



7513516-2858  
Department of Energy

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

004129

95-PCA-266

MAY 22 1985

Mr. David L. Lundstrom  
Section Manager  
200 Areas  
Nuclear Waste Program  
State of Washington  
Department of Ecology  
1315 West Fourth Avenue  
Kennewick, Washington 99336

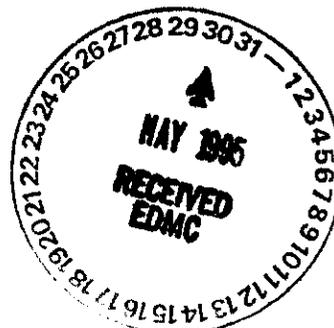
Mr. Douglas R. Sherwood  
Hanford Project Manager  
U.S. Environmental Protection Agency  
712 Swift Boulevard, Suite 5  
Richland, Washington 99352

Dear Messrs. Lundstrom and Sherwood:

HANFORD FACILITY DANGEROUS WASTE PERMIT APPLICATION, PART A, FORM 3,  
REVISION 0, FOR THE SODIUM STORAGE FACILITY AND SODIUM REACTION FACILITY  
(SSF and SRF) (WA7890008967) (TSD: TS-4-1)

Enclosed is the Hanford Facility Dangerous Waste Permit Application, Part A, Form 3, Revision 0, for the Sodium Storage Facility and Sodium Reaction Facility. The SSF and SRF will be located adjacent to the Fast Flux Test Facility (FFTF) in the 400 Area of the Hanford Facility. The SSF and SRF will be used for greater-than-90-day storage and treatment of liquid sodium coolant drained from the FFTF. The SSF and SRF Part A, Form 3, will support the transition of the FFTF to a safe and stable shutdown condition. This action also is in support of the SSF and SRF Notice of Intent currently on file with the State of Washington Department of Ecology.

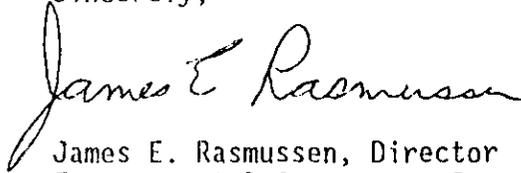
The Part A, Form 3, was written in compliance with Washington Administrative Code 173-303. This regulation requires the submittal of a Part A, Form 3, for new storage and treatment activities at a treatment, storage, and/or disposal facility under interim status.



Messrs. Lundstrom and Sherwood -2-  
95-PCA-266

Should you have any questions regarding the SSF and SRF Part A, Form 3, please contact Mr. C. E. Clark of the U.S. Department of Energy, Richland Operations Office on (509) 376-9333 or Mr. R. C. Bowman of the Westinghouse Hanford Company on (509) 376-4876.

Sincerely,



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

EAP:CEC



William T. Dixon, Director  
Environmental Services  
Westinghouse Hanford Company

Enclosure:  
Sodium Storage Facility and  
Sodium Reaction Facility  
Part A Permit Application  
Form 3, Revision 0

cc w/encl:  
EDMC, H6-08  
R. Bowman, WHC  
D. Duncan EPA  
M. Jaraysi, Ecology  
R. Jim, YIN  
S. McKinney, Ecology  
T. Michelena, Ecology  
D. Powaukee, NPT  
S. Price, WHC  
J. Wilkinson, CTUIR

cc w/o encl:  
W. Dixon, WHC



ENCLOSURE

Please print or type in the unshaded areas only  
 (fill-in areas are spaced for elite type, i.e., 12 character/inch).

<b>FORM</b> <b>3</b>	<b>DANGEROUS WASTE PERMIT APPLICATION</b>	1. EPA/STATE I.D. NUMBER <b>WA7890008967</b>
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FOR OFFICIAL USE ONLY	
APPLICATION APPROVED	DATE RECEIVED (mo., day, & yr.)
COMMENTS	

**II. FIRST OR REVISED APPLICATION**

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

**A. FIRST APPLICATION (place an "X" below and provide the appropriate date)**

<input type="checkbox"/> 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)	<input type="checkbox"/> 2. NEW FACILITY (Complete item below)
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MO.	DAY	YR.	FOR EXISTING FACILITIES, PROVIDE THE DATE (mo., day, & yr.) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

MO.	DAY	YR.	FOR NEW FACILITIES, PROVIDE THE DATE (mo., day, & yr) OPERATION BEGAN OR IS EXPECTED TO BEGIN
0	4	9	7

**B. REVISED APPLICATION (place an "X" below and complete Section I above)**

<input checked="" type="checkbox"/> 1. FACILITY HAS AN INTERIM STATUS PERMIT	<input type="checkbox"/> 2. FACILITY HAS A FINAL PERMIT
--	---

**III. PROCESSES - CODES AND CAPACITIES**

**A. PROCESS CODE** - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the (Section III-C).

**B. PROCESS DESIGN CAPACITY** - For each code entered in column A enter the capacity of the process.

1. AMOUNT - Enter the amount.
2. UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY	PROCESS	PRO-CESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
<b>Storage:</b>			<b>Treatment:</b>		
CONTAINER (barrel, drum, etc)	S01	GALLONS OR LITERS	TANK	T01	GALLONS PER DAY OR LITERS PER DAY
TANK	S02	GALLONS OR LITERS	SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS	INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS	OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY
<b>Disposal:</b>					
INJECTION WELL	D80	GALLONS OR LITERS			
LANDFILL	D81	ACRE-FEET (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER			
LAND APPLICATION	D82	ACRES OR HECTARES			
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY			
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS			

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	H	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	E		

EXAMPLE FOR COMPLETING SECTION III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY	LINE NUMBER	A. PRO-CESS CODE (from list above)	B. PROCESS DESIGN CAPACITY			FOR OFFICIAL USE ONLY
		1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)						1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	
X-1	S 0 2	600	G			5					
X-2	T 0 3	20	E			6					
1	S 0 2	1,105,337	L			7					
2	T 0 1	2,700	V			8					
3						9					
4						10					

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "T04"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

S02

The Sodium Storage Facility (SSF) will be located adjacent to the Fast Flux Test Facility (FFTF) in the 400 Area of the Hanford Facility and will consist of three 302,832 liter (80,000 gallon) tanks and one 196,841 liter (52,000 gallon) tank contained within a concrete structure approximately 27.7 meters (91 feet) long by 27.4 meters (90 feet) wide by 9.1 meters (30 feet) high. The SSF will receive liquid sodium containing trace amounts of potassium through batch transfers from the FFTF by way of transfer lines connecting the two facilities. The SSF also may receive and store sodium from other Hanford Facility operations on a case by case basis. The sodium will be stored in the SSF until transfer to the Sodium Reaction Facility (SRF) for treatment. The total process design capacity for the four SSF storage tanks will be 1,105,337 liters (292,000 gallons).

T01

The Sodium Reaction Facility (SRF) will be located near the SSF and will consist of a 757 liter (200 gallon) reaction vessel and ancillary equipment contained in a concrete and steel structure approximately 19.8 meters (65 feet) long by 17.4 meters (57 feet) wide by 10.7 meters (35 feet) high. The sodium reaction process will consist of injecting molten sodium metal containing trace amounts of potassium and water into the reaction vessel that will be partially filled with 30 to 50 percent sodium hydroxide at approximately 116°C (240°F). Reaction products include sodium hydroxide and hydrogen gas. The hydrogen gas will be removed from the reaction vessel by a nitrogen cover gas purge and maintained at sufficiently low levels so as not to be flammable when mixed with air. The sodium hydroxide solution will be reacted with sulfuric acid to produce sodium sulfate, which will be dried and placed into 208 liter (55 gallon) containers for transfer to a Hanford Facility disposal site. The SRF also may receive and treat sodium from other Hanford Facility operations on a case by case basis. The total treatment design capacity for the SRF will be 2,700 liters (715 gallons) per day.

IV. DESCRIPTION OF DANGEROUS WASTES

- A. DANGEROUS WASTE NUMBER - Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.
- B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.
- C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV (shown in line numbers X-1, X-2, X-3, and X-4 below) - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE	A. DANGEROUS WASTE NO. (enter code)				B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES	
	1. PROCESS CODES (enter)		2. PROCESS DESCRIPTION (if a code is not entered in D(1))					
X-1	K	0	5	4	900	P	T 0 3	D 8 0
X-2	D	0	0	2	400	P	T 0 3	D 8 0
X-3	D	0	0	1	100	P	T 0 3	D 8 0
X-4	D	0	0	2			T 0 3	D 8 0
								included with above

Continued from page 2.  
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I.D. NUMBER (entered from page 1)									
W A 7 8 9 0 0 0 B 9 6 7									
IV. DESCRIPTION OF DANGEROUS WASTES (continued)									
LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES				2. PROCESS DESCRIPTION (if a code is not entered in D(1))	
				1. PROCESS CODES (enter)					
1	D 0 0 1	955,000	K	S02	T01				Storage - Tank/Treatment - Tank
2	D 0 0 2		↓	↓	↓				↓
3	D 0 0 3		↓	↓	↓				Included With Above
4									
5									
6									
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26									

Continued from the front.

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

The dangerous waste managed at the SSF and SRF will consist of metallic sodium containing trace amounts of potassium that designates as ignitable dangerous waste (D001), corrosive dangerous waste (D002), and reactive dangerous waste (D003).

V. FACILITY DRAWING Refer to attached drawing.

All existing facilities must include in the space provided on page 5 a scale drawing of the facility (see instructions for more detail).

VI. PHOTOGRAPHS Refer to attached photographs.

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas (see instructions for more detail).

VII. FACILITY GEOGRAPHIC LOCATION This information is provided on the attached drawings and photos.

LATITUDE (degrees, minutes, & seconds)	LONGITUDE (degrees, minutes, & seconds)

VIII. FACILITY OWNER

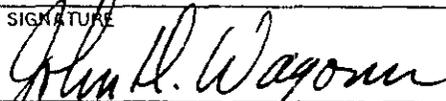
A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER			2. PHONE NO. (area code & no.)		
3. STREET OR P.O. BOX		4. CITY OR TOWN		5. ST.	6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type) John D. Wagoner, Manager U.S. Department of Energy Richland Operations Office	SIGNATURE 	DATE SIGNED 5/1/95
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X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME (print or type)  SEE ATTACHMENT	SIGNATURE	DATE SIGNED
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X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

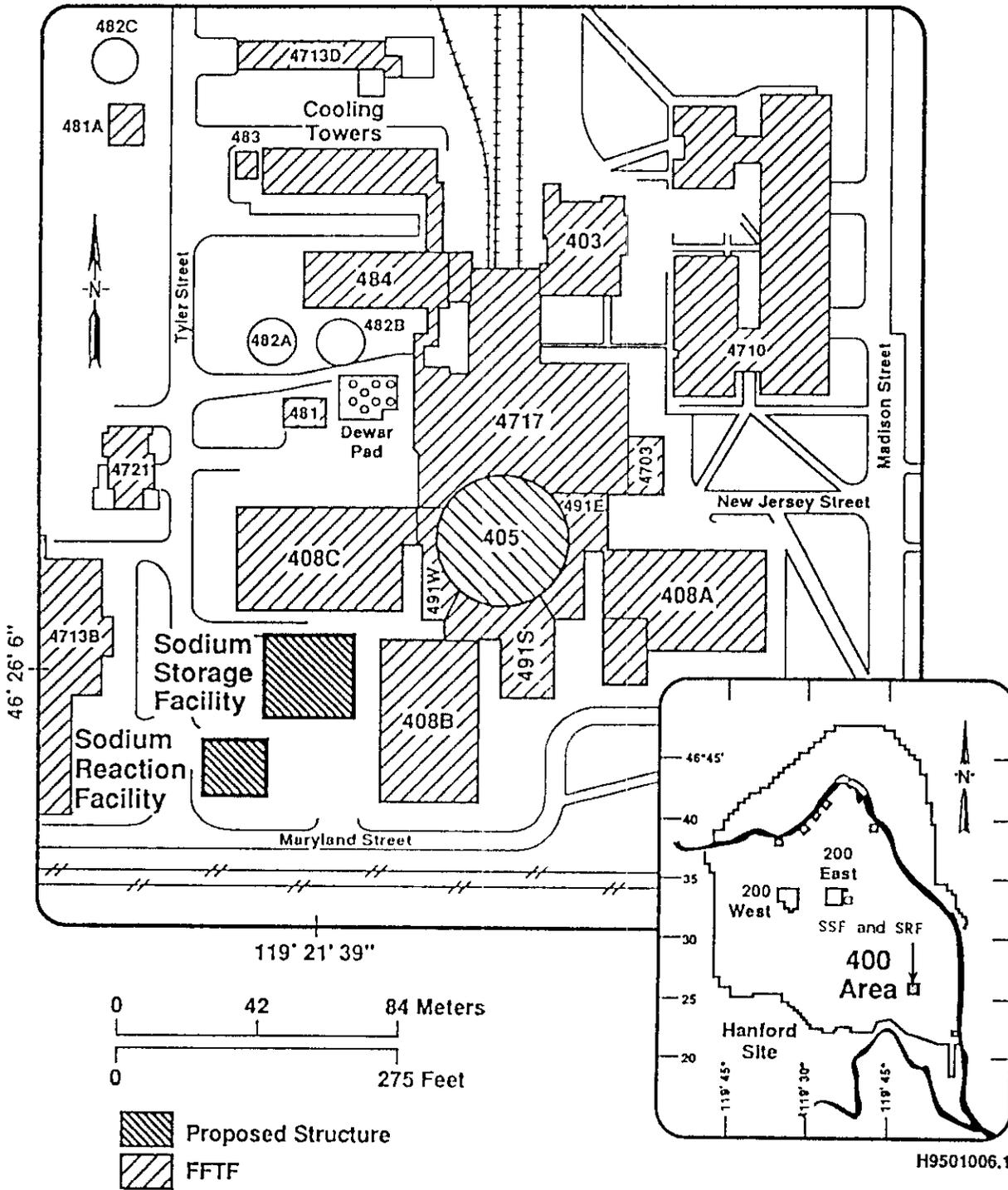
John D. Wagoner  
Owner/Operator  
John D. Wagoner, Manager  
U.S. Department of Energy  
Richland Operations Office

5/1/95  
Date

A. LaMar Trego  
Co-operator  
A. LaMar Trego, President  
Westinghouse Hanford Company

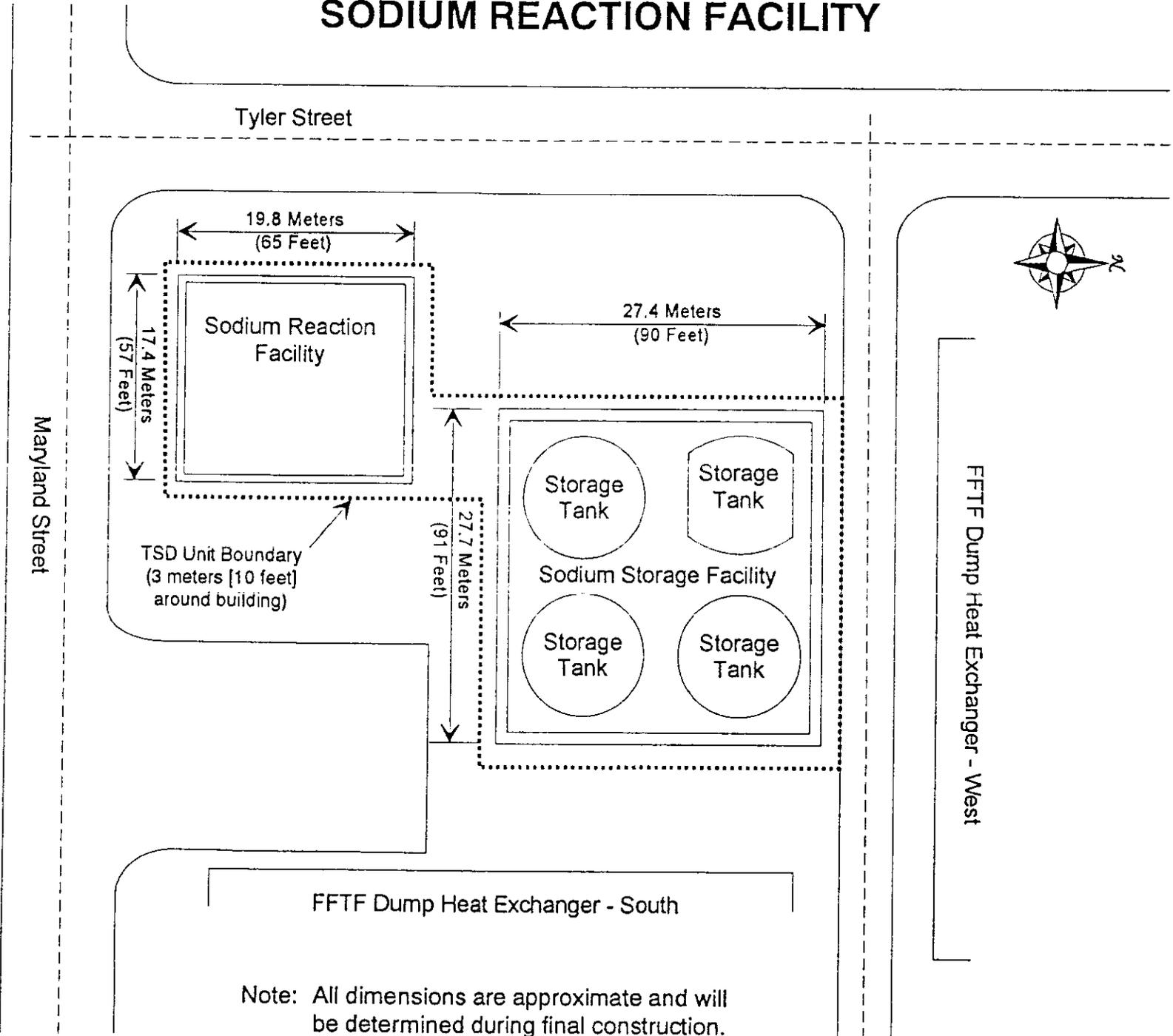
4/4/95  
Date

# Sodium Storage Facility and Sodium Reaction Facility Site Plan



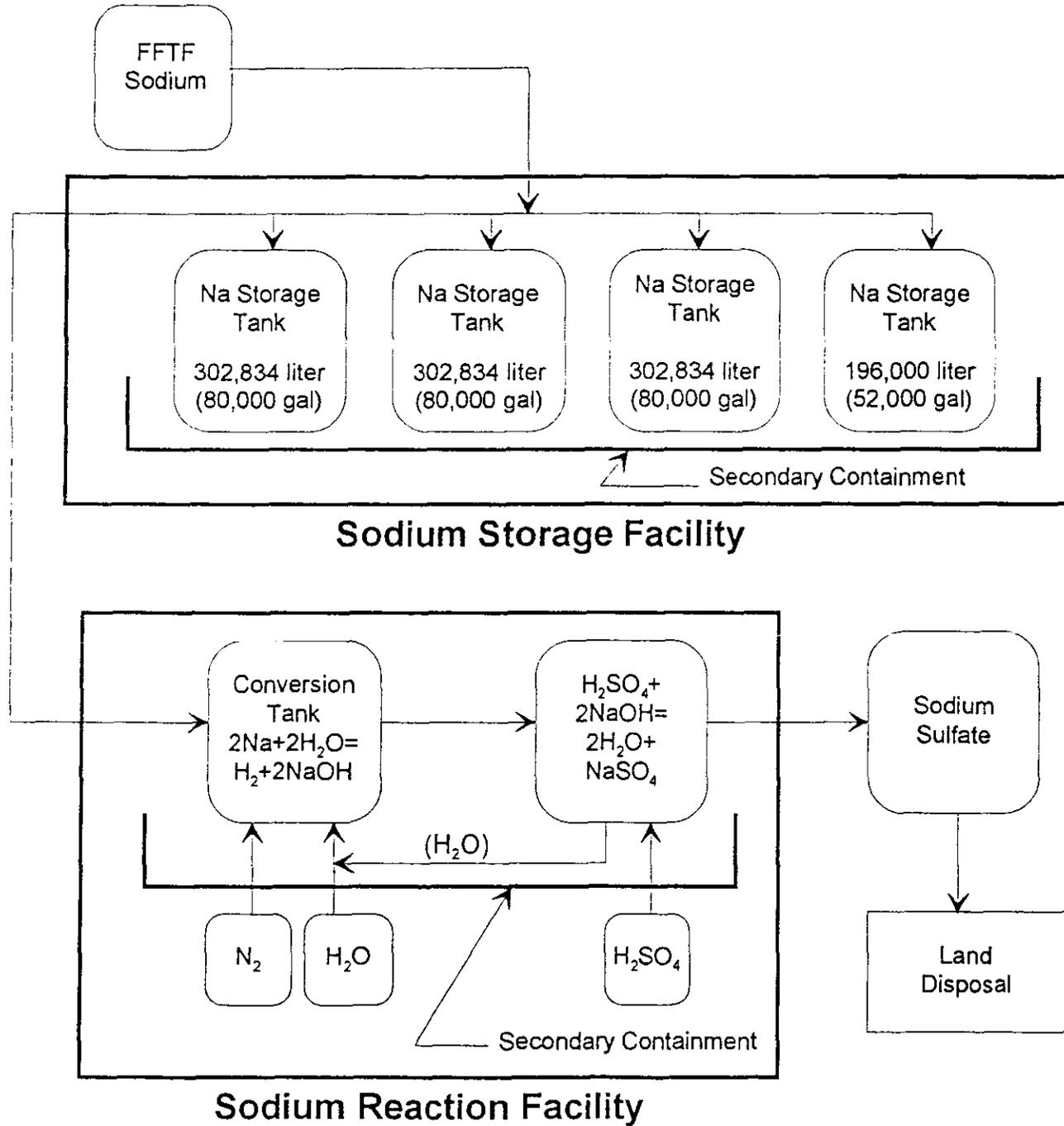
H9501006.1

# SODIUM STORAGE FACILITY AND SODIUM REACTION FACILITY

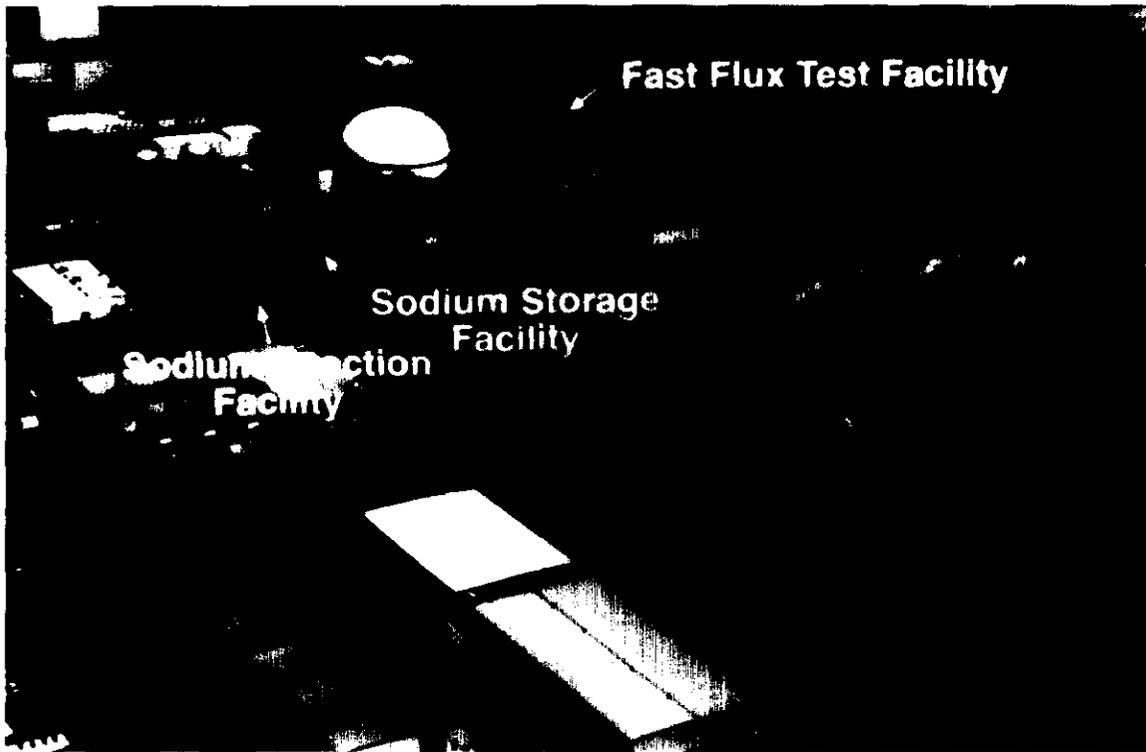


Note: All dimensions are approximate and will be determined during final construction.

# PROCESS FLOW DIAGRAM



# SODIUM STORAGE FACILITY AND SODIUM REACTION FACILITY



46°26'06"  
119°21'39"

95021055-1CN  
(PHOTO TAKEN 1995)