AK _____ Procedure _____ Training _____ n/a

M&TE _____ Procurement _____ Other _____

Records Transmittal Sheet

TRU Project Waste Certification Program

Completion of all areas not required

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Index Category:

- ☐ 10 Site Certification
- ☑ 11 Waste Characterization and Certification
- ☐ 12 Transportation and Packaging
- ☐ 13 Procurement
- ☐ 14 Quality Assurance
- ☐ 15 Personnel Qualification and Training
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- ☐ 17 Calibration/M&TE
- ☐ 18 Records Management (Records use only)
- ☐ 19 General Correspondence
- ☐ 20 Reference Material

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SPECIFICATIONS AND STANDARDS FOR THE BURIAL OF ARHCO SOLID WASTES

December 15, 1970

By

G. V. Hanson and G. C. Oberg

Waste Management Process Engineering Section
Operations Support Engineering Department
Chemical Processing Division
Atlantic Richfield Hanford Company

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SPECIFICATIONS AND STANDARDS

FOR THE BURIAL OF ARHCO SOLID WASTES

1.0 Introduction

Solid radioactive waste is defined as radioactive material which is essentially dry, or which contains adsorbed or absorbed fluids in sufficiently small amounts as to be immobile in the soil. Solid radioactive wastes of various sizes, shapes, and radioactivity levels are generated from the operation of the Atlantic Richfield Hanford Company (ARHCO) Chemical Processing Division facilities. These wastes are packaged and buried in trenches. Buried solid radioactive wastes are considered to be in long-term storage in the ground, except those wastes containing or suspected of containing transuranium nuclides, buried after April 30, 1970, are considered to be in interim storage (20 years). Solid wastes from B Plant and the tank farms are believed to contain insignificant quantities of transuranium nuclides and are excluded from interim storage requirements.

Responsibilities of ARHCO management for the handling and burial of these wastes are assigned in ARHCO Policy Guide 1.6.4, "Release of Waste Materials to the Environment", in ARHCO Operating Instruction 1.6.4.1, same title, and in ARHCO Operating Instruction 1.6.5.2, "Outdoor Radiation Zones".

This specifications and standards document supersedes ARH-919, "Specifications and Standards for the Disposal of ARHCO Solid Wastes", Waste Management Process Engineering Section, December 1, 1968. Storage of failed, contaminated process

equipment in tunnels is covered in ARH-1516, "Environmental Specifications, Objectives and Standards for Purex Plant Effluents", K. H. Henry and G. L. Ritter (to be issued).

2.0 Purpose

The purpose of this document is to provide specifications and standards for packaging and burial of ARHCO generated solid wastes in accordance with

1) ARHCO Waste Management Program objectives;

2) "Radiation Protection Standards", ARH-220;

3) AEC Manual Chapter 0510, "Waste Disposal", its RL-Supplement and RL-Appendix; and

4) AEC Immediate Action Directive 0511-21, "Policy Statement Regarding Solid Waste Burial".

3.0 Discussion

Solid radioactive wastes from ARHCO operations are buried in trenches near the operating areas. Large items of solid waste, such as failed equipment from B Plant, the tank farm operations and other locations where the presence of transuranium radionuclides can be safely ruled out, are packaged in heavy wood or concrete boxes and buried in the "industrial waste" burial trenches. Small items of failed equipment and trash type contaminated wastes, from locations where the presence of transuranium radionuclides can be safely ruled out, are packaged in cardboard cartons, wood boxes, steel or fibre drums and buried in the "dry waste" burial trenches. The various waste containers used provide containment of the radioactive contamination and minimize radiation exposure to personnel during temporary storage, handling, shipment and burial operations. Once buried, no reliability is placed on the containers for confinement or retrievability of these materials.

Failed equipment or other large items of solid waste from the Purex Plant, Z Plant, or other operations, containing or suspected of containing plutonium or other transuranic nuclides, are packaged in metal or concrete containers and buried in segregated alpha trenches in the "industrial waste" burial garden. Small items of failed equipment and trash type contaminated wastes, containing or suspected of containing plutonium or other transuranic nuclides,

are packaged in iron drums for burial in segregated alpha trenches in the "dry waste" burial garden. Burial containers for these wastes are specified by the Facilities Engineering Department. Solid Waste burial facilities are in service in both the 200-E and 200-W Areas.

The specifications and standards presented in this document indicate the controls required to minimize the hazards associated with the burial of solid radioactive wastes. In addition, they are responsive to ARH-220, "Radiation Protection Standards and Controls", to AEC Manual Chapter-0510, "Waste Disposal", its RL-Supplement and RL-Appendix, and to AEC Immediate Action Directive 0511-21, "Policy Statement Regarding Solid Waste Burial". Although broad management responsibilities for waste disposal operations are assigned in the ARHCO Policy Guides and ARHCO Operating Instructions, they are re-stated here as they apply specifically to solid waste burials in the 200 Areas.

3.1 The Operations Support Engineering Department is responsible for:

3.1.1 Establishing and maintaining specifications and standards compatible with established criteria for burial of waste materials.

3.1.2 Auditing the various organizations and facilities generating waste materials for burial for compliance with specifications.

3.2 The Facilities Engineering Department is responsible for:

3.2.1 Obtaining AEC concurrence on new solid waste burial sites.

3.2.2 The design and construction of solid waste burial facilities.

3.2.3 The recording, on the appropriate design media or map, of the location of new solid waste burial sites and those removed from service together with the applicable co-ordinates.

3.2.4 Providing criteria for the purchase or design of solid waste burial containers.

3.2.5 Reviewing containers, proposed by others, for compliance with the approved design criteria.

3.3 The Research and Development Department is responsible for review and approval of criticality prevention specifications.

3.4 The Personnel Protection Operation is responsible for providing:

3.4.1 Assistance in conversion of radiation readings to estimated total mixed fission product curies and/or total curies of specific fission product.

3.4.2 Assistance in estimating the plutonium and/or other transuranium nuclide content of packages when radiation counting of packaged waste is not feasible.

3.4.3 Radiation Protection Standards to cover the collection and burial of solid radioactive wastes.

3.4.4 An annual audit for compliance with existing ARHCO policy and with controls regarding cumulative releases of solid waste materials.

Within the Manufacturing Department:

3.5 The operating plant or facility generating the solid waste is responsible for:

3.5.1 Packaging waste materials for containment of radioactivity and any liquid associated with the waste.

3.5.2 Segregation and packaging of waste materials containing or suspected of containing plutonium or other transuranium radionuclides for containment and retrievability.

3.5.3 Securing measurements and recording of the radiation dose rate on each package of waste.

3.5.4 Temporary storage of packaged waste pending burial.

3.5.5 Scheduling burials and transport of the waste to the burial ground.

3.5.6 Determining total plutonium and/or other transuranium nuclides, mixed fission product, and/or specific fission products associated with the waste.

3.5.7 Periodic reporting of estimated uranium (lbs or grams), plutonium and/or other transuranium nuclides (grams), contained in solid waste buried to Waste Management Section [see item 3.6].

3.6 The Waste Management Section is responsible for:

3.6.1 Providing procedures for solid waste burial.

3.6.2 Operation of the solid waste burial grounds.

3.6.3 Periodic reporting of location of buried wastes to Process Design Engineering, Facilities Engineering Department [e.g., trench No., coordinates, etc.].

3.6.4 Proper identification, posting, surveillance, and maintenance of active solid waste burial sites.

3.6.5 Maintaining the official records of solid waste buried to include volume, location, uranium, plutonium and/or other transuranium nuclides, fission product content, and the land area used.

3.6.6 Issuing periodic summary reports of solid wastes buried.

3.7 The Technical Services Section is responsible for:

3.7.1 Maintenance of deactivated solid waste burial sites to meet established standards.

3.7.2 Surveillance of deactivated solid waste burial sites.

3.7.3 Reporting non-standard conditions at active solid waste burial sites to the Manager, Waste Management, for correction.

4.0 SPECIFICATIONS FOR SOLID WASTE BURIAL

The specifications presented in this document define the limits within which ARHCO solid wastes may be committed to the ground by trench burial. Specifications set forth limits required to protect the environs, operating facilities, and personnel. Changes in specifications may be made only with the written approval of the following Department Managers:

1) Operations Support Engineering;
2) Research and Development; and
3) Facilities Engineering;

and acceptance by the following Section Managers:

1) Plutonium Finishing;
2) Technical Services;
3) CPD Services;
4) Purex; and
5) Waste Management.

4.1 Criticality Prevention

Discard of fissionable or fissile materials in solid wastes to burial trenches should be minimized by operational and process controls. However, when recovery of these materials from solid wastes is not economical or feasible, burial shall be limited as follows:

4.1.1 Industrial Waste Burial Trenches

4.1.1.1 Individual boxes, containing miscellaneous equipment pieces (jumpers, agitators, etc.) for burial in the industrial waste trenches, shall be known beyond reasonable doubt to contain less than 1000 grams of plutonium, uranium-233, and protactinium-233, singly or in combination. The uranium-238 buried under this specification (4.1.1.1) shall contain less than 1.15 percent uranium-235. The quantity of uranium (<1.15% U-235) and thorium buried under this specification is not restricted by criticality considerations.

Any hydrogenous material to be placed in the burial box, other than the hydrogenous material used in the fabrication of the contained equipment pieces, shall be physically segregated from the equipment pieces and shall be essentially free (<15 grams) of fissile material. In addition, any individual equipment piece placed in the box shall be known beyond reasonable doubt to satisfy at least one of the following requirements:

Any equipment piece shall contain

a) Less than 1000 grams of plutonium, uranium-233 and protactinium-233, singly or in combination, and essentially no uranium-238 or thorium (<2 lb singly or in combination); or

b) Less than 350 grams of plutonium, uranium-233 and protactinium-233, singly or in combination, when present at a ratio of >3000 gm/ton of included U-238 (≤1.15% U-235) and thorium, singly or in combination; or

c) Less than 1000 grams of plutonium, uranium-233 and protactinium-233, singly or in combination at a ratio of less than 3000 grams per ton of included U-238 (≤1.15% U-235) and thorium, singly or in combination.

4.1.1.2 When the U-235 content of uranium present is ≥1.15 and ≤1.97* percent, individual boxes, containing miscellaneous equipment pieces (jumpers, agitators, etc.) for burial in the industrial waste trenches, shall be known beyond reasonable doubt to contain less than 340 grams total plutonium, uranium-233, and protactinium-233, singly or in combination, and less than 1100 pounds of uranium. The quantity of thorium disposed under this specification (4.1.1.2) is not restricted by criticality considerations.

* 2.1 percent uranium burned to a Pu-240 content of ≥3 wt.% (the minimum irradiation allowed in fuel normally processed in CPD facilities).

4.1.1.3 Burial of boxes suspected to contain larger quantities of fissile materials than specified in paragraphs 4.1.1.1 and 4.1.1.2 shall require a new specification with the same approval as Section 4.0, specifications for solid waste burial.

4.1.1.4 Individual boxes shall be positioned in the burial trench so that a minimum of 3 feet, edge to edge spacing is assured for all boxes containing greater than 250 grams total plutonium, uranium-233, and protactinium-233, singly or in combination.

4.1.2 Dry Waste Burial Trenches

4.1.2.1 Individual containers of miscellaneous wastes (e.g., sampling equipment, surgical gloves, wipes, rags, etc.) packaged for trench burial shall not contain more than 250 grams of plutonium, uranium-233, protactinium-233, or uranium-235 (where the U-235 is associated with any uranium enrichment above natural) singly or in combination.

The Manager responsible for operation of the solid waste burial grounds shall be notified

prior to shipment, whenever the total plutonium, uranium-233, protactinium-233 and uranium-235, singly or in combination, contained in any one shipment of packaged miscellaneous waste to the burial grounds, exceeds 250 grams.

4.1.2.2 Burial of individual containers of miscellaneous wastes containing larger quantities of fissile materials than specified in paragraph 4.1.2.1 shall require a new specification with the same approval as Section 4.0, specifications for solid waste burial.

4.1.2.3 The Manager responsible for the operation of the solid waste burial grounds shall assure that the arrangement of containers in the burial trench will not allow the concentration of plutonium, uranium-233, protactinium-233, and uranium-235 (where the U-235 is associated with any uranium enrichment above natural) singly or in combination to exceed 175 grams per square foot of trench bottom area.

4.2 Chemical Hazards Control

4.2.1 Chemicals which are incompatible (e.g., those which could react vigorously or explode on combination) shall not be packaged in the same waste container.

4.2.2 Waste packages (cartons, boxes, etc.) containing hazardous chemicals shall be positioned in the burial trench to prevent possible reaction with packages containing other hazardous chemicals.

4.2.3 Solid wastes containing beryllium shall be packaged for double containment (e.g., in plastic bags, ice cream cartons, cardboard boxes, etc.), sealed and labeled with beryllium labels conforming to Hanford Standard AC-3-3.

4.3 Environmental Protection

4.3.1 Failed equipment or other large items of solid waste, containing or suspected of containing plutonium or other transuranium nuclides, shall be packaged in containers specified by the Manager, Facilities Engineering Department (e.g., metal or concrete boxes), and buried in designated alpha "industrial waste" trenches.

4.3.2 Small items of failed equipment and trash type wastes, containing or suspected of containing plutonium or other transuranium nuclides, shall be packaged in containers specified by the Manager, Facilities Engineering Department (e.g., approved iron drums), and buried in designated alpha "dry waste" trenches.

Review and approval for revisions to Section 4.0 - Specifications

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Review and approval for revisions to Section 4.0 - Specifications - Continued

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5.0 STANDARDS FOR SOLID WASTE BURIAL

Standards set forth operating limits designed for prudent operation of the waste disposal sites. Although deviation from these standards may not cause immediate potential danger to the environs, continued operation outside these limits could have serious consequences.

Changes in standards may be made only with the written approval of the Manager, Waste Management Process Engineering Section and acceptance by the following Section Managers:

1) Plutonium Finishing;
2) Technical Services;
3) CPD Services;
4) Purex;
5) Waste Management;
6) Process Design Engineering; and
7) Separations Chemistry Laboratory.

5.1 Waste Packaging

5.1.1 General

5.1.1.1 Packaging of solid radioactive wastes shall be in containers which will permit storage, handling and burial of the wastes with radiation exposure at a practical minimum and low risk of contamination spread.

5.1.1.2 Oxidizing materials, such as HNO_3, $KMnO_4$, etc., shall not be packaged with combustible wastes or in combustible containers. Rags, used for clean-up of solution spills, shall be well-rinsed to remove the oxidizing material before discard to the solid waste container.

5.1.1.3 Solid wastes shall be essentially dry. Damp wastes shall be packaged in an inner waterproof container such that the moisture is contained and the integrity of the outer container is not jeopardized during storage, transit and burial operations. Wastes containing contamination which is easily airborne shall also be contained by an inner container (e.g., sheet plastic).

Liquid in wastes for disposal by burial shall be packaged with sufficient inert absorbent material (e.g., vermiculite) so that liquid will not flow if the container is broken.

5.1.1.4 All solid radioactive waste containers shall be surveyed at the facility generating the waste. The radiation readings shall be recorded and used for estimating the radioactivity

content of the wastes contained. Waste containers generated by facilities where plutonium, uranium-233, protactinium-233 and uranium-235 could be present in significant quantities (234-5, 202-A) should be monitored by neutron counting or other methods which will provide a meaningful estimate of the fissile content of the waste.

5.1.2 Transuranium Nuclide Wastes

5.1.2.1 Solid wastes, containing or suspected of containing plutonium or other transuranium nuclides shall be packaged in containers as specified in Section 4.3.

5.1.2.2 Exterior surfaces of the waste package shall be free of smearable contamination (<200 c/m beta-gamma, <500 d/m alpha/100 cm^2).

5.1.3 Other Radioactive Wastes

5.1.3.1 Wastes for burial shall be packaged in containers (e.g., cardboard cartons, fibre and steel drums, wooden boxes, etc.) which will contain the contamination and/or fissile material and withstand normal transfer and handling with minimum risk of rupture.

Containers used for burial of large items of failed equipment shall meet the requirements as presented in HW-83959, "Criteria for Design of Equipment Burial Containers".

5.1.3.2 Exterior surfaces of the waste package shall normally be free of smearable contamination (<200 c/m beta-gamma, <500 d/m alpha per 100 cm^2) or have the contamination fixed with an adherent film or contained by additional packaging. Large burial boxes, contaminated externally, shall have the contamination fixed with an adherent film or contained by packaging.

5.1.3.3 Large structural and equipment wastes which are not boxed for burial shall have the contamination fixed with an adherent film or contained by packaging.

5.2 Waste Transfer and Burial

Section 300, "Tank Farm Manual of Operating Procedures and Safety Guides", assigns responsibilities for packaging, handling and transport of solid radioactive wastes and outlines burial procedures.

5.2.1 All waste transfers and burials shall be conducted within the conditions established by approved radiation work procedures for this operation.

5.2.2 Solid wastes, containing or suspected of containing plutonium or other transuranium nuclides, shall be packaged and buried in designated alpha trenches as stated in Sections 5.3 and 5.1.2. Alpha trenches shall be backfilled with a minimum of four feet of dirt cover.

5.2.3 Solid wastes containing radionuclides, other than plutonium or other transuranium nuclides, shall be packaged as stated in Sections 5.1.1 and 5.1.3 and buried in designated beta-gamma trenches. Beta-gamma trenches shall be backfilled with a minimum of eight feet of dirt cover.

5.2.4 Backfilling of open burial trenches shall be scheduled to reduce radiation exposure to personnel to a practical minimum and/or to prevent the spread of contamination to the environs. However, waste trenches shall be backfilled immediately whenever the dose rate at the edge of the trench reaches 100 mR/hr.

5.2.5 Routine burials to "dry waste" trenches are limited to containers having radiation emissions of less than 100 mR/hr at one foot.

5.2.6 Non-routine burials (e.g., containers having radiation emissions $\geq$ 100 mR/hr at 1 foot) shall be scheduled with Tank Farm Management personnel.

5.3 Burial Site Deactivation

When the capacity of a facility is exhausted or when it is removed from service the following conditions shall be met:

5.3.1 Additional backfill or permanent shielding shall be provided as necessary to reduce surface radiation levels to less than 1 mR/hr.

5.3.2 Deactivated disposal sites shall be accurately and permanently marked and recorded according to the guidance of AEC RL Supplement 0510, Section C.4. Markers used shall meet Hanford Standard AC-5-40 requirements.

5.3.3 Deactivated solid waste disposal sites shall be periodically inspected, at least annually, to assure that the required conditions in 5.3.1 and 5.3.2 are maintained. Deficiencies noted on inspection shall be corrected.

5.4 Records and Accounting

A solid waste burial record form, 54-6500-028 (10-68) has been developed for use by all facilities generating solid waste for burial. Factors for conversion of mR/hr readings to curies of total radioactivity have been provided. Any questions concerning the completion of this

form should be directed to Operations Analysis personnel.

5.4.1 A solid waste burial record form shall be completed by the facility generating the waste and shall accompany the shipment to the burial grounds.

5.4.2 Upon receipt of the waste shipment at the burial ground, the "Disposal Site" section of the solid waste burial record form shall be completed. Completed forms shall be transmitted to the Manager, Operations Analysis, Waste Management Section.

5.4.3 A monthly report, stating the volume of solid waste (dry packaged waste and failed equipment) buried, and the shipper, shall be submitted to the Manager, Cost Accounting.

5.4.4 The location of solid waste burials shall be recorded by trench number and coordinates. This information shall be submitted to the Manager, Operations Analysis, Waste Management, who will maintain the official records of solid waste committed to all burial sites. Periodic reports, at least annually, of solid waste burials shall be made.

5.4.5 Drawings of all solid waste burial sites shall be revised and updated, at least annually.

Review and approval for revisions to Section 5.0 - Standards

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	Engr., WMPE	Mgr., WMPE	Mgr., WMS	Mgr., Pu Fin. S.
	Date 9/30/70	Date 10/2/70	Date 12/8/70	Date 11/20/70
5.2.2; 5.2.3; 5.2.4	H. L. Hanson	B. C. Oberg	R. E. Smith	L. J. Brooke
	Engr., WMPE	Mgr., WMPE	Mgr., WMS	Mgr., Pu Fin. S.
	Date 3/25/71	Date 3/25/71	Date 3/25/71	Date 3/29/71
	Date	Date	Date	Date
	Date	Date	Date	Date

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Review and approval for revisions to Section 5.0 - Standards - Continued

Revisions	Accepted by	Accepted by	Accepted by	Accepted by
Initial issue	C W Melody	[illegible]	R M Smithers	J B Fuchs
	Mgr., Purex S.	Mgr., Tech Ser.S.	Mgr., CPD Ser. S.	Mgr., PDE
	Date 12/2/70	Date 12/3/70	Date 12/4/70	Date 11/24/70
5.2.2; 5.2.3; 5.2.4	C W Melody	H L Caudill	R M Smithers	J B Fuchs
	Mgr., Purex S.	Mgr., Tech Ser.S.	Mgr., CPD Ser. S.	Mgr., PDE
	Date 3/29/71	Date 3/26/71	Date 3/29/71	Date 3/29/71
	Date	Date	Date	Date
	Date	Date	Date	Date

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Review and approval for revisions to Section 5.0 - Standards - Continued

Revisions	Accepted by			
Initial issue	M H Campbell			
	Mgr., SCL			
	Date 12/7/70	Date	Date	Date
5.2.2; 5.2.3; 5.2.4	G A Colvin for			
	Mgr., SCL			
	Date 3/29/71	Date	Date	Date
	Date	Date	Date	Date
	Date	Date	Date	Date

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INSTRUCTIONS

GENERAL

WHEN THE ACTIVITY OF THE WASTE IS CONSIDERED TO BE MIXED FISSION PRODUCTS, AN ESTIMATE OF THE CURIES OF ACTIVITY CAN BE OBTAINED THROUGH USE OF THE CONVERSION FACTORS LISTED BELOW FOR SPECIFIC CONTAINERS. THE FACTORS ARE THE NUMBER OF CURIES OF MIXED FISSION PRODUCTS THAT WILL GIVE ONE (1) mR/hr. AT THE STATED DISTANCES. THE FACTORS CONVERT THE GAMMA ACTIVITY TO TOTAL ACTIVITY, INCLUDING THE BETA COMPONENT. THEREFORE, ONLY C.P. WINDOW CLOSED READINGS ARE USED. THE FACTORS ARE FOR THE C.P. READINGS AT THE CENTER OF THE LARGEST SIDE OF BOXES AND AT THE CENTER OF THE SIDE OF A DRUM.

SPECIFIC

1. OBTAIN A SURFACE (2") WINDOW CLOSED C.P. READING AT THE CENTER OF THE LARGEST SIDE OF THE CONTAINER. IF SURFACE READING IS OFF SCALE, TAKE READING AT 3 FT.
2. TOTAL THE SURFACE (2") C.P. READINGS FOR THE SAME TYPE CONTAINER.
3. TOTAL THE C.P. READINGS AT 3 FT. FOR THE SAME TYPE CONTAINER.
4. DETERMINE THE TOTAL CURIES IN THE SAME TYPE CONTAINER BY MULTIPLYING THE TOTAL OF THE C.P. READINGS BY THE APPROPRIATE CONVERSION FACTOR FOR THE CONTAINER AND DISTANCE.
5. FOR BURIALS IN CONCRETE, WOODEN, AND OTHER TYPE CONTAINERS, OBTAIN THE C.P. READING OF THE LARGEST SIDE AT A MEASURED DISTANCE AND APPLY THE APPROPRIATE FACTOR FOR THE CONTAINER AND DISTANCE.

CONVERSION FACTORS

CONTAINER		(UNIT VOLUME FT^3)	FACTORS (CURIES / mR /hr.) AT SURFACE (2")	FACTORS (CURIES / mR /hr.) AT 3 FT
222-S LAB CARDBOARD	10"X10"X25"	(1.5)	4×10^{-4}	1×10^{-2}
SMALL STD CARDBOARD	18"X15"X18"	(2.2)	6×10^{-4}	1×10^{-2}
LARGE STD CARDBOARD	18"X16"X24"	(4.5)	7×10^{-4}	1×10^{-2}
30 GALLON IRON DRUM		(4.1)	8×10^{-4}	1×10^{-2}
47 GALLON FIBER DRUM		(6.3)	1×10^{-3}	1×10^{-2}
55 GALLON IRON DRUM		(7.4)	1×10^{-3}	1×10^{-2}
202-A LOAD LUGGER		(139)	8×10^{-3}	3×10^{-2}
222-S LOAD LUGGER		(169)	6×10^{-3}	2×10^{-2}
221-T LOAD LUGGER		(254)	3×10^{-3}	3×10^{-2}

FT^3 TABLE

FT^3 OF CONTAINER	NUMBER OF CONTAINERS (TOTAL FT^3) 2	3	4	5	6	7	8	9	10
1.5	3	4.5	6	7.5	9	10.5	12	13.5	15
2.2	4.4	6.6	8.8	11	13.2	15.4	17.6	19.8	22
4.5	9	13.5	18	22.5	27	31.5	36	40.5	45
4.1	8.2	12.3	16.4	20.5	24.6	28.7	32.8	36.9	41
6.3	12.6	18.9	25.2	31.5	37.8	44.1	50.4	56.7	63
7.4	14.8	22.2	29.6	37	44.4	51.8	59.2	66.6	74

NO. OF 4.5 FT^3 BOXES	11	12	13	14	15	16	17	18	19	20
TOTAL FT^3	49.5	54	58.5	63	67.5	72	76.5	81	85.5	90
NO. OF 4.5 FT^3 BOXES	21	22	23	24	25	26	27	28	29	30
TOTAL FT^3	94.5	99	103.5	108	112.5	117	121.5	126	130.5	135
NO. OF 4.5 FT^3 BOXES	31	32	33	34	35	36	37	38	39	40
TOTAL FT^3	139.5	144	148.5	153	157.5	162	166.5	171	175.5	180

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Atlantic Richfield Hanford Company

SOLID WASTE BURIAL RECORD

200 AREA PLATEAU

DISPOSAL SITE

THIS PORTION OF FORM TO BE COMPLETED BY [illegible] REPRESENTATIVE AT DISPOSAL SITE

AREA	BURIAL GARDEN NO.	TRENCH NO.
GARDEN NO.	COORDINATES N _____ W _____	
REMARKS		
SIGNATURE	DATE	

SHIPPER

SHIPMENT NO.	
COMPANY ATLANTIC RICHFIELD HANFORD COMPANY	BUILDING
SUBSECTION	AREA
REMARKS	
SIGNATURE	DATE

PHYSICAL DESCRIPTION

MATERIAL CONTENTS: (E.G. DISSOLVER, PUMP, PROCESS OR LAB MISC. WASTE, TINGERS)

VOLUME: (SEE BACK FOR FT³ TABLE)

CONTAINER	UNIT VOLUME (FT³)	X NUMBER	= TOTAL VOLUME (FT³)
222-S LAB CARDBOARD 10"X 15" X 26"	(1.8)	X _____	= _____
SMALL ATB CARDBOARD 10"X 15" X 16"	(2.2)	X _____	= _____
LARGE ATB CARDBOARD 10"X 15" X 24"	(4.8)	X _____	= _____
30 GALLON IRON DRUM	(4.1)	X _____	= _____
47 GALLON FIBER DRUM	(5.3)	X _____	= _____
55 GALLON IRON DRUM	(7.4)	X _____	= _____
		FILL FRACTION	
202-A LOAD LUGGER	(139)	X _____	= _____
222-S LOAD LUGGER	(189)	X _____	= _____
221-T LOAD LUGGER	(264)	X _____	= _____
OTHER (DESCRIBE)		_____	= _____
		_____	= _____
		_____	= _____
		GROSS VOLUME (FT³)	= _____

ACTIVITY

ACTIVITY DESCRIPTION: (E.G. LONG LIVED ISOTOPES SUCH AS Pu Co, Sr, Cs MIXED FISSION PRODUCTS)

ACTIVITY LEVEL: (SEE INSTRUCTIONS ON BACK)

C.P. WINDOW CLOSED READINGS AT SURFACE (2") | AT 3 FT

IDENTIFY CONTAINER BY VOLUME ABOVE EACH COLUMN

_____ FT³	_____ FT³	_____ FT³	_____ FT³	_____ FT³
TOTAL mR/hr	TOTAL mR/hr	TOTAL mR/hr	TOTAL mR/hr	TOTAL mR/hr

TOTAL mR/hr	X	FACTOR	=	CURIES
_____	X	_____	=	_____
_____	X	_____	=	_____
_____	X	_____	=	_____
_____	X	_____	=	_____
_____	X	_____	=	_____

GROSS ACTIVITY (CURIES) = _____

PLUTONIUM _____ GRAMS

URANIUM _____ GRAMS _____ ENRICHMENT

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84-6300-023 (10-68)

DISTRIBUTION: WHITE – ACCOMPANY SHIPMENT (TO SUPERVISOR OF BURIAL GROUND)
YELLOW – RETAIN (TO BUILDING WASTE REPRESENTATIVE)