)
FAR 52.203-12	Limitation on Payments to Influence Certain Federal Transactions (JAN 1990)
DEAR 952.204-2	Security (APR 1984)
FAR 52.204-4	Printing/Copying Double-Sided on Recycled Paper (MAY 1995)
DEAR 952.204-70	Classification (APR 1984)
DEAR 952.204-74	Foreign Ownership, Control, or Influence Over Contractor (APR 1984)
FAR 52.209-6	Protecting the Government's Interest When Subcontracting with Contractors Debarred, Suspended, or Proposed for Debarment (AUG 1995)
FAR 52.242-15	Stop Work Order (AUG 1989)
FAR 52.242-17	Government Delay of Work (APR 1984)
DEAR 952.212-72	Uniform Reporting System (MAY 1987)
FAR 52.215-2	Audit and Records - Negotiation (OCT 1995)
FAR 52.215-23	Price Reduction for Defective Cost or Pricing Data - Modification (OCT 1995)

Table I–1, *continued*	
Document	**Title**
FAR 52.215-25	Subcontractor Cost or Pricing Data - Modifications (OCT 1995)
FAR 52.215-33	Order of Precedence (JAN 1986)
FAR 52.215-40	Notification of Ownership Changes (FEB 1995)
FAR 52.216-22	Indefinite Quantity (APR 1984) (Deviation)
FAR 52.219-8	Utilization of Small, Small Disadvantaged, and Women Owned Small Business Concerns (OCT 1995)
FAR 52.219-9	Small, Small Disadvantaged, and Women Owned Small Business Subcontracting Plan (OCT 1995)
FAR 52.219-16	Liquidated Damages - Small Business Subcontracting Plan (OCT 1995)
FAR 52.222-1	Notice to the Government of Labor Disputes (APR 1984)
FAR 52.222-3	Convict Labor (APR 1984)
FAR 52.222-4	Contract Work Hours and Safety Standards Act - Overtime Compensation (JUL 1995)
FAR 52.222-6	Davis-Bacon Act (FEB 1995)
FAR 52.222-7	Withholding of Funds (FEB 1988)
FAR 52.222-9	Apprentices and Trainees (FEB 1988)
FAR 52.222-10	Compliance with Copeland Act Requirements (FEB 1988)
FAR 52.222-11	Subcontracts (Labor Standards) (FEB 1988)
FAR 52.222-12	Contract Termination -- Debarment (FEB 1988)
FAR 52.222-13	Compliance with Davis-Bacon and Related Act Regulations (FEB 1988)
FAR 52.222-14	Disputes Concerning Labor Standards (FEB 1988)
FAR 52.222-15	Certification of Eligibility (FEB 1988)
FAR 52.222-26	Equal Opportunity (APR 1984)
FAR 52.222-28	Equal Opportunity Preaward Clearance of Subcontracts (APR 1984)
FAR 52.222-35	Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 1984)

Table I–1, *continued*

Document	Title
FAR 52.222-36	Affirmative Action for Handicapped Workers (APR 1984)
FAR 52.222-37	Employment Reports on Special Disabled Veterans and Veterans of Vietnam Era (JAN 1988)
FAR 52.222-41	Service Contract Act of 1965 as Amended (MAY 1989)
FAR 52.222-42	Statement of Equivalent Rates for Federal Hires (MAY 1989)
FAR 52.222-43	Fair Labor Standards Act and Service Contract Act -- Price Adjustment (Multiple Year and Option Contracts) (MAY 1989)
DEAR 952.222-70	Whistleblower Protection for Contractor Employees (JAN 1993)
FAR 52.223-2	Clean Air and Water (APR 1984)
FAR 52.223-3	Hazardous Material Identification and Material Safety Data (NOV 1991)
FAR 52.223-6	Drug Free Workplace (JUL 1995)
FAR 52.223-10	Waste Reduction Program (MAY 1995)
FAR 52.223-14	Toxic Chemical Release Reporting (OCT 1995)
DEAR 952.223-72	Radiation Protection and Nuclear Criticality (APR 1984)
DEAR 952.223-74	Nuclear Facility Safety Applicability (APR 1984)
DEAR 952.223-75	Preservation of Individual Occupational Radiation Exposure Records (APR 1984)
DEAR 952.224-70	Paperwork Reduction Act (APR 1994)
FAR 52.225-11	Restrictions on Certain Foreign Purchases (MAY 1992)
FAR 52.226-1	Utilization of Indian Organizations and Indian-Owned Economic Enterprises (AUG 1991)
FAR 52.227-1	Authorization and Consent (JUL 1995)
FAR 52.227-2	Notice and Assistance Regarding Patent and Copyright Infringement (APR 1984)
FAR 52.227-3	Patent Indemnity (APR 1984)
DEAR 952.227-9	Refund of Royalties (FEB 1995)

Table I–1, *continued*	
Document	**Title**
FAR 52.227-12	Patent Rights - Retention by the Contractor (JUN 1989)
DEAR 952.227-73	Additional Technical Data Requirements (APR 1984)
DEAR 952.227-75	Rights in Technical Data -- Long Form -- Alternative I (APR 1984)
DEAR 952.227-82	Rights to Proposal Data (APR 1984)
FAR 52.228-11	Pledges of Assets (FEB 1990)
FAR 52.229-3	Federal, State, and Local Taxes (JAN 1991)
FAR 52.232-1	Payments (APR 1984)
FAR 52.232-8	Discounts for Prompt Payment (APR 1989)
FAR 52.232-11	Extras (APR 1984)
FAR 52.232-17	Interest (JAN 1991)
FAR 52.232-23	Assignment of Claims (JAN 1986)
FAR 52.232-25	Prompt Payment (MAR 1994)
FAR 52.232-28	Electronic Funds Transfer Payment Methods (APR 1989)
FAR 52.233-1	Disputes - Alternate 1 (OCT 1995)
FAR 52.233-3	Protest After Award (OCT 1995)
FAR 52.236-2	Differing Site Conditions (APR 1984)
FAR 52.236-7	Permits and Responsibilities (NOV 1991)
FAR 52.236-8	Other Contracts (APR 1984)
FAR 52.237-2	Protection of Government Buildings, Equipment, and Vegetation (APR 1984)
FAR 52.242-13	Bankruptcy (JUL 1995)
FAR 52.243-1	Changes -- Fixed-Price - Alternate I (AUG 1987)
FAR 52.244-1	Subcontracts (Fixed-Price Contracts) (FEB 1995)
FAR 52.244-5	Competition in Subcontracting (APR 1984)

Table I–1, *continued*	
Document	**Title**
FAR 52.244-6	Subcontracts for Commercial Items and Commercial Components (OCT 1995)
FAR 52.245-2	Government Property (Fixed-Price Contracts) (DEC 1989)
FAR 52.246-2	Inspection of Supplies - Fixed-Price (JUL 1985)
FAR 52.246-4	Inspection of Services - Fixed-Price (FEB 1992)
FAR 52.246-15	Certification of Conformance (APR 1984)
FAR 52.246-20	Warranty of Services (APR 1984)
FAR 52.249-2	Termination for Convenience of the Government (Fixed-Price) (APR 1984)
FAR 52.249-8	Default (Fixed-Price Supply and Service) (APR 1984)
FAR 52.249-14	Excusable Delays (APR 1984)
DEAR 952.250-70	Nuclear Hazards Indemnity Agreement (JAN 1992)
FAR 52.252-2	Clauses Incorporated by Reference (JUN 1988)
FAR 52.252-6	Authorized Deviations in Clauses (APR 1984)
FAR 52.253-1	Computer Generated Forms (JAN 1991)

The Federal Acquisition Regulations (FAR) and the Department of Energy Acquisition Regulations (DEAR) allow the majority of the above clauses to be incorporated into the Contract by reference; however, six must be incorporated full-text or amplified. The text or amplification of these six clauses is as follows:

FAR 52.203-9 Requirement for Certification of Procurement Integrity - Modification (SEP 1995)

(a) Definitions. The definitions set forth in FAR 3.104-4 are hereby incorporated in this clause.

(b) The Contractor agrees that it will execute the certification set forth in paragraph (c) of this clause when requested by the Contracting Officer in connection with the execution of any modification of this Contract.

(c) Certification. As required in paragraph (b) of this clause, the officer or employee responsible for the modification proposal shall execute the following certification. The certification in paragraph (c)(2) of this clause is not required for a modification which procures commercial items.

CERTIFICATE OF PROCUREMENT INTEGRITY-- MODIFICATION (NOV 1990)

(1) I, [Name of certifier] am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended* (41 USC 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement (contract and modification number).

(2) As required by subsection 27(e)(1)(B) of the Act, I further certify that to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of [Name of Offeror] who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.

(3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity--Modification (Continuation Sheet), ENTER "NONE" IF NONE EXISTS)

_____

[Signature of the officer or employee responsible for the modification proposal and date]

_____

[Typed name of the officer or employee responsible for the modification proposal]

*Subsections 27(a), (b), and (d) are effective on December 1, 1990. Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

(d) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer or bid, may rely upon a one-time certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the Contractor. If a Contractor decides to rely on a certification executed prior to the suspension of Section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that Section 27 has been reinstated. These certifications shall be maintained by the Contractor for a period of 6 years from the date a certifying employee's employment with the company ends or, for an agency, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

(e) The certification required by paragraph (c) of this clause is a material representation of fact upon which reliance will be placed in executing this modification.

FAR 52.216-22 Indefinite Quantity (APR 1984) (Deviation)

(a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this Contract.

(b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."

(c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.

(d) Any order issued during the effective period of this Contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The Contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the Contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this Contract after June 1, 2011.

FAR 52.222-42 Statement of Equivalent Rates for Federal Hires (MAY 1989)

In compliance with the *Service Contract Act of 1965*, as amended, and the regulations of the Secretary of Labor (29 CFR), this clause identifies the classes of service employees expected to be employed under the Contract and states the wages and fringe benefits payable to each if they were employed by the contracting agency subject to the provisions of 5 USC 5341 or 5332.

FAR 52.227-12 Patent Rights - Retention by the Contractor (JUN 1989)

The use of this clause anticipates that a waiver will be requested by the Contractor and granted by DOE. Otherwise, FAR 52-227-13, *Patent Rights - Acquisition by the Government* (JUN 1989) will apply.

DEAR 952.227-75 Rights in Technical Data -- Long Form (APR 1984) (Deviation)

(g) *Limited rights in proprietary data.* Except as may be otherwise specified in this Contract as technical data which are not subject to this paragraph, the Contractor shall, upon written request from the Contracting Officer at any time prior to three years after final payment under this Contract, promptly deliver to the Government any "proprietary data" withheld pursuant to paragraph (e) of the Rights in Technical Data clause of this Contract. The following legend and no other is authorized to be affixed on any "proprietary data" delivered pursuant to this provision, provided the "proprietary data" meets the conditions for initial withholding under paragraph (e) of the Rights in Technical Data clause. The Government will thereafter treat the "proprietary data" in accordance with such legend.

LIMITED RIGHTS LEGEND (APR 1984)

This technical data contains "proprietary data," furnished under "Contract No. -------" with the U.S. Department of Energy (and Purchase Order No. ----- if applicable) which may be duplicated and used by the Government with the express limitations that the "proprietary data" may not be disclosed outside the Government or be used outside of the Contractor's proposed or existing facility for the treatment of Hanford waste without prior permission of the Contractor, except that further disclosure or use may be made solely for the following purposes:

(a) This "proprietary data" may be disclosed for evaluation purposes under the restriction that the "proprietary data" be retained in confidence and not further disclosed;

(b) This "proprietary data" may be disclosed to other Contractors participating in the Government's program of which this Contract is part, for information or use in connection with the work performed under their Contracts and under the restriction that the "proprietary data" be retained in confidence and not be further disclosed; or

(c) This "proprietary data" may be used by the Government or others on its behalf for emergency repair or overhaul work under the restriction that the "proprietary data" be retained in confidence and not be further disclosed.

This legend shall be marked on any reproduction of this data in whole or in part.

(h) *Contract Licensing.* Except as may be otherwise specified in this Contract as technical data not subject to this paragraph, the Contractor agrees that upon written application by DOE, it will grant to the Government and responsible third parties, for purpose of practicing a subject of this Contract, a nonexclusive license in any Contract data which are proprietary data, on terms and conditions reasonable under the circumstances including appropriate provisions for confidentiality; provided, however, the Contractor shall not be obligated to license any such data if the Contractor demonstrates to the satisfaction of the Head of the Agency or designee that:

(1) Such data are not essential to the manufacture or practice of hardware designed or fabricated, or processes developed, under this Contract;

(2) Such data, in the form of results obtained by their use, have a commercially competitive alternative available or readily introducible from one or more other sources;

(3) Such data, in the form of results obtained by their use, are being supplied by the Contractor or its licensees in sufficient quantity and at reasonable prices to satisfy market needs, or the Contractor or its licensees have taken effective steps to so supply such data in the form of results obtained by their use; or

(4) Such data, in the form of results obtained by their use, can be furnished by another firm skilled in the art of manufacturing items or performing processes of the same general type and character necessary to achieve the Contract results.

FAR 52.252-2 Clauses Incorporated by Reference (JUN 1988)

This Contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

FAR 52.252-6 Authorized Deviations in Clauses (APR 1984)

(a) The use in this Solicitation or Contract of any FAR (48 CFR 1) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the clause.

(b) The use in this Solicitation or Contract of any DEAR (48 CFR 952) clause with an authorized deviation is indicated by the addition of "(DEVIATION)" after the name of the regulation.

Section J List of Documents, Exhibits, and Other Attachments

Attachments

Attachment 1 List of Request for Proposals References 1

Attachment 2 Expanded Design Basis for High-Level Waste Processing 7

Attachment 3 Siting Plan/Aerial View of Proposed Contractor Locations 8

Attachment 4 Contractor Vehicles and Equipment 10

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Attachment 6 Tentative Agreement on Tank Waste Remediation System Privatization -- TPA Change Package 12

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Attachment 8 Reserved 33

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Section J List of Documents, Exhibits, and Other Attachments

Attachment 1 List of Request for Proposals References

The following list of references are cited as part of the requirements in this Request for Proposals (RFP). Copies of these documents are available in the U.S. Department of Energy (DOE) Public Reading Room (*see* Section L, Attachment 6, *Availability of Information*). Those marked with an asterisk (*) are also available on the Internet at http://twins.gov:8001/twrs_rfp/homepage.htm

General background information that may also be of interest is presented in Section L, Attachment 6, *Availability of Information*.

a. Hanford Specific Documents

1) DOE/RL-96-0002. Rev. 0. February 1996. *Top-Level Safeguards and Security Requirements for TWRS Privatization*. U.S. Department of Energy, Richland Field Office, Richland, Washington.*

2) DOE/RL-96-0003. Rev. 0. February 1996. *DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*. U.S. Department of Energy, Richland Field Office, Richland, Washington.*

3) DOE/RL-96-0004. Rev. 0. February 1996. *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for TWRS Privatization*. U.S. Department of Energy, Richland Field Office, Richland, Washington.*

4) DOE/RL-96-0005. Rev. 0. February 1996. *Concept of the DOE Regulatory Process for Radiological, Nuclear, and Process Safety for TWRS Privatization Contractors*. U.S. Department of Energy, Richland Field Office, Richland, Washington.*

5) DOE/RL-96-0006. Rev. 0. February 1996. *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for TWRS Privatization Contractors*. U.S. Department of Energy, Richland Field Office, Richland, Washington.*

6) DOE/RL 94-02. Rev. 1. April 1995. *Hanford Emergency Response Plan*. U.S. Department of Energy, Richland Field Office, Richland, Washington.

7) HAMTC. *1992 Agreement between Westinghouse Hanford Company and Hanford Atomic Metal Trades Council*. Richland, Washington.

8) *Hanford Site Stabilization Agreement*. By and between J.A. Jones Construction Services, Morrison-Knudsen Company, Inc., and the Building and Construction Trades Department, AFL-CIO, and its International Unions. September 10, 1984.

9) *Hanford Site Stabilization Transition Agreement*. By and between Kaiser Engineers Hanford and the Building and Construction Trades Department, AFL-CIO, and its International Unions and International Brotherhood of Teamsters. December 18, 1986.

10) *Hanford Site Work Force Restructuring Plan*. U.S. Department of Energy, Richland Operations Office, Richland, Washington. February 6, 1995.

11) HSSWAC. WHC-EP-0063. Rev. 4. January 23, 1995 as modified. *Hanford Site Solid Waste Acceptance Criteria*. Westinghouse Hanford Company, Richland, Washington.

12) *Interim Planning Guidance for Contractor Work Force Restructuring*. Office of Worker and Community Transition, Department of Energy, Washington, D.C. April 5, 1995.

13) OSD-T-151-00007. Rev. H-16. November 20, 1995. *Operating Specification for the 241-AN, AP, AW, AY, AZ, and SY Tank Farms*. Westinghouse Hanford Company, Richland, Washington.

14) OSD-T-151-00017. Rev. D-7. November 20, 1995. *Operating Specifications for Aging Waste Operations in 241-AY and 241-AZ*. Westinghouse Hanford Company, Richland, Washington.

15) OSD-T-151-00031. Rev. B-2. January 4, 1996. *Operating Specifications for Tank Farm Leak Detection and Single Shell Tank Intrusion Detection*. Westinghouse Hanford Company, Richland, Washington.

16) OSR-T-152-00001. Rev. A-0. February 23, 1989. *Double Shell Tank Farms 241-AN, AW, AP, and SY Operational Safety Requirements*. Westinghouse Hanford Company, Richland, Washington.

17) ST 4502. April 18, 1995. *State Waste Discharge Permit*, Washington State Department of Ecology, Olympia, Washington.

18) TPA. 1989 as amended. *Hanford Federal Facility Agreement and Consent Order*. Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

19) WA 7890008967. Rev. 2. August 1995 (as modified). *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste*. Hanford Facility, Washington State Department of Ecology, Olympia, Washington.

20) WHC-SD-ETF-WAC-001. Rev. 0. October 1994. *Acceptance of Feed Streams for Treatment at the LERF/ETF Complex*. Westinghouse Hanford Company, Richland, Washington.

21) WHC-SD-WM-EV-053. Rev. 3. September 25, 1995. Mulkey, C. H. and J. M. Jones. *Double-Shell Tank System Waste Analysis Plan*. Westinghouse Hanford Company, Richland, Washington.

22) WHC-SD-WM-OCD-015. Rev. 1. April 24, 1995. Fowler, K. D. *Tank Farm Waste Transfer Compatibility Program*. Westinghouse Hanford Company, Richland, Washington.

23) WHC-SD-WM-OSR-016. Rev. 0B. April 3, 1995. Heubach II, E. C. *Double-Shell Tanks Interim Operational Safety Requirements*. Westinghouse Hanford Company, Richland, Washington.

24) WHC-SD-W049H-ICD-001. Rev. 1-B. April 14, 1995. R. A. Hildebrand. *200 Area Treated Effluent Disposal Facility Interface Control Document Criteria*. Westinghouse Hanford Company, Richland, Washington.

b. DOE Documents/Orders

1) DEAR. *Department of Energy Acquisition Regulations*, as cited in text.

2) DOE Order 5400.3. February 22, 1989. *Hazardous and Radioactive Mixed Waste Program*. U.S. Department of Energy, Washington, D.C.

3) DOE Order 5633.3B. September 7, 1994. *Control and Accountability of Nuclear Materials*. U.S. Department of Energy, Washington, D.C.

4) DOE Order 5820.2A. September 26, 1988. *Radioactive Waste Management*. U.S. Department of Energy, Washington, D.C.

5) DOE Order 5480.23. April 10, 1992. *Nuclear Safety Analysis Reports*. U.S. Department of Energy, Washington, D.C.

6) DOE Order 5480.29. January 15, 1993. *Employee Concerns Management System*. U.S. Department of Energy, Washington, D.C.

7) QARD. DOE/RW-0333P. Rev. 5. October 2, 1995. *Quality Assurance Requirements and Description for the Civilian Radioactive Waste Management Program (QARD).* U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Washington, D.C.

8) DOE-STD-1027-92. December 1992. *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports.* U.S. Department of Energy, Washington, D.C.

9) DOE-STD-3009-94. July 1994. *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis Reports.* U.S. Department of Energy, Washington, D.C.

10) WAPS. DOE/EM-0093. Rev. 1. May 1995. *Waste Acceptance Product Specifications for Vitrified High Level Waste Forms (WAPS).* U.S. Department of Energy, Office of Environmental Management, Washington, D.C.

11) WASRD. DOE/RW-0351P. Rev. 2. Planned to be issued March 1996. *Waste Acceptance System Requirements Document (WASRD).* U.S. Department of Energy, Office of Civilian Radioactive Waste Management, Washington, D.C.

c. Other Standards

1) CFR. *Code of Federal Regulations,* as cited in text. (Only proposed rules will be available in the DOE Reading Room)

2) ANSI/ASME Standard Y-14 Series. *Drafting Standards.*

3) ANSI Standard N14.5. January 16, 1987. *American National Standard for Radioactive Materials-Leakage Tests on Packages for Shipment.* American National Standards Institute, New York, New York.

4) ANSI/ANS-16.1. April 14, 1986. *Measurement of the Leachability of Solidified Low-Level Radioactive Wastes by a Short-Term Test Procedure.* American National Standards Institute/American Nuclear Society, LaGrange Park, Illinois.

5) ANSI/ANS-55.1. July 28, 1992. *American National Standard for Solid Radioactive Waste Processing System for Light-Water-Cooled Reactor Plants; Appendix B-Testing for Free Liquids in Solidified Matrices*. American National Standards Institute/American Nuclear Society, LaGrange Park, Illinois.

6) ASME. 1995. *Boiler and Pressure Vessel Code*. Section III, Division I, Subsection ND, American Society of Mechanical Engineers, New York, New York.

7) ASTM B553-79. May 25, 1979. *Standard Test Methods for Thermal Cycling of Electroplated Plastics*. American Society for Testing and Materials, Easton, Maryland.

8) ASTM C39-94. November 15, 1994. *Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens*. American Society for Testing and Materials, Easton, Maryland.

9) ASTM C1285-94. October 15, 1994. *Standard Test Methods for Determining Chemical Durability of Nuclear Waste Glasses: Product Consistency Test (PCT)*. American Society for Testing and Materials, Easton, Maryland.

10) ASTM G21-90. October 26, 1990. *Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi*. American Society for Testing and Materials, Easton, Maryland.

11) ASTM G22-76. November 26, 1976. *Standard Practice for Determining Resistance of Plastics to Bacteria*. American Society for Testing and Materials, Easton, Maryland.

12) ASTM G75-95. January 30, 1995. *Standard Test Method for Determination of Slurry Abrasivity (Miller Number) and Slurry Abrasion Response of Materials (SAR Number)*. American Society for Testing and Materials, Easton, Maryland.

13) Greenberg, A. E., L. S. Clesceri, and A. D. Eaton, eds. *Standard Methods for the Examination of Water and Wastewater*. 18th edition, McGraw-Hill, New York.

14) NRC Regulatory Guide 7.4. June 1975. *Leakage Tests on Packages for Shipment of Radioactive Material.* Office of Standards Development, U.S. Nuclear Regulatory Commission, Washington, D.C.

15) NRC. January 1991. *Technical Position on Waste Form*, Rev. 1, Low-Level Waste Management Branch, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

16) NRC. January 1995. *Branch Technical Position on Concentration Averaging and Encapsulation*, Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

17) NUREG/BR-0204. April 1995. *Instructions for Completing NRC's Uniform Low-Level Radioactive Waste Manifest*. U.S. Nuclear Regulatory Commission, Washington, D.C.

18) NUREG-1293. Rev. 1. April 1991. Pittiglio, C. L., Jr. and D. Hedges. *Quality Assurance Guidance for a Low-Level Radioactive Waste Disposal Facility*. Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

19) SW-846, Method 9095. Rev. 0. September 1986. *Paint Filter Liquids Test*. In Test Methods for Evaluating Solid Waste, Volume 1C: Laboratory Manual Physical/Chemical Methods, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, D.C.

20) WAC. WAC173-303. 1995. *Dangerous Waste Regulations*. Washington Administrative Code, as amended.

Attachment 2 Expanded Design Basis for High-Level Waste Processing

The extension of operation of the High-Level Waste (HLW) Immobilization facility requires the ability to process High-Level Waste feed materials with a compositional range outside of that required in Section C, *Statement of Work*, and possibly requires the ability to handle an alternative sized canister. This attachment presents these expanded limits for the purpose of performing a design demonstration as described in Standard 2, *Technical Report*.

a. HLW Feed Expanded Design Basis

The expanded design basis for the HLW feed is the same as Specification 8, *High-Level Waste Envelope Definition*, with the exception of the changes shown in Table J–1.

Table J–1. Expanded Design Basis HLW Feed Limits[1]

Component	g/l	
	Minimum	**Maximum**
Al	0.33	5.3
Cr	0.0	0.42
Fe	1.7	13
Na	1.0	9.2
Ni	0.0	1.0
S	0.0	0.25

Note:

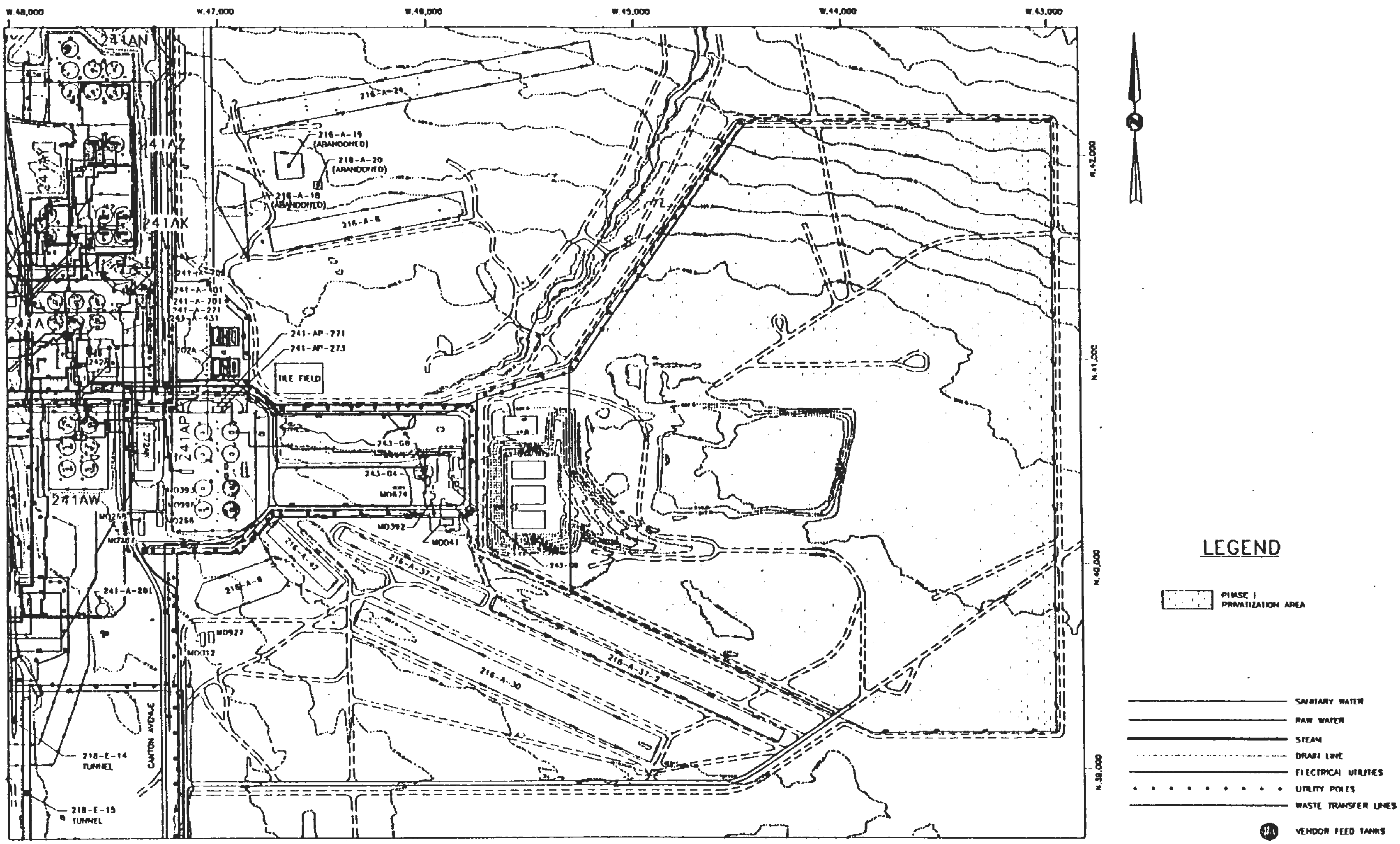
[1] Concentration values given in this table are based on an overall waste concentration of 31 grams of equivalent non-volatile oxides per liter. Concentration values given in this table will vary in direct proportion to actual overall waste concentration of equivalent non-volatile oxides.

b. Alternative HLW Canister Size Requirements

The continued operation of the HLW plant may make it desirable to have the ability to handle larger canisters than the reference canister (0.61 meters in diameter by 3 meters long). For the purpose of the design demonstration required by Standard 2, *Technical Report*, the expanded design basis for canister size is a canister 0.61 meters in diameter by 4.5 meters long.

Attachment 3 Siting Plan/Aerial View of Proposed Contractor Locations

The shaded area on the map shows the general area within which the Contractor's processing facility(ies) will be located. The location of the approximately 6-hectare Contractor site within this area has yet to be identified.



SCALE: 1:7500

0 75 150 300 450 600

1 cm = 75 meters

NOTE: THIS MAP IS TO BE USED FOR REFERENCE PURPOSES ONLY. DO NOT USE THIS MAP FOR CONSTRUCTION PURPOSES.	ICF Kaiser Hanford Company Mapping Services	CADFILE: ZRBT0581 DATE: 1-18-96	CUSTOMER: JEFF VOUGD DRAWN BY: RAFAEL TORRES	TITLE: TWRS PRIVATIZATION PHASE 1

J-9

9613178.0162

Attachment 4 Contractor Vehicles and Equipment

The following conditions apply when Contractor's vehicles or equipment are on the Hanford Site but outside of the Contractor's designated site:

a. Each Contractor-provided vehicle shall show the Contractor's name so that it is clearly visible and shall at all times display a valid state license plate and, when applicable, safety inspection sticker. The Contractor will comply with all applicable Federal, State, and local laws with respect to Contractor vehicle and equipment ownership and movement. DOE reserves the right to restrict use of roadways when necessary for security, maintenance, or other operational purposes.

b. Vehicles and equipment will be operated or transported on existing roads unless specific approval for off-road movement has been obtained in advance from the Contracting Officer (CO) or designee. Such off-road approval is not required for vehicle movement within the Contractor's designated facility site. Gross vehicle weight shall not exceed 600 pounds per inch of total tire width (total gross vehicle weight not to exceed 80,000 pounds) for travel on existing roads.

c. During high fire hazard periods, the Contractor shall adhere to all restrictions for off-road travel which include, but are not limited to, requiring vehicles to carry fire extinguishers, shovels, and radio communications. DOE reserves the right to ban all off-road travel during extreme fire hazard periods.

d. Under no conditions shall the Contractor operate or move cranes, hoists or similar equipment within 20 feet of overhead electrical conductors, guy wires, or substations, unless prior authorization for such operations is obtained from the CO, and full details of the method of equipment operations is given. Authorization from the CO or designee shall also be obtained when transporting materials, machinery, or other equipment which establishes a height exceeding 14 feet from the road and/or ground surface.

e. An *Oversize Load* permit is required when the vehicle or load exceeds 8 feet 6 inches in width, 14 feet in height, or 40 feet in length (single unit); 48 feet (single trailing unit). Contact DOE to obtain the permit.

f. Heavy equipment will not be allowed to cross existing paved roadways unless such roadway is protected by rubber tires or other adequate protection such as heavy planking. Movement of heavy equipment equipped with crawler-type treads on existing paved surfaces is forbidden and such equipment must be transported to the worksite on rubber-tire trailers. Upon completion of the work, the equipment shall be promptly removed from the worksite.

Attachment 5 Contractor Required Insurance

1.	Workers' Compensation and Employers' Liability	Statutory
2.	Commercial General Liability	$5M per Occurrence or Claims Made and $10M Aggregate
3.	Commercial Automobile	$2M per Occurrence and $2M Aggregate
4.	Excess Liability	$20M per Occurrence or Claims Made and $40M Aggregate
5.	Directors' and Officers' Liability	$20M
6.	Commercial Property	At Replacement Cost
7.	Boiler and Machinery	$2M
8.	Pollution Liability Insurance	$25M per Occurrence or Claims Made and $50M Aggregate

Attachment 6 Tentative Agreement on Tank Waste Remediation System Privatization -- TPA Change Package

TENTATIVE AGREEMENT ON TANK WASTE REMEDIATION SYSTEM PRIVATIZATION

U.S. Department of Energy
U.S. Environmental Protection Agency
Washington State Department of Ecology

January 1996

Tri-Party Agreement

Tank Waste Remediation Systems Privatization

U.S. Department of Energy • U.S. Environmental Protection Agency • Washington State Department of Ecology

December 1995

The U.S. Department of Energy (USDOE) and the Washington State Department of Ecology are asking for public comments on the proposed Tri-Party Agreement change package. A 45-day public comment period will run from January 2 to February 15, 1996. USDOE recently completed an analysis of privatization (contracting with private companies) options for cleanup of the tank waste. Under the privatization approach, private companies will contract with USDOE to treat Hanford's tank wastes and return a treated product to USDOE. Privatization anticipates that multiple contracts will be awarded to encourage innovation and competition between contractors. The selected contractors will invest private funds to design, construct, and operate the necessary facilities to meet the needs of Tank Waste Remediation Systems (TWRS). USDOE will define and monitor the requirements to be met by selected contractors in order for the treated tank waste to be returned to USDOE control after treatment. USDOE will offer incentives to the contractors to reduce immobilized waste volumes and to optimize waste loading, which should reduce the costs of future processing, storage, and disposal.

The privatization strategy is to be accomplished in two phases. The first phase will demonstrate the technical and business viability of using privatized facilities to treat and immobilize Hanford tank wastes. The Phase One treament facility will be capable of treating six to 13 percent of the low-activity tank wastes. Phase Two, the full-scale production facility, would be capable of processing and immobilizing the remaining waste on a schedule that will accommodate removing waste from single-shell tanks by the year 2018.

BACKGROUND

In December 1991, the USDOE established TWRS to ensure that radioactive tank wastes in the large underground storage tanks are immobilized in a safe and cost-effective manner. The TWRS mission is to conceptualize, develop, design, construct, and operate the physical system and technologies necessary to retrieve waste from Hanford's large underground waste tanks located in the Hanford Site's 200 East and 200 West areas, and convert that waste into a solid form suitable for ultimate disposal.

ISSUE

The privatization of programs and facilities that will pretreat and immobilize low activity waste will be accomplished via one of two pathways. The primary pathway calls for two or more facilities owned, built and operated by two or more independent contractors. This pathway is known as the contractor-owned, contractor-operated path.

The alternative path is driven by milestones which serve as a fall-back technical and regulatory path for privatization of the TWRS program. These milestones are not enforceable as long as USDOE is making progress on the primary path. Should USDOE fail to make progress along the primary path, the alternate path milestones will become enforceable. The ability to meet major Tri-Party Agreement milestones is a factor for acceptability in privatizing the pretreatment and immobilization of low activity waste.

It is recognized that to be able to take advantage of the commercial technologies available, the methods for processing the waste should not be restricted to vitrification. However, before employing any technology other than vitrification, the performing contractor(s) will prove that the alternate technology meets or exceeds the performance standards applicable to vitrification. Such demonstration will be subject to stakeholder public involvement and must represent an opportunity to reduce costs and accelerate schedules. This change will not affect the major milestones for the processing of tank waste by 2028 or delay completion of the Single Shell Tank Retrieval major milestone. Using a technology other than vitrification may affect Single Shell Tank retrieval interim milestones, requiring adjustment to the sequencing of tank retrieval.

TRI-PARTY AGREEMENT CHANGES

The changes would recognize USDOE's plans for private financing and operation of tank waste treatment facilities. Key dates in the new timelines include:

Jan 1997	Award multiple private contracts
July 1998	Issue notice to proceed with selected contractors
Dec 2002	Startup of actual treatment

All low activity wastes are to be treated by 2024, four years earlier than called for in the current milestone.

High Level Waste pretreatment and vitrification may also be included in the privatization contracts. A decision on including or not including, High Level Waste into this initiative will be based on vendor interest.

USDOE has released a draft Request for Proposal which specifies dates for completing work earlier than the Tri-Party Agreement requires. Ecology fully supports USDOE in its efforts to complete work earlier than required. The dates specified in the Tri-Party Agreement do not prevent USDOE from completing the required work early.

HOW YOU CAN GET INVOLVED

Ecology and USDOE are asking for public comments on the proposed Tri-Party Agreement change package. A 45-day comment period will run January 2 to February 15, 1996.

Public meetings are tentatively scheduled for:

January 30 in Portland
February 1 in Richland

Negotiators from Ecology and USDOE are also available upon request for presentations to interested groups and organizations.

Copies of the Change Package are available for review and copying at the following Information Repositories or by calling Hanford Cleanup toll-free at 1-800-321-2008.

Portland
Portland State University
Branford Price Millar Library
Science and Engineering Floor
SW Harrison and Park
(503) 725-3690

Seattle
University of Washington
Suzzallo Library
Government Publications Room
(206) 543-4664

Richland
Washington State University Tri-Cities
Public Reading Room, Room 130 West
100 Sprout Road
(509) 376-8583

Spokane
Gonzaga University
Foley Center
East 502 Boone
(509) 528-4220 ext. 3829

For more information, contact Toby Michelena, Ecology, (360) 407-7144, or Carolyn Haass, USDOE, (509) 372-2731.

The Tri-Party Agreement agencies are equal opportunity agencies and do not discriminate on the basis of race, creed, color, disability, age, religion, national origin, sex, marital status, disabled veteran's status, Vietnam Era veteran's status, or sexual orientation.

If you have special accommodation needs or require this material in an alternative format, please contact Michelle Davis at (360) 407-7126 (Voice) or (360) 407-6206 (TDD).

Printed on Recycled Paper

Department of Energy
Richland Field Office
P.O. Box 550
Richland, Washington 99352

DEC 22 1995

95-RTI-135

Ms. Mary Riveland, Director
State of Washington
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

Dear Ms. Riveland:

COMPLETION OF NEGOTIATIONS OF HANFORD FEDERAL FACILITY AGREEMENT AND CONSENT ORDER (TRI-PARTY AGREEMENT) MILESTONE SERIES M-50-00, M-51-00, AND M-60-00

Negotiations with the U.S. Department of Energy, Richland Operations Office (RL) and the Washington State Department of Ecology (Ecology) on Tri-Party Agreement Milestone Series M-50-00, M-51-00, and M-60-00 were completed on December 15, 1995. The negotiated changes to the Tri-Party Agreement Milestones are intended to allow RL to proceed with the planned Privatization Initiative of the pretreatment and immobilization functions of Tank Waste Remediation System (TWRS) Program.

It should be noted that there will be no change to the Tri-Party Agreement Milestone Series M-51-00 for high-level waste vitrification as the existing schedules can be met under the current planned program. Attached are the Tri-Party Milestones Series M-50-00 and M-60-00 Change Packages for your review and concurrence.

If you have any questions concerning the negotiated changes, please contact Mr. William J. Taylor of my staff on (509) 372-3864.

Sincerely,

John D. Wagoner
Manager

Attachments

cc: R. Stanley, Ecology
T. Michelena, Ecology
D. Sherwood, EPA
L. Arnold, WHC
K. Glozer, DOE-HQ
S. Cowan, DOE-HQ
M. Hunemuller, DOE-HQ

Change Number	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date
M-50-95-01		12/15/95

Originator
W. Taylor, C. Haass, D. Jackson, T. Michelena
R. Stanley, T. Tebb, M. Stevenson

Phone
(509) 372-3864

Class of Change
[X] I - Signatories [ ] II - Executive Manager [ ] III - Project Manager

Change Title Tank Waste Pretreatment Privatization

Description/Justification of Change

In September 1991, the U.S. Department of Energy (DOE) established the Tank Waste Remediation System (TWRS) Program to ensure that radioactive tank wastes in the large underground storage tanks at Hanford are stored, treated, and immobilization in a safe, environmentally sound, and cost-effective manner. The TWRS mission is to conceptualize, develop, design, construct, and operate the physical system and technologies necessary to retrieve the tank waste from the tanks and convert it into a solid suitable for ultimate disposal. The DOE recently completed an analysis of Privatization options for cleanup of these tank wastes. Using this privatization approach, private companies will treat the highly radioactive tank wastes currently stored in tanks at Hanford and return the treated tank waste products to DOE.

In order to integrate the privatization process, the Low Activity Waste (LAW) pretreatment process will be included with the LAW vitrification process. Therefore, the work associated with the LAW pretreatment program is deleted from this milestone and included in the LAW vitrification milestone (M-60).

(Continued on page 2)

Impact of Change

This Change will alter pretreatment interim milestones, however it will not impact the complete processing of Hanford Tank Waste Major Milestones (M-50-00, M-51-00 or M-60-00).

Affected Documents

Hanford Federal Facility Agreement and Consent Order, Action Plan, Appendix D.

Approvals

DOE	Date	___ Approved	___ Disapproved
EPA	Date	___ Approved	___ Disapproved
Ecology	Date	___ Approved	___ Disapproved

Change Number M-50-95-01

Description/Justification of Change (continued)

he existing M-50 TPA milestones and target date(s) to be deleted are listed below:

Number:	Milestones:	Due Date:
M-50-01	Start Construction of LLW Pretreatment Facility.	November 1998
M-50-01-T02	Submit conceptual Design and Initiate Definitive Design of LLW Pretreatment Facility	December 1996
M-50-02	Start Hot Operations of LLW Pretreatment facility to remove Cesium and Strontium	December 2004
M-50-02-T01	Complete Construction of LLW Pretreatment Facility	December 2003

Change Number	Federal Facility Agreement and Consent Order Change Control Form Do not use blue ink. Type or print using black ink.	Date
M-60-95-03		12/15/95

Originator
W. Taylor, C. Haass, D. Jackson, T. Michelena
R. Stanley, T. Tebb, M. Stevenson

Phone
(509) 372-3864

Class of Change
[X] I - Signatories [ ] II - Executive Manager [ ] III - Project Manager

Change Title Privatization of Low Activity Waste Pretreatment and Immobilization

Description/Justification of Change In December 1991, the U.S. Department of Energy (DOE) established the Tank Waste Remediation System (TWRS) Program to ensure that radioactive and hazardous tank wastes in the large underground storage tanks at Hanford are stored, treated, and immobilized in a safe, environmentally sound, and cost-effective manner in compliance with applicable federal and State Law. The TWRS mission is to conceptualize, develop, design, construct, and operate the physical systems and technologies necessary to retrieve waste from Hanford's 177 large underground waste tanks located at the Hanford Site's 200 East and 200 West areas, and convert that waste into a solid suitable for ultimate disposal.

DOE recently completed an analysis of Privatization options for cleanup of the wastes identified above (hereinafter referred to as "tank waste"). Under the Privatization approach, private companies under contract with DOE, will treat Hanford's tank wastes and return a treated product to DOE. Using this Privatization approach,

(Continued on page 2)

Impact of Change

This change will not delay completion of the major milestones for the processing of tank waste (M-50-00, M-51-00, M-60-00, and M-61-00 if applicable). This change will not delay completion of Single Shell Tank Retrieval major milestone (M-45-00), however, changes in the sequencing and rate of Single-Shell Tank Waste Retrieval (M-45-00 interim milestones) may result.

Affected Documents

Hanford Federal Facility Agreement and Consent Order, Action Plan, Appendix D.

Approvals

DOE	Date	___ Approved	___ Disapproved
EPA	Date	___ Approved	___ Disapproved
Ecology	Date	___ Approved	___ Disapproved

Description/Justification of Change (continued)

multiple contracts will be awarded, and competition and innovation between contractors will be encouraged. The selected contractors will invest non-government funds to design, construct, and operate the necessary facilities to meet the needs of TWRS. DOE will define and monitor treated tank waste acceptance specifications, i.e., the requirements to be met by selected contractors in order for the treated tank waste to be returned to DOE control after treatment by the contractors. Incentives will be offered by DOE to the contractors to reduce immobilized waste volumes and to optimize waste loading, which in turn should reduce the costs of future processing, storage and disposal. The costs associated with retrieval and treatment of tank wastes under this initiative will ultimately be borne by DOE in the form of payments for waste treatment services performed by contractors after the privatized facility(s) become operational.

The Privatization of programs and facilities that will pretreat and immobilize low activity waste (LAW) will be accomplished via one of two pathways. The primary pathway, and that preferred by DOE, calls for two or more facilities owned, built and operated by two or more independent contractors. This pathway is known as the contractor owned, contractor operated (COCO) path. Milestones established for the primary path are enforceable under the terms of the Hanford Federal Facility Agreement and Consent Order (Agreement).

The alternative path forward, or "alternate path" will be undertaken in the event that the primary path is determined to be unfeasible by DOE. This path is controlled by milestones identified here which serve as a fall back technical and regulatory path for Privatization of the TWRS program. These milestones become enforceable only in the event that DOE is not maintaining adequate progress and elects to pursue the alternate path rather than the primary path. Should DOE elect to pursue the alternate path, these milestones will automatically become enforceable under the terms of the Agreement.

If a decision is made to change from the primary path to the alternate path, it will be made using several criteria. These criteria will be dependent upon the phase of procurement. The criteria used may include, but need not be limited to:

Request for proposal (draft and final):

* Ability to establish product specifications
* Delays in producing necessary documents
* Ability to establish nuclear safety standards

Selection of design only contractors:

* Insufficient potential contractor interest
* Excessive costs for bids
* Delays in selecting contractors
* Schedule Delays which make meeting overall program schedule impossible

Down selection of contractors:

* Unresponsive technical proposals
* Excessive cost proposals
* Unresponsive schedules for completing work
* Inability to negotiate contracts in a timely manner

Description/Justification of Change (continued)

Any decision to change from the primary path to the alternate path will be made by DOE, which will give Ecology written notice of such a decision. DOE will update Ecology on a bi-monthly basis on the status of the primary path (this update will consist of delivery of a copy of the "TWRS Privatization Action Plan Bi-Monthly Report" to the Director of Ecology[1]). Should Ecology determine that compliance with the primary path is unlikely, it will inform DOE of such an opinion. DOE will respond within 30 days as to whether a change from the primary to the alternate path is necessary. If DOE determines that a change is not necessary, it will provide Ecology with a written rational for continuing with the primary path. However, as stated above, any decision made will be exclusively that of DOE, and it is understood that such a decision shall not be disputed. Ecology's acknowledgement of DOE's decision making authority with respect to changing paths, and its agreement not to dispute such a decision, shall not be interpreted as a waiver of its right to submit a change request or any other right to which Ecology is entitled under the Agreement.

The ability to meet Agreement milestones is a criterion for acceptability in privatizing the pretreatment and immobilization of LAW. It is recognized that in order to be able to take advantage of the commercial technical capabilities available, the potential methods for processing of the tank waste should not be restricted solely to vitrification. Accordingly, the term LAW immobilization is utilized here rather than Low Level Waste (LLW) vitrification, and contractor(s) may submit alternatives to vitrification for DOE's consideration. However, prior to employing any technology other than vitrification for tank waste treatment, the performing contractor(s) will demonstrate to Ecology that the alternate technology meets or exceeds the waste treatment performance standards applicable to vitrification. Such demonstration will be subject to the Agreement Public Involvement Process, and represent an opportunity to reduce costs and accelerate schedules.

The M-60 series milestones and target date(s) deleted by this action are listed below:

Number	Milestone:	Due Date:
M-60-03	Submit conceptual design and initiate definitive design of the LLW vitrification facility.	November 1996
M-60-04	Initiate construction of the LLW vitrification facility	December 1997
M-60-05	Initiate hot operations of the LLW vitrification facility.	June 2005
M-60-05-T01	Complete construction of the LLW vitrification facility.	December 2003

[1] DOE shall be free to edit the identified report prior to providing Ecology a copy but only to preclude disclosure of information which DOE is prohibited from disclosing by law.

Description/Justification of Change (continued)

RIMARY PATH

Primary path major and interim milestones for TWRS Privatization of pretreatment and immobilization of LAW (M-60) established by this change request are as follows:

Number	Milestone	Due Date
M-60-00	Complete pretreatment and immobilization of Hanford Low Activity tank waste (LAW).	December 2024
M-60-06	Issue Draft Request for Proposals (RFP) for Phase I Privatization of LAW pretreatment and immobilization.	January 1996
M-60-07	Issue Final Request for Proposals (RFP) for Phase I Privatization of LAW pretreatment and immobilization.	June 1996
M-60-08	Award two (2) or more design only Privatization contract(s) for Phase I LAW pretreatment and immobilization.	January 1997
M-60-09	DOE will take delivery of and transmit to the Department of Ecology, a report prepared by an independent contractor, that identifies reasonable and practical contracting mechanisms (if any) that would facilitate acceleration of the start of hot operations of a LAW pretreatment and immobilization facility under the alternate path to Privatization.[2]	30 Days after completion of M-60-08
M-60-10	Select two (2) COCO contractors and issue DOE signed authorizations to proceed with part B (as defined in the Request for Proposal [RFP]) or subsequently negotiated contracts) work for LAW pretreatment and immobilization.	July 1998
M-60-11	Start of construction for two (2) Phase I LAW pretreatment and immobilization facilities. Start of construction occurs when the Department of Energy issues a notice to proceed and its contractor commences placement of first structural concrete on the projects primary facility.	TBD[3]

2 The Washington Department of Ecology (Ecology) will prepare the scope of work for this undertaking for DOE's concurrence. Ecology and DOE will jointly identify suitable potential contractors. DOE will provide funding for contract erformance, and make the final contractor selection from the suitable contractors list.

3 Within thirty (30) days of completion of Milestone M-60-10, DOE will notify Ecology in writing of the start of facility construction date specified in the contract(s).

Description/Justification of Change (continued)

M-60-12	Start hot operations of two (2) COCO Phase I LAW pretreatment and immobilization facilities.	December 2002
M-60-13	Initiate negotiations on Phase II LAW pretreatment and immobilization milestone. The parties anticipate completion of these negotiations within six (6) months.	December 2003

ALTERNATE PATH

The following milestones are incorporated into the Agreement Action Plan. However, they will only become enforceable if DOE elects to abandon the primary path set forth above, and shall be automatically deleted from the Action Plan upon DOE's completion of primary path milestone M-60-10. This milestone shall be deemed completed when DOE issues authorizations to proceed with part B work for LAW pretreatment and immobilization. Upon DOE's election to abandon the primary path and thereby become subject to the requirements of the alternate path milestones set forth below (or as may be amended under the provisions of the Agreement), the primary path milestones set forth above (or as may be amended or added under the provisions of the Agreement), shall automatically be deleted from the Agreement Action Plan and become unenforceable under the provisions of the Agreement or any other legal mechanism.

Number	Description	Due Date
M-61-00	Complete pretreatment and immobilization of Hanford low activity waste (LAW).	December 2028
M-61-01	Start construction of Phase I LAW pretreatment and immobilization facility. Start of construction occurs when the Department of Energy issues a notice to proceed and its contractor commences placement of first structural concrete on the projects primary facility.	TBD[4]
M-61-02	Initiate Hot Operations of Phase I LAW Pretreatment and Immobilization Facility.	December 2003
M-61-03	Initiate negotiations on Phase II LAW pretreatment and immobilization milestone. The parties anticipate completion of these negotiations within six (6) months.	December 2004

LIMITED WAIVER

For the purposes of the change request package consisting of this change request form M-60-95-03, and change request forms M-50-95-01 and M-51-95-02 only, and not as a precedent for any further change requests, the Department of Energy hereby waives the provisions of Paragraph 145 F (procurement Force Majeure) of the Hanford Federal Facility Agreement and Consent Order as applicable to milestones M-60-06, M-60-07, M-60-08, M-60-09 and M-60-10 until the completion of M-60-10.

---

4 Within thirty (30) days of award of an alternate path contract, DOE will notify Ecology in writing of the start of facility construction date specified in the contract.

Description/Justification of Change (continued)

te: Milestones regarding interim storage and disposal will need to be added pursuant to the M-33 negotiations as these are requirements for the new M&I Contractor as opposed to the Private Contractor.

Attachment 7 U.S. Department of Energy TWRS Privatization Lease

A lease in the following form shall be executed between DOE and the Contractor, if the Contractor is authorized to perform Part B work.

THIS LEASE is entered into this ___ day of _____, 199__, between the UNITED STATES OF AMERICA, acting by and through the U.S. Department of Energy (DOE), hereinafter referred to as the "Government" or "Lessor," and _____, hereinafter referred to as the "Lessee." As used in this Lease, the terms "Government" and "Lessor" include any duly authorized successor of DOE.

The purpose of this Lease is to establish an area on the Hanford Site for the Lessee to treat and immobilize, on a demonstration scale, radioactive waste material that is currently stored in underground tanks on the Government's Hanford Site, under Contract No. _____ executed by the Lessor and Lessee (hereinafter referred to as the "Contract"). The terms and conditions of the Contract and any supplements or revisions thereto are in addition to the requirements of this Lease. In the event of inconsistency between the terms of this lease and the terms of the Contract, the terms of the Contract shall take precedence.

WITNESSETH:

1. **Leased Property.** The Secretary of Energy, under the authority of Section 161(g) of the Atomic Energy Act of 1954, (Public Law 83-703), having determined that lease of the following portion of the Government's Hanford Site is important to the functions of the Lessor hereby leases to the Lessee, upon the terms and conditions herein set forth, the following described real property, hereinafter referred to as the "Leased Property":

> (The leased property will be a 6 hectare site located within the South ½ of Section 1 or the North ½ of Section 12, Township 12 North, Range 26 East, W.M., Benton County, Washington along with an associated easement for construction, operation and maintaining lessee's waste transfer line from the double-shell waste feed tank to the leased premises.)

[The specific legal description of the leased property will be included in the lease prior to execution.]

2. **Term.** The term of this Lease will commence on the date the lessee is authorized to proceed with Part B work under the Contract and end upon completion or termination of the Contract or such earlier date as the parties may mutually agree upon in writing.

3. **Local Government Representative.** For purposes of this Lease, the Lessor's Local Government Representative is the Contracting Officer for the Contract. The address of the Contracting Officer is:

U.S. Department of Energy
Richland Operations Office
Procurement Services Division, MSIN A7-80
Mr. Peter Rasmussen
P.O. Box 550 or 825 Jadwin Avenue
Richland, Washington 99352

4. **Rental Rate.** The Leased Property shall be provided to the Lessee at no rental payment being due to the Government.

5. **Use of Leased Property.** The Leased Property shall be occupied and used by the Lessee solely to accomplish the work to be performed by the Lessee specified in the Contract.

6. **Assignment and Subletting.** Neither this Lease nor any right hereunder may be assigned, transferred, encumbered or sublet in whole or in part by Lessee, by operation of law or otherwise, without the prior written consent of the Lessor's Local Government Representative. The written consent by Lessor to any assignment or subletting shall not in any manner be construed to relieve Lessee from obtaining Lessor's express written consent to any other or further assignment or subletting.

This Lease may be assigned by Lessor upon 90 days written notice to Lessee. In the event of such assignment, the rights and obligations of the Lessee shall not be adversely affected in any material respect as a result of such assignment.

7. **Existing and Future Easements and Rights of Way.** This Lease is subject to all outstanding easements and rights of way over, across, in, and upon the Leased Property, or any portion thereof, and to the right of the Government to grant such additional easements and rights of way over, across, in, and upon the Leased Property as the Government shall determine to be in the public interest, provided, that no such outstanding easements and rights of way unreasonably interfere with, and any such additional easement or right of way shall not unreasonably interfere with Lessee's right of peaceful occupancy and quiet enjoyment of the Leased Property for the uses and purposes described in Section 5 above. The Government shall notify Lessee of any easement activities that could impact Lessee's operations. There is hereby reserved to the holders of such easements and rights of way as are presently outstanding or which may hereafter be granted, to any workers officially engaged in the construction, installation, maintenance, operation, repair, or replacement of facilities located thereon, and to any Federal, state, or local official engaged in the official inspection thereof, such reasonable rights of ingress and egress over the Leased Property as shall be necessary for the performance of their duties with regard to such facilities.

8. **Access by Lessor.** The Government shall have access to the Leased Property at all reasonable times for any purposes not inconsistent with the quiet enjoyment thereof by Lessee, including, but not limited to, the purpose of inspection. Wherever practicable, the Government shall give advance notice of such inspection to Lessee and offer the Lessee the opportunity to accompany the Local Government Representative or his designee.

The Government also reserves unto itself, its contractors and its assigns the right: 1) to use, maintain, repair, remove and replace existing roads, railroads, water lines, power lines and conduits, and communication lines and conduits, and other facilities that may touch or intersect the Leased Property; 2) to construct, use, maintain, repair, remove, and replace railroad tracks, water lines, natural gas and steam lines, canals, power lines and conduits, communication lines and conduits, and other facilities over, under, across and upon the Leased Property; and 3) to place, use, maintain, repair, remove, and replace monitoring equipment such as fire control and fire alarm facilities over, under, across, and upon the Leased Property. Neither Lessor's nor its contractors' or assigns' access to and use of the Leased Property will unreasonably interfere with Lessee's operations on or with respect to the Leased Property.

9. **Government Non-liability/Lessee Liability.** Except as otherwise provided in the Contract, Lessee shall indemnify and save and hold harmless the Government, its contractors and subcontractors at any tier, its officers, agents, and employees, and the officers, agents and employees of the Government's contractors and subcontractors (a) for and from any and all liability or claims for damages to property or injuries to, or death of, persons to the extent such liability or claims may arise from or be incident to the use and occupancy of the Leased Property by Lessee or Lessee's subcontractors or (b) for damages to the property or injuries to the person of Lessee or any subcontractor or damages to the property or injuries to or death of the person of Lessee's or subcontractors' officers, agents, servants, employees, or others who may be on said Leased Property at their invitation or the invitation of any one of them, resulting from use and occupancy of the Leased Property, except to the extent such damage or injury was caused by or arose from the actions or omissions of the Government, its contractors or subcontractors (other than Lessee and its subcontractors).

To the extent necessary to effectuate the foregoing indemnification obligation, Lessee specifically waives any and all immunity provided by any applicable industrial insurance or workers' compensation act (including the *Washington Industrial Insurance Act*, RCW Title 51) and agrees to release, indemnify, and save harmless the Government, its Hanford Site contractors, and their agents, employees, and representatives from liability for any action brought by or on behalf of the Lessee's own employees or agents or the agents or employees of any of the Lessee's subcontractors at any tier.

Lessee further covenants that any property of the Government damaged or destroyed by Lessee or sublessee incident to its use and occupancy of the Leased Property shall be promptly repaired or replaced by Lessee to the condition such property was in prior to such damage or destruction and to the satisfaction of the Local Government Representative, or in lieu of such repair or replacement shall, if so required by the said Representative, pay to the Government money in an amount sufficient to compensate for the loss sustained by the Government by reason of the destruction of the property.

10. **Taxes.** Lessee is responsible for paying all federal, state, and local taxes affecting Lessee's operations on the Leased Property including but not limited to real and personal property taxes, leasehold taxes, business and occupational taxes, and income taxes.

11. **Notices.** No notice, order, direction, determination, requirement, consent, or approval under this Lease shall be of any effect unless in writing. All notices to Lessor required under this Lease shall be addressed to Lessor's Local Government Representative or his designee at the addresses thereof specified in this Lease or at such other addresses as may from time to time be agreed upon by the parties hereto.

12. **Approval of Equipment Owned by Others.** Lessee shall assume all responsibility for ensuring that all equipment installed by Lessee or its subcontractors on the Leased Property is operated in conformance with the terms of this Lease. All obligations imposed by this Lease on the Lessee for compliance with applicable laws and regulations and for the indemnification of the Government, and its authorized representatives shall apply with equal force to Lessee in regard to the operation of any equipment installed by Lessee or its subcontractors on the Leased Property, regardless of ownership, unless that equipment is installed by or on behalf of the Lessor or its authorized representatives.

13. **Interference with Other Operation - Emergency Situation.** It is understood by Lessee that radio-electronic type operations of the Government and its operating contractors which are now located or hereinafter placed in the vicinity of the Leased Property or elsewhere within the Hanford Site, are, or will be, maintained and conducted in the interests of the national defense and security and that it is of vital importance that these installations remain operable at all times. Therefore, should Lessee's activities or equipment at any time or for any reason cause interference with such radio-electronic type operations to the extent of making their signals unintelligible, and Lessee or its representatives are not immediately available to take corrective action, Lessor shall have the right to, and Lessee hereby authorizes Lessor to, enter onto the Leased Property and de-energize the offending station or stations. This right will be exercised only in emergency situations and Lessee shall be given such advance notice as and if circumstances permit, and in any event, Lessee shall be notified as soon as practicable after the de-energizing has been accomplished and shall be allowed to resume operation of the offending station or stations as soon as corrective measures have been effected to Lessor's satisfaction. The Lessee shall hold the Government and its authorized representatives harmless from any and all claims, cost or liabilities of any nature arising out of any action taken under the authority reserved in this section.

14. **Environmental Indemnity.** The Lessee, by acceptance of this Lease agrees that it shall indemnify and save harmless the Lessor, contractors of Lessor, and authorized representatives of Lessor, from any claims, costs (including, but not limited to, reasonable attorneys' fees, consultant fees and/or expert witness fees) or liabilities (including, but not limited to, sums paid in settlement of claims) which arise during or after the term of the lease from or in connection with the presence or suspected presence of hazardous substances in the air, soil, water, groundwater or soil vapor on or under the facilities or the Leased Property which the Lessee is allowed to use under this Lease, or arising from or in connection with the presence or suspected presence of hazardous substances which have been released from the facilities or Leased Property, unless hazardous substances are present solely as a result of the actions of the Government or its authorized representatives or unless the DOE has agreed to accept responsibility for such liability under the Pre-Existing Conditions clause or any other provision of the Contract. As used in this Lease, the term "hazardous substance" means any hazardous or toxic substance, material, or waste which is or becomes regulated by any local governmental authority, the State of Washington, or the United States Government. The term "hazardous substance" includes, without limitation, any hazardous or toxic substance, material or waste which is: 1) petroleum or petroleum derivative; 2) asbestos; 3) polychlorinated biphenyls (PCBs); 4) designated as "Dangerous Waste" or "Extremely Hazardous Waste" by the State of Washington under authority of the Hazardous Waste Management Act, Revised Code of Washington Chapter 70-105, and associated regulations, WAC 173-303; 5) designated as a "Hazardous Substance" pursuant to the Comprehensive Environmental Response, Compensation and Liability Act, 42 USC 9601, et seq.; 6) designated as "Hazardous Waste" pursuant to the Resource Conservation and Recovery Act (RCRA) 42 USC 6901, et seq.; 7) designated as a "Hazardous Substance" under the Clean Water Act, 33 USC 1321, or listed pursuant to 33 USC 1317; 8) listed by the U. S. Department of Transportation at 49 CFR 172.101 or the U. S. Environmental Protection Agency at 40 CFR 302; 9) subject to corrective action requirements pursuant to Section 3003 of RCRA; and 10) any other substance, waste or material which is regulated as hazardous, dangerous or solid waste by any federal, state or local agency.

The Lessee's responsibilities under this indemnification clause become effective on the date of execution of this Lease. The Lessee's responsibilities of indemnification are prospective from the date of execution.

The indemnification shall specifically cover costs incurred in connection with any investigation of site conditions or any cleanup, removal, restoration or remedial action required by any federal, state or local regulatory authority, or undertaken by the Government or its authorized representatives to comply with federal, state or local environmental protection or restorations laws, regulations or ordinances deemed applicable to the site by the Government. The obligation undertaken by Lessee to provide indemnification to the Government or its authorized representatives shall survive the expiration or early termination of this Lease.

To insure that Lessor is in compliance with requirements stated in the Hanford Resource Conservation and Recovery Act Permit, Chapter 1, E.15, the Lessee shall immediately report to Lessor the release of any dangerous waste or hazardous substance occurring on the Hanford Site. This immediate verbal report shall contain the following information:

a. Name, address, and telephone number of the point of contact for the Lessee;

b. Location at which the release occurred;

c. Name and quantity of material(s) involved;

d. The extent of injuries, if any;

e. An assessment of actual or potential hazard to the environment and human health, where this is applicable; and

f. Actions which have been undertaken to mitigate the occurrence.

15. **Condition of Leased Property at Expiration of the Lease Term.** Lessee shall restore the Leased Property to the condition designated in the Contract prior to the expiration of this Lease.

16. **Rights and Remedies; No Waiver Implied.** All rights and remedies of the Lessor and Lessee under this Lease shall be cumulative and none shall exclude any other allowed either party by law, and the use of or resort to any one or more shall not exclude or be deemed a waiver of any other or others, nor shall any express or implied waiver of any terms of this Lease constitute or be construed as a waiver of any other breach of the same or any other term, covenant, or condition.

17. **Default.** This lease is made subject to the condition that if there should occur any of the events hereinafter provided in this paragraph, Lessor may terminate this Lease under the conditions and in the manner hereafter stated and sue for and recover all damages accruing hereunder, or may sue and recover without terminating the Lease; provided, that upon any such termination the Lessor may re-enter and take possession of the Leased Property without compensation to Lessee on account of such termination.

(1) In the event the Contract is terminated for default; or
(2) In the event the Lessee uses the Leased Property in a manner not in substantial compliance with the covenants and purposes provided herein; and such misuse continues for sixty days after written notice to Lessee thereof, or at any time thereafter; or

(3) In the event Lessee shall become insolvent, make an assignment for the benefit of creditors, file a petition in bankruptcy, seek the benefit of any bankruptcy, composition or insolvency law, or be adjudged bankrupt, or if a receiver or trustee of the property of the Lessee shall be appointed, Lessor may immediately or at any time thereafter, by written notice to Lessee terminate this Lease and this Lease shall expire upon the date specified in such notice; provided that, if such default be cured by Lessee prior to the termination date specified in such notice, this Lease shall remain in full force and effect if the provisions of the preceding paragraphs (1) or (2) do not apply.

18. **Partial Invalidity.** If any term or provision of this Lease or the application thereof to any person or circumstance shall to any extent be invalid or unenforceable, the remainder of this Lease, or the application of such term or provision to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Lease shall be valid and be enforced as written to the fullest extent permitted by law.

19. **Number; Gender; Permissive Versus Mandatory Usage.** Where the context permits, references to the singular shall include the plural and vice versa, and to the neuter gender shall include the feminine and masculine. Use of the word "may" shall denote an option or privilege and shall impose no obligation upon the party which may exercise such option or privilege; use of the word "shall" shall denote a duty or an obligation.

20. **Lessee Liability.** The Lessee, and all general partners of Lessee if Lessee is a partnership, shall be jointly and severally liable under this Lease.

21. **Captions and Construction.** The captions in this Lease are for the convenience of the reader and are not to be considered in the interpretation of its terms.

IN WITNESS WHEREOF, the parties hereto have caused this Lease to be executed on their behalf by their duly authorized representatives as of the date first above written.

LESSEE: _____
_____
_____
_____

By: _____

Title: _____

LESSOR: THE UNITED STATES OF AMERICA
DEPARTMENT OF ENERGY
RICHLAND OPERATIONS OFFICE

By: _____

Title: Realty Officer

[Add acknowledgment for Lessor and Lessee]

Attachment 8 Performance Guarantee

RESERVED

Attachment 9 Glossary

I. Definitions

A

Aging waste (Aging): High-level, first cycle solvent extraction waste obtained from the PUREX process in which uranium and plutonium are separated from fission products following evaporative concentration, denitration, and neutralization. This process was previously performed at the PUREX or Plutonium-Uranium Extraction Plant in the Hanford Site's 200 East Area.

Annulus: Space between the inner and outer shells of double-shell tanks. Drain channels in the insulating and/or supporting concrete direct any leakage to the annulus space where conductivity probes and radiation detectors are installed. If a leak occurs, detectors activate alarms at a central monitoring station. Continuous Air Monitoring alarms are also located in the annulus.

B

Bench-scale: Testing conducted in a laboratory typically involving small quantities (i.e., less than 100 liters) and equipment that may be placed on or in a laboratory fume hood or radiochemical hot cell.

Borosilicate glass: Solidification product created when waste oxides are melted together with additives such as SiO_2, B_2O_3, CaO, etc., typically in concentrations greater than one percent.

Bounding operations: Operations conducted at the extreme limits of the specification. In the case of this Solicitation, bounding operations refers to operations at the upper or lower compositional limits of the waste envelopes.

C

Close/Closure: The deactivation, stabilization, and surveillance of a dangerous waste treatment, storage, or disposal facility, which has discontinued operation, in accordance with a RCRA closure plan approved by the Washington State Department of Ecology. The closure plan will contain the applicable elements required under WAC 173-303-610.

Constituent (of waste): Individual parts or components of the waste which define their character. Components vary in form, such as solid or liquid and chemical makeup, such as sodium, nitrate, technetium, cesium, strontium).

Contractor(s): The private company(ies) selected to contract with DOE for construction and

operation of the technologies and facilities necessary to receive, process tank waste, and deliver treated waste products to DOE for storage or disposal.

D

Deactivation: The process of permanently ceasing active operation at a facility in a planned and controlled manner to support follow-on decontamination and decommissioning activities. A process whereby non-essential systems and/or equipment in a shut down facility are de-energized, drained and flushed, isolated, or removed to minimize the long-term costs of maintaining the facility in a physically safe and environmentally secure condition. Includes the removal of fuel and stored radioactive and/or hazardous waste from the facility and implementation of appropriate facility safety requirements.

Decontamination and Decommissioning (D&D): Decontamination is the removal of radioactive or dangerous material from surfaces, structures, or equipment by scraping, sand blasting, chemical action, washing or other techniques. After decontamination is complete, decommissioning is the process in which a facility is demolished, taken out of use, or renovated for reuse.

Decontamination Factor (DF): The ratio of the amount of a species or material input to a treatment system unit or process and the amount leaving the treatment system, unit, or process. DF = (Amount In/Amount Out)

Dilute complexed waste: Waste that is characterized by a high content of organic carbon including organic complexants, such as ethylenediaminetetra-acetic acid, citric acid, and hydroxyethyl-ethylenediaminetriacetic acid, used in the solvent extraction process. Main sources of dilute complexed waste in the double-shell tanks are saltwell liquid inventory from the single-shell tanks.

Director of the Regulatory Unit: An individual reporting to DOE, who has been delegated the authority to execute Radiological, Nuclear, and Process Safety regulatory oversight of the Contractor.

Double-shell slurry: Concentrated wastes in the double-shell tanks resulting from evaporation of liquids in the double-shell tank wastes and the liquids pumped from the single-shell tanks. Double-shell slurry exceeds the sodium aluminate saturation boundary in the evaporator without exceeding receiver tank composition limits.

Double-shell slurry feed (DSSF): Waste concentrated just before reaching the sodium aluminate saturation boundary (of 6.5 Molar hydroxide) in the evaporator without exceeding receiver tank composition limits. This form is not as concentrated as double-shell slurry.

Double-shell tank (DST): A reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes; annulus is instrumented to permit detection of leaks from the inner liner. At the Hanford Site, there are 28 double-shell tanks.

Dry, free flowing product: A product that does not contain free water (i.e., water that will vaporize at a temperature less than or equal to 100°C) and that when the container holding the product is tilted at an angle of 45 degrees, the product flows out of the container without any further prodding or assistance. A common free-flowing material would be table salt.

E

EA glass: The reference glass on which the environmental assessment for the Savannah River Defense Waste Processing Facility was based. This environmental assessment is available from the National Technical Information Service as *Environmental Assessment - Waste Form Selection for SRP High-Level Waste* (*see* Section L, Attachment 6, *Availability of Information*).

End-point criteria/end-points: End-point criteria describe the overall acceptable condition of a facility after deactivation. End-points are the detailed specifications for the conditions of areas, spaces of a facility, systems, equipment, and related documentation after deactivation. End-points also include how tanks, piping, rooms/areas, site, facility systems, and equipment shall be left at the end of deactivation for a period of surveillance and maintenance prior to final disposition.

Equivalent oxide basis: The oxide of the thermodynamically most favorable valence state of the non-volatile element under standard conditions of temperature and pressure.

F - G

Facility: Includes site, improvements, buildings and structures, process systems, and/or equipment that fulfilled a particular purpose.

H

Hanford Site: A 570-square-mile reservation in southeast Washington State owned by the Federal Government. Established in 1943 as part of the Manhattan Project, the Hanford Site's chief mission was to produce plutonium for use in nuclear weapons for the nation's defense. The Site has had nine production reactors and four chemical separation plants. Hanford's current mission is environmental cleanup and developing related technologies.

High-Level Waste (HLW): See **Waste, High-Level**.

I - J

Immobilization: Immobilization is the act or process of reducing the mobility of waste constituents for long-term transport and subsequent exposure to human, animal, or plant species in the biosphere.

Grouting or vitrification are examples of immobilization processes.

Incidental waste: Radioactive waste generated incidentally to the production or separation of special nuclear material. Operationally, this is the waste resulting from the removal of all radionuclides that can be reasonably and economically separated from the wastes generated by the production or separation of special nuclear material.

Integrated Product/Process Teams (IPT): The Integrated Product Teams consist of three teams responsible for management; safety, health, and environmental; and interface issues between the Contractor and DOE. The regulatory and interface teams will report to the management team. DOE will use the IPT as the primary method to communicate information critical to the Contractor's success: regulatory and site requirements, interface information, remediation of Hanford tank waste, Hanford Site operation constraints, and identification of potential problem areas.

K - L

Low-Activity Waste (LAW): See **Waste, Low-Activity**.

Low-Level Waste (LLW): See **Waste, Low-Level.**

M

Mitigation: Measures taken to reduce adverse impacts on the environment.

Monitoring: Periodic or continuous surveillance or testing to determine the level of compliance with statutory requirements, laws, etc.

N

Nameplate capacity: Nameplate capacity is the processing capacity or throughput of a processing system or plant when operating at normal design rates assuming no reduction in production capacity due to equipment failure or maintenance.

P

Pretreatment: Chemical treatment process or a series of processes used to prepare waste for immobilization.

Privatized facilities: Facilities which are privately (rather than by the Government) developed, financed, constructed, owned, operated, and deactivated.

Process waste: Excess materials resulting from chemical or physical processing.

Production operations: Those operations which cannot be undertaken until the issuance of an operation authorization by the Director of the Regulatory Unit. This includes those operations which involve introduction of waste beyond the amount specifically authorized for pre-operational testing.

Q - R

Radiological, Nuclear, and Process Safety: Those actions taken to control the hazards incident to possession, use and disposal of radioactive and nuclear material, and the processing of hazardous chemicals.

Radiological, Nuclear, and Process Safety Regulation: The framework of guidance, standards and requirements to be applied by DOE to the Contractor's approach for ensuring radiological, nuclear, and process safety of the waste treatment equipment, facilities and operations.

Regulatory Unit: The organization reporting to the Director of the DOE Regulatory Unit, dedicated to supporting the Director in executing regulatory authority.

Risk: The quantitative and qualitative expressions of possible loss which consider both the possibility that a hazard will cause harm and the consequences of that event.

S

Salt cake: Solid Hanford Site tank wastes resulting from crystallization of chemical salts by concentration, usually in an evaporator. If salt cake is layered over sludge, it is only possible to measure total solids volume.

Secondary waste: Waste generated from contact with High-Level Waste or Low-Activity Waste, e.g., liquid effluents, failed equipment, clothing, tools, facilities, tanks. This waste would either be recycled, i.e., returned to the High-Level Waste or Low-Activity Waste streams, or disposed of as Low-Activity Waste.

Sludge: At the Hanford Site, the term is applied to those water-insoluble solids that settle and accumulate at the bottom of a storage tank. Solids are formed by precipitation or self-concentration and are metal hydroxides and oxides precipitated during sodium hydroxide additions to waste.

Slurry: A mixture of solids and liquid requiring agitation to prevent separation; the act of mixing to form a solid-liquid suspension system.

Solicitation: A document, sent to prospective contractors by a Government agency, requesting the submission of offers or of information; also, the process of issuing such documents and obtaining

responses.

Specifications: The physical, chemical, technical, and performance characteristics established by DOE for products to be delivered by the Contractor.

State: State of Washington.

Supernate, Supernatant: The liquid layer that is above the solids in the waste storage tanks. Drainable liquid remaining minus drainable interstitial. Supernate is usually derived by subtracting the solids level measurement from the liquid level measurement. In some cases, the supernatant volume includes floating solid crusts because its volume cannot be measured.

Surveillance and maintenance: Activities conducted post deactivation to assure that the site and facility (or facilities) remain in a safe, stable, and environmentally secure condition. Includes periodic inspections and monitoring of the site and facility, contamination control, and maintenance of barriers controlling access to the site/facility.

T

Tank waste: Waste currently contained in single-shell and double-shell tanks; all new waste added to double-shell tanks.

Tank Waste Remediation System (TWRS): An integrated waste operations program established by DOE in December 1991 to retrieve, store, pretreat, immobilize, and either dispose of or prepare for disposal of Hanford radioactive tank waste.

Throughput Rate: The rate at which waste is processed. This rate is similar to the nameplate capacity (*see* definition above) except it is adjusted to reflect the expected time the process will not be operating due to maintenance, planned shutdowns, etc.

Treatment: A method, technique, or process designed to change the physical or chemical character of waste to render it less hazardous for disposal.

Tri-Party Agreement (TPA): The *Hanford Federal Facility Agreement and Consent Order* (known as the Tri-Party Agreement), initially signed in 1989 and amended subsequently by the Washington State Department of Ecology, U.S. Environmental Protection Agency, and DOE. The TPA, which is legally enforceable, defines the responsibilities, management, regulatory focus, and schedule for compliance with RCRA, CERCLA and the *State of Washington Hazardous Waste Management Act* at the Hanford Site.

U - V

Vitrification: A method of immobilizing radioactive waste for eventual disposal in a geologic repository. Involves adding frit and waste to a joule-heated vessel and melting it into a glass that is then poured into a canister.

W - Z

Waste: Any by-product or excess material. Types of waste include:

Waste, Dangerous: Those solid wastes designated in WAC 173-303-070 through 73-303-100 as dangerous or extremely hazardous or mixed waste.

Waste, Hazardous: Those solid wastes designated by 40 CFR 261 and regulated as hazardous and/or mixed waste by the EPA.

Waste, High-Level (HLW): The highly radioactive waste material that results from the operation of the first-cycle solvent extraction system or equivalent and subsequent extraction cycles or equivalent that contains a combination of transuranic waste and fission products in concentrations requiring permanent isolation.

Waste, Low-Activity (LAW): Low-Level tank waste that has not yet received NRC concurrence as incidental.

Waste, Low-Level (LLW): Waste that contains radioactivity and is not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or by-product material (as defined in Section IIc(2) of the Atomic Energy Act of 1954, {42 USC 2014(e)(2)}).

Waste, Mixed: Those wastes which contain both radioactive and dangerous components.

Waste, Transuranic: Non-high-level radioactive waste which is contaminated with alpha-emitting radionuclides with an atomic number greater than 92 at a concentration of greater than 100 nanoCuries per gram.

Waste acceptance criteria: The set of performance requirements established by DOE that the Contractor's waste products must meet before acceptance for storage by DOE.

Waste envelope: The set of compositional limitations within which DOE will provide waste feed for processing.

Waste feed tank: The feed tank into which waste will be transferred for subsequent retrieval and treatment by the Contractor.

Waste form: The processed radioactive waste immobilized in glass or another substance that meets the requirements specified by DOE.

Waste oxides: A binary compound of an element with oxygen either present in or resulting from the reaction of elements contained in waste delivered to the Contractor for processing with oxygen. Waste oxides in this Solicitation specifically exclude Na_2O and SiO_2.

II. Symbols and Elements

Ag	Silver
Al	Aluminum
Am	Americium
As	Arsenic
B	Boron
Ba	Barium
Be	Beryllium
Bi	Bismuth
Bq	Becquerel
Btu	British thermal unit
C	Carbon
C	Celsius
Ca	Calcium
cal	Calories
Cd	Cadmium
Ce	Cerium
Ci/g	Curies per gram
Ci/l	Curies per liter
Ci/m^3	Curies per cubic meter
Cl	Chlorine
cm^2	Square centimeters
Co	Cobalt
cP	Centipoise
Cr	Chromium
Cs	Cesium
Cu	Copper
DF	Decontamination Factor
dpm	Disintegrations per minute
Dy	Dysprosium
Er	Erbium
Eu	Europium
F	Fahrenheit
F	Fluorine
Fe	Iron
ft/sec	Feet per second
g	Gram
Gd	Gadolinium
Ge	Germanium
gpm	Gallons per minute
H	Hydrogen
Hg	Mercury
Ho	Holmium

hr	Hour
Hz	Hertz
I	Iodine
In	Indium
K	Potassium
k_{eff}	Criticality safety factor
kg	Kilogram
kV	Kilovolts
kW	Kilowatt
l	Liter
La	Lanthanum
Li	Lithium
lpm	Liters per minute
m	Meter
M	Molar
MeV	Million electronvolts
Mg	Magnesium
mg	Milligram
ml	Milliliter
Mn	Manganese
Mo	Molybdenum
mRem/hr	Millirem per hour
MT	Metric Ton
MW	Megawatt
N	Nitrogen
Na	Sodium
Nb	Niobium
nCi	Nanocurie
Nd	Neodymium
Ni	Nickel
Np	Neptunium
O	Oxygen
P	Phosphorus
Pa	Pascal
Pb	Lead
Pd	Palladium
Pm	Promethium
ppm	Parts per million
Pr	Protactinium
Psi	Pounds per square inch
Pu	Plutonium
Rb	Rubidium
Re	Rhenium
rem/hr	Roentgen equivalent man per hour

RFP	Request for Proposals
Rh	Rhodium
R/hr	Rad per hour
rpm	Revolutions per minute
Ru	Ruthenium
s	Second
S	Sulphur
Sb	Antimony
Se	Selenium
Si	Silicon
Sm	Samarium
Sn	Tin
Sr	Strontium
Ta	Tantalum
Tb	Terbium
Tc	Technetium
Te	Tellurium
Th	Thorium
Ti	Titanium
Tl	Thallium
Tm	Thulium
U	Uranium
V	Vanadium
W	Watt
W	Tungsten
wt%	Percent by weight
w/w	weight per weight
Y	Yttrium
Zn	Zinc
Zr	Zirconium
µ	Micro

III. Acronyms

AC	Alternating Current
ACA	Associate Contractor Agreement
ADP	Automated Data Processing
AFL-CIO	American Federation of Labor - Committee for Industrial Organization
AL	Albuquerque Operations Office
ALARA	As Low As Reasonably Achievable
ANS	American Nuclear Society
ANSI	American National Standards Institute
ANSI/ANS	American National Standards Institute/American Nuclear Society
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BARCT	Best Available Radionuclides Control Technology
CAA	Clean Air Act
CC	Complexant Concentrate
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CLIN	Contract Line Item Number
CO	Contracting Officer
COR	Contracting Officer's Representative
CWA	Clean Water Act
CY	Calendar Year
D&D	Decontamination and Decommissioning
DEAR	Department of Energy Acquisition Regulations
DN	Dilute Non-complexed waste
DNFSB	Defense Nuclear Facilities Safety Board
DOE	U.S. Department of Energy
DOE-EM	DOE Office of Environmental Management
DOE/RL	DOE Richland Operations Office
DOH	Washington State Department of Health
DOT	U.S. Department of Transportation
DSA	Deactivation Safety Assessment
DSC	Differential Scanning Calorimetry
DSSF	Double-Shell Slurry Feed
DST	Double-Shell Tank
DUNS	Dun and Bradstreet Limited
EA	Environmental Assessment
ECIWSP	Employment Cost Index, Wages and Salaries, All Private Industry Workers
Ecology	Washington State Department of Ecology
EEO	Equal Employment Opportunity
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency

EPCRA	Emergency Planning and Community Right-to-Know Act
ETF	Effluent Treatment Facility
FAR	Federal Acquisition Regulations
FOCI	Foreign Ownership, Control, or Influence
FSAR	Final Safety Analysis Report
GAO	General Accounting Office
GSBCA	General Services Administration Board of Contract Appeals
HAMTC	Hanford Atomic Metal Trades Council
HFFACO	Hanford Federal Facility Agreement and Consent Order (also known as the Tri-Party Agreement)
HLW	High-Level Waste
HSSWAC	Hanford Site Solid Waste Acceptance Criteria
IAEA	International Atomic Energy Agency
ICD	Interface Control Document
ICF-KH	ICF-Kaiser Hanford Company
ID	Interface Description
IHLW	Immobilized High-Level Waste
ILAW	Immobilized Low-Activity Waste
IMP	Integrated Master Plan
IPPD	Integrated Process and Product Development
IPT	Integrated Product/Process Team
IRS	Internal Revenue Service
ISAR	Initial Safety Report
ISMP	Integrated Safety Management Plan
ITAR	International Traffic in Arms Regulation
JOBBS	Job Opportunities Bulletin Board System
LAW	Low-Activity Waste
LERF	Liquid Effluent Retention Facility
LLW	Low-Level Waste
MC&A	Materials Control and Accountability
MSIN	Mail Stop Identification Number
NCAW	Neutralized Current Acid Waste
NEPA	National Environmental Policy Act
NOAV	Notice of Alleged Violation
NOC	Notice of Construction
NOV	Notice of Violation
NRC	U.S. Nuclear Regulatory Commission
NTIS	National Technical Information Services
NUREG	Nuclear Regulatory Guide
OCRWM	Office of Civilian Radioactive Waste Management
OMB	Office of Management and Budget
OODEP	Owners, Officers, Directors and Executive Personnel
OSHA	Occupational Safety and Health Administration
PCT	Product Consistency Test

PHM	Project Hanford Management
PNL	Pacific Northwest National Laboratory
PPA	Pollution Prevention Act
PPI	Producer Price Index
PSAR	Preliminary Safety Analysis Report
PUREX	Plutonium Uranium Extraction
QA	Quality Assurance
QARD	Quality Assurance Requirements Description
RCRA	Resource Conservation and Recovery Act
RCW	Revised Code of Washington
RFP	Request for Proposals
RL	Richland Operations Office
SARA	Superfund Amendments and Reauthorization Act
SBA	Small Business Administration
SEB	Source Evaluation Board
SEC	Security and Exchange Commission
SEPA	State Environmental Policy Act
SF	Standard Form
SIC	Standard Industrial Classification
SNM	Special Nuclear Materials
SOW	Statement of Work
SRD	Safety Requirements Document
SRP	Savannah River Plant
SSN	Social Security Number
SSP	Safeguards and Security Plan
SST	Single-Shell Tank
S&S	Safeguards and Security
TBD	To Be Determined
TEDF	Treated Effluent Disposal Facility
TIC	Total Inorganic Carbon
TIN	Taxpayer Identification Number
TOC	Total Organic Carbon
TPA	Tri-Party Agreement
TRU	Transuranics
TTT	Time, Temperature and Transformation
TWRS	Tank Waste Remediation System
USC	United States Code
VOC	Volatile Organic Compounds
WA	Washington
WAC	Washington Administrative Code
WAPS	Waste Acceptance Product Specifications for Vitrified High-Level Waste Forms
WASRD	Waste Acceptance System Requirements Document
WCP	Waste Form Compliance Plan
WDOH	Washington Department of Health

WISHA	Washington Industrial Safety and Health Administration
WHC	Westinghouse Hanford Company
WQR	Waste Form Qualification Report
WTD	Waste Transfer Day