



AK RIDGE RESERVATION

Environmental Management

October 8, 1997

Mr. Rod Nelson
Assistant Manager Environmental Management
DOE/ORO
P.O. Box 2001
Oak Ridge, TN 37831

Dear Mr. Nelson:

The Oak Ridge Reservation Environmental Management Site Specific Advisory Board (ORREMSSAB) approved the enclosed recommendation on the Toxic Substances Control Act Incinerator (TSCA) Waste Streams Management at our October 1, 1997 regular monthly Board meeting. The recommendation was forwarded to the Board from our FY 97 Waste Management Committee.

We appreciate the opportunity to submit our comments on the TSCA Waste Streams Management. We look forward to your written responses to our recommendations.

Thank you for your continued support of the ORREMSSAB.

Sincerely,

William M. Pardue
Chair

WMP/sb

Enclosure

cc: J. Hankinson, USEPA Region IV
E. Leming, TDEC
S. Gawarecki, LOC
S. Ulrikson, DOE/ORO
ORREMSSAB Members



Oak Ridge Reservation Environmental Management Site Specific Advisory Board

Toxic Substances Control Act Incinerator Waste Streams Management Recommendations

The FY 97 Oak Ridge Reservation Environmental Management Site Specific Advisory Board (ORREMSSAB) Waste Management (WM) Committee has completed a review of Toxic Substances Control Act Incinerator (TSCAI) waste streams management including the out-of-compliance mis-shipment of TSCAI ash to the Y-12 Landfill Site. An outline of our study is attached (Attachment 1.)

Based on our study, the ORREMSSAB submits the following recommendations:

Recommendation 1

For the Department of Energy (DOE) to review the process used by waste storage personnel to initiate shipment of TSCAI wastes.

Recommendation 2

Waste storage personnel should never fill out forms to initiate the shipment of TSCAI waste - only the generator of the waste should complete the forms.

Rationale for Recommendations 1 and 2: "The Disposal of Mixed Waste at the Y-12 Industrial Landfill V Investigation Team Report," explains the process used to send waste to the Waste Transportation and Storage Operation (WTSO) which is at the East Tennessee Technology Park and the process used by WTSO to ship this waste from its storage area.

The WM Committee believes that the WTSO serves as stewards or custodians of the waste stored at the WTSO. Supervisors of personnel at WTSO should not have the power or the authority to label, re-label, or initiate the shipment of any waste that is not their own. The power and authority to label, re-label, and initiate the shipment of waste should reside with the generator. Any assistance the WTSO gives to the generator in labeling or shipping waste should be authorized in written form by the original generator and the waste coordination division.

Recommendation 3

Clearly differentiate, through documentation, between the management and processing of TSCAI waste in storage and newly generated waste.

Rationale for Recommendation 3: Any waste from the generator should carry the generator's original documentation with it from initial generation to final disposal. The present system allows waste (especially batched waste or re-characterized waste) to lose its identity.

Recommendation 4

For the Office of Environmental Management at the Oak Ridge Reservation (ORR) to produce, by the end of FY 1997-98, a TSCAI Fact Sheet incorporating the questions and answers generated during the WM Committee's study of TSCAI (Attachment 2.) To also provide annual update of this Fact Sheet addressing the same issues (i.e., transportation routes, waste volumes and types, toxicity levels of treated waste, other sites utilizing TSCAI, sites for final disposal for TSCAI waste, etc.)

Recommendation 5

To develop at ORR an integrated computer system which can track TSCAI waste as it moves from site to site on the facility and leaving ORR.

Recommendation 6

To consider such a system (see #5) DOE Complex nationwide so TSCAI waste can be inventoried and tracked from its generation through treatment, storage, and final disposal.

Recommendation 7

DOE continue to support national forums such as the National Dialogue and specifically request SSABs to work jointly to make coordinated recommendations on state equity issues, which would include among other considerations the shipment and processing of out of state waste at TSCAI.

Recommendation 8

DOE review operations and procedures at all waste transportation and storage operations at the Oak Ridge Reservation and consider applying recommendations 1, 2, 3, 5, and 6 to all waste streams that are handled in these facilities.

Attachments (2)

**Outline of FY 97 WM Committee Study and References for
Toxic Substances Control Act Incinerator Waste Streams Management
Recommendation**

The following documents and presentations were relied on by the WM Committee in the formulation of its recommendation:

- | | |
|-----------------|---|
| March 11, 1997 | TSCAI (Developed questions for DOE for waste streams) |
| April 8, 1997 | Incinerable Waste Streams at ORR as outlined in Site Treatment Plan (STP), Joy Sager, DOE/ORO |
| April 23, 1997 | TSCAI Presentation, Dr. Vince Adams, DOE/ORO |
| June 27, 1997 | Tour of TSCAI Secondary Waste Streams at ETP |
| July 1997 | Review of "The Disposal of Mixed Waste at Y-12 Industrial Landfill Investigation Team Report" (WM members sent copy of report to study.) |
| August 7, 1997 | Review and discussion TSCAI related subjects (STPs, Questions and Answers on TSCAI previously submitted to DOE on 4/8/97, Y-12 Landfill Investigative Report) |
| August 14, 1997 | Discuss Recommendations on TSCAI and Y-12 Landfill Site Incident |

Other sources of information which served as background for the Committee's work:

- | | |
|-------------------|---|
| November 12, 1996 | <ul style="list-style-type: none">• Envirocare & Waste Isolation Pilot Plant Tours Report• Nevada Test Site Update• DOE Transportation Management, Brady Lester, DOE/ORO• DOE Packaging, Marvin Bennett, DOE/ORO |
| December 10, 1996 | "Site Treatment Plan Update," Joy Sager, DOE/ORO |
| February 11, 1997 | "Remote Handled Low Level Waste Strategy," Bill Gilbert, DOE/ORO |

**TOXIC SUBSTANCES CONTROL ACT (TSCA) INCINERATOR
ORREMSSAB WASTE MANAGEMENT COMMITTEE
QUESTIONS**

Vince Adams

1. When was the TSCA Incinerator built?
2. Who built the TSCA Incinerator?
3. Who designed the TSCA Incinerator?
4. Can I get a blueprint of the TSCA Incinerator?
5. Obtain a list of contaminants tested for in the trial burns?
6. Who permits the TSCA Incinerator?
7. What regulatory agency does the TSCA Incinerator report to?
8. Need copies of the RCRA operating permit (main volume).
9. Need copies of other TSCA Incinerator permits.
10. What are the waste streams going into the TSCA Incinerator and their characteristics (PCB's, radioactive element, hazardous components, etc.)?

Joy Sager

1. Can we get Site Treatment Plans (STPs) from other DOE Sites?
2. What will be the transportation routes from other sites shipping waste to the TSCA Incinerator?
3. Explain the Categorization of the EPA waste codes, e.g. D, P, U, K, and F.
4. Where are the wastes coming from?
5. What are the volume of wastes coming into the TSCA Incinerator?
6. Exactly what does it mean to describe TSCA Incinerator as a "National Resource" (Alm's Ten Year Plan)?
7. What are the plans or projections for taking out-of-state waste into TSCA Incinerator?
8. What is the ratio of all waste coming into TSCA Incinerator (in-state and out-of-state waste) to all waste leaving Oak Ridge for final disposal?
9. What are the final disposal options for ash residues from the TSCA Incinerator?

ORREMSAB WASTE MANAGEMENT COMMITTEE

April 8, 1997

1. **Can we get Site Treatment Plans from other DOE Sites?** Yes. The Site Treatment Plans from other Sites will be provided as they become available. Bryan Westich is working with DOE-HQ to obtain copies from all of the DOE sites by April 30, 1997. Site Treatment Plans are periodically revised and reissued; sites which did not originally plan to send waste to the TSCA Incinerator may revise their plan and add the incinerator for treatment of waste.
2. **What will be the transportation routes from other sites shipping waste to the TSCA Incinerator?** The transportation routes will be determined by the carrier. DOT-prescribed routes will be used for hazardous materials (e.g. I-640 bypass around Knoxville). If no prescribed route is designated by DOT or the States, the carrier will select the most direct route.
3. **Explain the categorization of the EPA waste codes, e.g. D, P, U, K, and F.** D wastes are any wastes which exhibit a specific characteristic (i.e. ignitability, corrosivity, reactivity, or toxicity). F wastes are wastes from "non-specific sources"; F wastes include spent solvents and specific wastes from particular processes (e.g. spent cyanide plating bath solution from electroplating operations). K wastes are wastes from specific sources such as wood preservation processes, chemical production, explosives manufacturing, etc. U and P wastes are discarded commercial chemical products, off-specification species, container residues and spill residues of these chemicals. U wastes are toxic wastes, while P wastes are acute hazardous wastes. P wastes are subject to lower quantity limits than U wastes for short-term accumulation by generators U wastes. 40 CFR 261, Subpart B provides the criteria for identifying the characteristics of hazardous waste and for listing hazardous waste. Copies of these sections of the regulations can be provided.
4. **Where are the wastes coming from?** Wastes come from all three Oak Ridge facilities for treatment at the incinerator. Wastes from the Y-12 Site are from defense programs activities including primarily machining and maintenance activities. Wastes from the ORNL are from energy research activities. Wastes from the ETTP are primarily from cleanup and maintenance activities. Out-of-state sites which sent waste to the incinerator prior to 1996 are - Colonie Site (New York), Fernald Environmental Management Project (Ohio), Paducah Gaseous Diffusion Plant (Kentucky), Portsmouth Gaseous Diffusion Plant (Ohio), and RMI (Ohio). Sites which were added in 1996 are Rocky Flats Environmental Technology Site (Colorado) and Weldon Spring Site (Missouri). Sites which were added in 1997 are Battelle-Columbus Decommissioning Project (Ohio) and Mound Site (Ohio). Additional sites which included the incinerator for treatment of waste under their original Site Treatment Plans are Argonne-East (Illinois), Brookhaven National Laboratory (New York), Idaho National Engineering and Environmental Laboratory (Idaho), Nevada Test Site (Nevada), and West Valley Demonstration Project (New York). Additional sites which have expressed interest in sending waste to the incinerator are - Bettis Atomic Power Laboratory (Pennsylvania), Hanford Site (Washington), Knolls Atomic Power Laboratory (New York), Lawrence Livermore National Laboratory (California), Los Alamos National Laboratory (New Mexico), Norfolk Naval Shipyard (Virginia), Pearl Harbor Naval Shipyard (Hawaii), Pinellas Site (Florida), Puget Sound Naval Shipyard (Washington), Sandia National Laboratory (New Mexico), and Savannah River Site (South Carolina). Many of these sites

have very small quantities of waste identified for treatment (i.e. less than one tanker or truckload).

5. What are the volumes of waste coming into the TSCA Incinerator? See the attached Fiscal Year 1997 burn plan (revision 1) and figures showing amounts of waste processed. The quantities of waste coming into the TSCA Incinerator in future years are expected to be approximately the same as what is currently being processed.

6. Exactly what does it mean to describe TSCA Incinerator as a "national resource" (Alm's Ten Year Plan)? The TSCA Incinerator provides a unique treatment capability which is needed by DOE sites throughout the national DOE complex. Therefore, it is considered to be a national resource for treatment of waste from throughout the DOE complex. In a similar manner, the Waste Isolation Pilot Project (WIPP in New Mexico) is considered a national resource for disposal of transuranic waste and the Nevada Test Site in Nevada is considered a national resource for disposal of low-level radioactive waste.

7. What are the plans or projections for taking out-of-state waste into TSCA Incinerator?

The FY 1997 burn plan for the incinerator is attached. The draft FY 1998 burn plan for the incinerator will be developed for transmittal to the State by June 30, 1997. An integrated long-range burn plan for the three DOE incinerators (Oak Ridge, Idaho, and Savannah River Site) is being developed and is currently scheduled to be available in September, 1997.

8. What is the ratio of all waste coming into TSCA Incinerator (in-state and out-of-state waste) to all waste leaving Oak Ridge for final disposal? In FY 1997, the projected ratio is 0.18 (i.e. 100 cubic meters of waste leave Oak Ridge for final disposal for every 18 cubic meters coming into the TSCA incinerator for treatment). That ratio is expected to decrease substantially through the ten-year plan period, as Oak Ridge's disposal of legacy low-level waste and transuranic waste to Nevada Test Site and WIPP, respectively, is initiated.

9. What are the final disposal options for ash residues from the TSCA Incinerator? The primary final disposal option for ash residues from the incinerator is currently the Envirocare facility in Utah. Out-of-state sites are also required to provide contingency plans for return of residuals in the event Oak Ridge cannot send the residues to Envirocare. In some cases, the returned residuals could possibly be disposed at the generating sites, if those sites have onsite CERCLA or mixed waste disposal facilities. For example, the Weldon Spring Site in Missouri could potentially dispose returned residues in its onsite disposal cell. DOE also has mixed waste disposal facilities at the Hanford Site in Washington and the Nevada Test Site. The Hanford Site has been recommended as a mixed waste disposal site for the complex, in addition to commercial disposal.



Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831-8620
March 31, 1997

Jay Sager

Mr. Bill Childres
DOE Oversight STP Manager
Tennessee Department of Environment
and Conservation
761 Emory Valley Road
Oak Ridge, Tennessee 37830

Mr. Wayne Gregory
Oak Ridge Site Treatment Plan Manager
Tennessee Department of Environment
and Conservation
401 Church Street
5th Floor, L&C Tower
Nashville, Tennessee 37243

Gentlemen:

TOXIC SUBSTANCES CONTROL ACT INCINERATOR FISCAL YEAR 1997 BURN
PLAN - REVISION 1

Enclosed is Revision 1 of the Fiscal Year (FY) 1997 Toxic Substances Control Act Incinerator Burn Plan. Revision 1 supersedes Revision 0 of the burn plan provided to you in the November 12, 1996, letter from Jay L. Sager. Significant changes to the burn plan are:

- East Tennessee Technology Park liquid waste is significantly increased in the plan.
- Los Alamos National Laboratory waste is eliminated from the plan.
- Idaho National Engineering and Environmental Laboratory (INEEL) waste is eliminated from the plan. INEEL waste is still anticipated to be received at the Incinerator in the last quarter of FY 1997, pending a successful outcome of the application process, but will not be treated until FY 1998.
- Rocky Flats waste is reduced in the plan. Additional Rocky Flats waste will be treated in FY 1998, pending a successful outcome of the application process for additional waste.
- Weldon Spring Site solid waste is added to the plan, pending successful outcome of the application process; this waste will be subject to the provisions of the pending agreement between the Department of Energy and the State of Tennessee.

Under Revision 1 of the burn plan, the Site Treatment Plan milestone for completing treatment of 400,000 kilograms (881,840 pounds) of Oak Ridge incinerable mixed waste liquids and 200,000 kilograms (440,920 pounds) of Oak Ridge incinerable (combustible) mixed waste solids will be met and exceeded.


Mr. Bill Childres

Mr. Wayne Gregory

March 31, 1997

If you have questions or need additional information, please call Joy Sager of my staff at (423) 576-0850.

Sincerely,



Suzanne P. Riddle, Acting Director
Waste Management and Technology
Development Division

Enclosure

cc w/enclosure:

V. Adams, EW-922, ORO

N. Carnes, CC-10, ORO

B. Hightower/A. Riverz, K-1037, MS 7357

Attachment 1
 FY 1997 TSCA Burn Plan Summary for Incinerable Liquids
 (waste quantities in lb)

Site	Burn Actuals October 1996 - January 1997	Planned February - September 1997 Rev. 1	Total Planned FY 1997 Rev. 1	Total Planned FY 1997 Rev. 0	Variance
K-25	89,550	642,448	732,008	321,050	410,9
Y-12	177,449	277,958	455,417	419,650	35,7
ORNL	0	135,259	135,259	197,227	-61,9
In-State	257,009	1,055,585	1,322,694	937,947	384,7
Battelle - BCLDP	0	3,840	3,840	3,840	
FERMCO - FEMP	4,318	140,000	144,318	140,000	4,3
INEL	0	0	0	2,388	-2,3
Los Alamos	0	0	0	60,800	-60,8
MOUND	0	3,900	3,900	3,900	
Nevada Test Site	0	0	0	0	
PGDP	46,679	193,000	239,679	193,000	46,6
PORTS	13,523	335,477	350,000	285,600	63,4
Rocky Flats	78,315	70,900	149,215	283,500	-134,3
Weldon Spring	0	30,000	30,000	30,000	
Out-of-State	142,835	778,117	920,952	1,004,125	-83,2
Grand Total	409,844	1,833,802	2,243,645	1,942,075	301,6
In-State	257,009	1,055,585	1,322,694	937,947	384,7
Out-of-State	142,835	778,117	920,952	1,004,128	-83,2
Grand Total	409,844	1,833,802	2,243,645	1,942,075	301,6
* Variance = Rev. 1 - Rev. 0					

Attachment 3

FY 1997 TSCA Burn Plan Summary for Incinerable Solids (waste quantities in lb)

Burn Actuals

October 1995 - January 1997

Site	Combustible solids (C-solids)	Non-Combustible Solids (NC-Solids)	Soils	Total
K-25	34,179	0	10,639	44,818
Y-12	0	0	18,016	18,016
ORNL	0	0	0	0
Total	34,179	0	28,655	62,834

Planned

February - September 1997

Site	Combustible solids (C-solids)	Non-Combustible Solids (NC-Solids)	Soils	Total Available	Total Target
K-25	559,079	102,501	25,163	686,743	
Y-12	81,639	0	24,694	106,333	
ORNL	2,420	12,045	0	14,465	
Weldon Spring	5,000	0	0	5,000	
Total	648,138	114,546	49,857	812,541	812,541

Burn Plan
Revision 1

Site	Combustible solids (C-solids)	Non-Combustible Solids (NC-Solids)	Soils	Total Available	Total Targ
K-25	593,258	102,501	35,802	731,561	
Y-12	81,639	0	42,710	124,349	
ORNL	2,420	12,045	0	14,465	
Weldon Spring	5,000	0	0	5,000	
Total	682,317	114,546	78,512	875,375	875,375

Burn Plan
Revision 0

Site	Combustible solids (C-solids)	Non-Combustible Solids (NC-Solids)	Soils	Total Available	Total Target
K-25	553,477	438,472	0	1,021,949	
Y-12	75,005	9,127	173,832	257,964	
ORNL	13,200	44,052	0	57,252	
Total	671,682	491,651	173,832	1,337,205	1,000,000

Burn Plan
Variance*

Site	Combustible solids (C-solids)	Non-Combustible Solids (NC-Solids)	Soils	Total Available	Total Target
K-25	9,781	-335,971	35,802	-290,388	
Y-12	6,634	-9,127	-131,122	-133,615	
ORNL	-10,780	-32,047	0	-42,827	
Weldon Spring	5,000	0	0	5,000	
Total	10,535	-377,145	-95,320	-451,930	-12

* Variance = Rev. 1 - Rev. 0

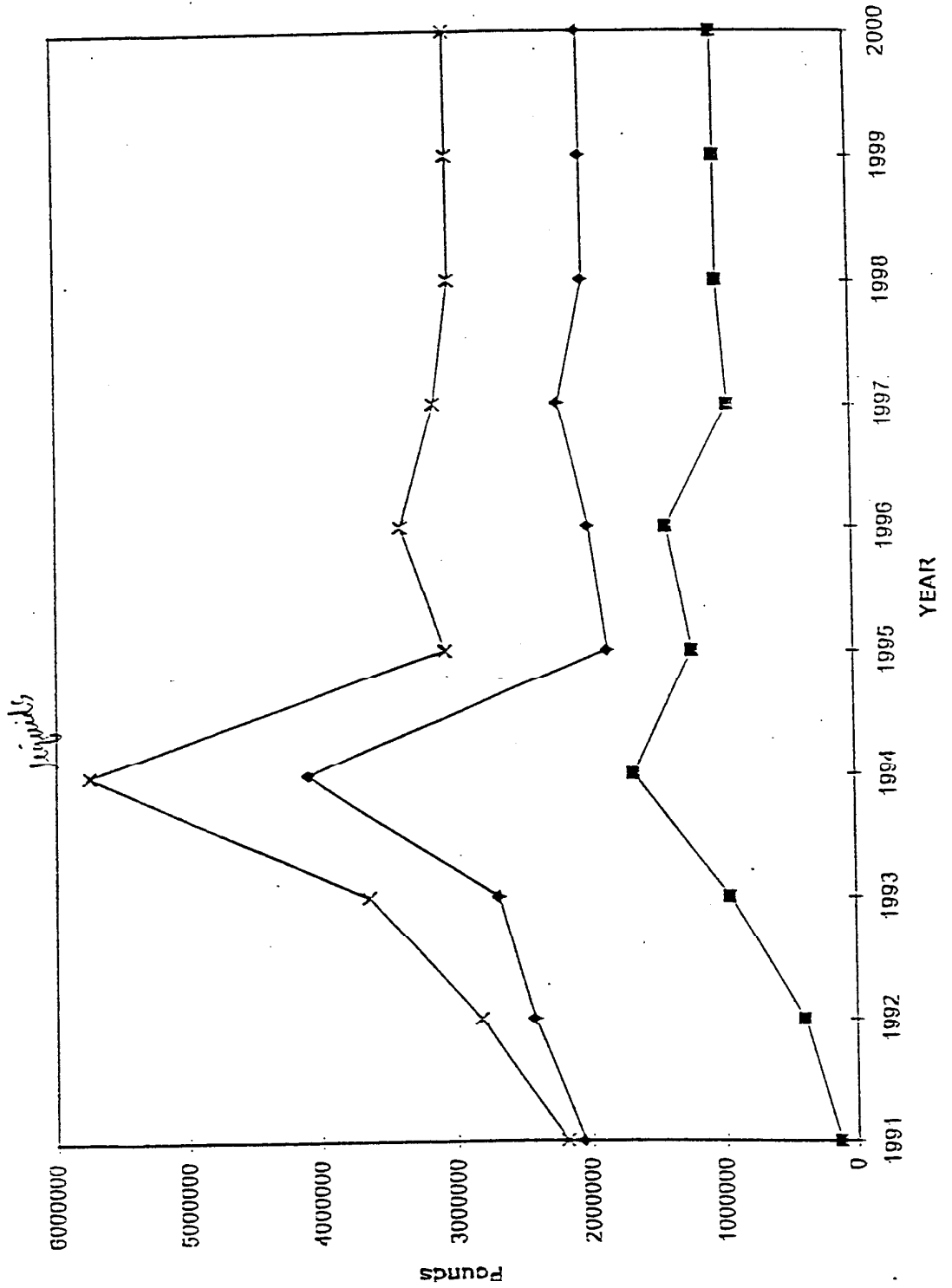
Attachment 4
 FY 1997 TSCA Durn Targets for Incinerable Solids (waste quantities in lb)

Site	Oct-96	Nov-96	Dec-96	Jan-97	Feb-97	Mar-97	Apr-97	May-97	Jun-97	Jul-97	Aug-97	Sep-97	Total
26													
Combustible solids (C-solids)	20,490	0	0	5,801	91,512	86,712	99,871	55,000	77,500	66,669	23,544	50,191	593,250
Non-Combustible Solids (NC-Solids)		0	0	0	14,975	0	0	0	18,347	25,000	24,005	20,174	102,501
Solids	540	0	0	10,099	5,233	0	0	0	0	10,000	9,930	0	35,002
K-26 Total	29,030	0	0	15,700	111,720	86,712	99,871	55,000	95,927	101,669	57,479	70,365	731,501
12													
Combustible solids (C-solids)	0	0	0	0	0	0	0	1,651	0,577	0	46,565	24,848	01,639
Non-Combustible Solids (NC-Solids)		0	0	0	0	0	0	0	0	0	0	0	0
Solids	10,010	0	0	0	0	15,000	9,694	1,651	0,577	0	46,565	24,848	124,349
Y-12 Total	10,010	0	0	0	0	15,000	9,694	1,651	0,577	0	46,565	24,848	124,349
ORNL													
Combustible solids (C-solids)										2,420		0	2,420
Non-Combustible Solids (NC-Solids)													
Solids													
ORNL Total													
Weldon Spring													
Combustible solids (C-solids)													
Non-Combustible Solids (NC-Solids)													
Solids													
Weldon Spring Total													
Total	47,054	0	0	16,700	111,720	101,712	114,565	56,651	104,504	110,009	110,009	103,211	875,375

TSCA INCINERATOR WASTE TREATMENT

- Since the incinerator began operation, the percentage of waste treated which originates from DOE facilities outside Tennessee has varied from 6% (1991) to 41% (1996). Under the current FY 1997 treatment plan, 30% of the waste treated will be from outside Tennessee.
- During the incinerator's peak year (1994), 29% of the waste was from outside Tennessee.
- The total amount of waste incinerated per year has decreased as the large backlog of liquid waste from Oak Ridge facilities has been reduced. The incinerator began treatment of solid waste in FY 1996; solid waste is treated at a lower rate than liquid waste.
- At least 14 DOE sites identified the TSCA Incinerator as a treatment option for waste covered under the Federal Facility Compliance Act; several of these sites had/have associated milestones for shipment of waste to the incinerator.
- Approximately 10 additional DOE sites which have not previously shipped waste to the incinerator have expressed an interest in sending waste for treatment at the incinerator; however, the amounts of waste requiring treatment have not been confirmed.
- Current projections for future years are that the incinerator will continue to treat approximately 2 million pounds of liquids per year and approximately 1 million pounds of solids per year. However, these projections will be heavily influenced by 1) treatment requirements under various PCB agreements, 2) environmental restoration activities which may generate waste for treatment, and 3) the potential development of other cost-effective options not currently available.
- Future year treatment plans will be based on 1) site needs identified in the ten-year plans and 2) results of the complex-wide EM integration effort.

TSCA INCINERATOR WASTE TREATMENT



◆ In-state
■ Out-of-state
△ TOTAL

YEAR	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
In-state(liq)	2058394	2413922	2668726	4002735	1840529	1731424	1322694			
In-state(sol)						246911	870375			
In-state	2058394	2413922	2668726	4002735	1840529	1978335	2193069	2000000	2000000	2000000
Out-of-state	126360	395592	951535	1656794	1212759	1392378	925952	1000000	1000000	1000000
TOTAL	2104754	2809514	3620261	5739529	3053288	3370713	3119021	3000000	3000000	3000000
%out-of-state	5.70%	14.08%	26.20%	28.07%	39.72%	41.31%	29.69%	33.33%	33.33%	33.33%

(rev|plan)