ORGDP

OAK RIDGE GASEOUS DIFFUSION PLANT

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OAK RIDGE GASEOUS DIFFUSION PLANT
HISTORICAL CHEMICAL RELEASE REPORT

S. T. Goodpasture and J. G. Rogers

Environmental Management Department
Health, Safety, and Environmental Affairs

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HISTORICAL CHEMICAL RELEASE REPORT
ORGDP CHEMICAL LIST

Chemical Name	Time Period Records Available	Quantities
Acetic Acid	79-85	979,032 lb
Acetone	79-85	8,950 gal
Acetylene	79-85	1,181,200 cuft
Ammonium Hydroxide	79-85	1,881 lb
Anhydrous Ammonia	79-85	50,550 lb
Asbestos	79-85	193,817 sqft
Bezene	79-85	12 gal
Betz 35A	79-85	9,520 gal
Betz 45	82-85	13,832 gal
Betz 419	79-85	1,595 gal
Betz 562	79-85	25,730 gal
Betz 1100	79-85	195,300 lbs
Betz 1190	82-85	38,394 gal
Betz 2020	85	275 gal
Betz 2060	85	275 gal
Carbon Tetrachloride	79-85	26 gal
Chlorine, liquid	82-85	696,000 gal
Chlorine Trifluoride	79-85	63,000 lb
Chlorofluorohydrocarbon	79-85	55,050 lb
Chloroform	79-85	170 lb
Chromic Acid	79-85	970 gal
Dichlorotetrafluoroethane (Freon R-114)	73-85	5,610,600 lb
Fluorine	79-85	1,269 lb
Hexane	79-85	348 gal
Hydrochloric Acid	79-85	1,207,042 lb
Hydrofluoric Acid	79-85	778 lb

HISTORICAL CHEMICAL RELEASE REPORT
ORGDP CHEMICAL LIST

Chemical Name	Time Period Records Available	Quantities
Hydrogen	79-85	1,920,900 cuft
Hydrogen Fluoride	79-82	504,580 lb
Lithium Hydroxide	Since early 1960s	~23,000,000 lb
Lead, Radiogenic	Since early 1960s	102,672 lb
Mercury	79-85	3,212 lb
Methylene Chloride	79-85	42,366 lb
Methyl Ethyl Ketone	79-85	69 gal
Nitric Acid	79-85	788,248 lb
Nitrogen	79-85	2,934,140 cuft
Phosphoric Acid	79-85	5,902 lb
Polychlorinated Biphenyls	78-85	7,972,465 kg
Potassium Hydroxide	79-85	991,800 lb
Propanol	79-85	16,973 gal
Sodium Hydroxide	79-85	6,085 lb
Sulfuric Acid	79-85	202,468 gal
Tetrachloroethylene	79-85	23,650 gal
1,1,1-Trichloroethane	79-85	124,656 gal
1,1,2-Trichloro-1,2,2-trifluoroethane/ Acetone (Freon TA)	79-85	16,225 gal
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon TE)	79-85	1,010 gal
1,1,2-Trichloro-1,2,2,-trifluroethane (Freon TP-35)	79-85	10,530 lb

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetic Acid

Uses: Laboratory and converted to a nutrient for Y-12 waste disposal.

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for pH of 6.0 to 9.0. There have been no pH noncompliances due to acetic acid releases.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Acetic Acid	1979	725			100*					
	1980	730			100*					
	1981	560			100*					
	1982	76,951			1*				99†	
	1983	191,306			1*				99†	
	1984	304,433			1*				99†	
	1985	404,327			1*				99†	

*Neutralized
†Material not released to environment but used to produce a nutrient in processing Y-12 waste at Y-12.

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetone

Uses: Solvent, degreaser, cleaner

Solid _____ **Liquid** ___X___ **Gas** _____

Listed as Toxic: **Yes** ___X___ **No** _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Acetone	1979	1,452		15		85*				
	1980	1,407		15		85				
	1981	1,185		15		85				
	1982	1,369		15		85				
	1983	964		15		85				
	1984	981		15		85				
	1985	692		15		85				

*Storage for TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: Acetylene (Prestolite)

Uses: Oxyactylene Torch

Solid _____ **Liquid** _____ **Gas** X

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (cu/ft)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Acetylene	1979	341,390							100*	
	1980	299,240							100	
	1981	292,340							100	
	1982	79,980							100	
	1983	54,100							100	
	1984	73,040							100	
	1985	41,110							100	

*Consumed in oxyacetylene torches.

CHEMICAL RELEASE DATA FORM

Chemical Name: Ammonium Hydroxide

Uses: Laboratory Uses

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

NPDES permit limits for pH are 6.0 to 9.0. There were no pH noncompliances due to NH_4OH releases.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonium Hydroxide	1979	285			50*				50**	
	1980	344			50				50	
	1981	228			50				50	
	1982	296			50				50	
	1983	172			50				50	
	1984	168			50				50	
	1985	388			50				50	

*50% Neutralized Onsite

**50% Commercial Disposal Facility due to high metals

CHEMICAL RELEASE DATA FORM

Chemical Name: Anhydrous Ammonia

Uses: Drawing reporduction

Solid _____ **Liquid** _____ **Gas** __X__

Listed as Toxic: Yes __X__ No _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Ammonia, Anhydrous	1979	8,250		95	5					
	1980	7,800		95	5					
	1981	7,950		95	5					
	1982	7,950		95	5					
	1983	7,500		95	5					
	1984	6,300		95	5					
	1985	4,800		95	5					

CHEMICAL RELEASE DATA FORM

Chemical Name: Asbestos

Uses: Insulation

Solid X **Liquid** _____ **Gas** _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

The State and EPA are notified when asbestos materials are removed.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material inlcude: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

NESHAPS Asbestos Quarterly Report to DOE.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (sq/ft)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Asbestos	1979	13,368						100*		
	1980	11,778						100		
	1981	24,987						100		
	1982	5,275						100		
	1983	27,020						100		
	1984	82,569						100		
	1985	28,820						100		

*Y-12 Burial Grounds

CHEMICAL RELEASE DATA FORM

Chemical Name: Benzene

Uses: Laboratory Use

Solid _____ Liquid X Gas _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material inlcude: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years)..

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Benzene	1979	10		15					85*	
	1980	0								
	1981	2		15					85*	
	1982	0								
	1983	0								
	1984	0								
	1985	0								

*Commerical Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 35A - Active constituent: potassium pyrophosphate

Uses: Corrosion inhibitor in cooling water.

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet Federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs) .

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid * Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 35A	79	3,025			100					
	80	1,100			100					
	81	440			100					
	82	1,100			100					
	83	1,320			100					
	84	1,380			100					
	85	1,155			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 45 - Solution of chromic acid, sodium dichromate, zinc oxide, and water.

Uses: Corrosion inhibitor in cooling water.

Solid _____ **Liquid** ____X **Gas** _____

Listed as Toxic: **Yes** __X__ **No** _____

Status of Environmental Compliance (Past and Present):

Chromium discharges are monitored at NPDES points around the plant. All noncompliances have been reported to the state as per the Clean Water Act.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

There have been no known environmental impacts due to these noncompliances.

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 45	82	1,251				100*				
	83	3,694				100*				
	84	4,713				100*				
	85	4,174				100*				

* The blowdown containing chromates is treated in an Anco unit which converts it from the hexavalent state to the trivalent state. This is then discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 419 - Active constituents: hexaethylidene phosphate and acylate polymer

Uses: Deposit control in cooling water

Solid _____ **Liquid** ___x__ **Gas** _____

Listed as Toxic: **Yes** _____ **No** _x__

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 419	79	495			100					
	80	110			100					
	81	495			100					
	82	220			100					
	83	55			100					
	84	220			100					
	85	0								

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 562 - Active constituent: tolyltriazole

Uses: Corrosion inhibitor in cooling water

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 562	79	6,985			100					
	80	1,430			100					
	81	660			100					
	82	3,465			100					
	83	4,235			100					
	84	3,905			100					
	85	5,060			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 1100 - Major constituent: anionic polymer

Uses: Water clarifier

Solid _x_ **Liquid** _____ **Gas** _____

Listed as Toxic: **Yes** _____ **No** _X_

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 1100	79	24,300			100					
	80	32,350			100					
	81	16,500			100					
	82	28,250			100					
	83	37,200			100					
	84	33,650			100					
	85	23,050			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 1190 - Major constituent: cationic polyamine

Uses: Coagulant in treating cooling water

Solid _____ **Liquid** ___X_ **Gas** _____

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs) .

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 1190	82	5,366			100					
	83	11,416			100					
	84	14,989			100					
	85	6,623			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 2020 - Major constituent: polypropyl acrylate

Uses: Scale inhibitor

Solid _____ Liquid __X__ Gas _____

Listed as Toxic: Yes _____ No __X__

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 2020	85	275			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Betz 2060 - major constituent: orthophosphate, polypotassium phosphate

Uses: Corrosion inhibitor in cooling water

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid* Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Betz 2060	85	275			100					

* This chemical decomposes chemically as it is utilized as a corrosion inhibitor. Trace quantities may remain in the piping system or be exhausted as cooling tower drift; however, most of the liquid ultimately is discharged through the K-901-A Holding Pond NPDES location.

CHEMICAL RELEASE DATA FORM

Chemical Name: Carbon Tetrachloride

Uses: Laboratory uses

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** __X__ **No** _____

Status of Environmental Compliance (Past and Present):

Halomethanes were added to the NPDES permits in 1984. There have been no noncompliances to this permit.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite* Burial	Offsite Burial	Other	Unknown
Carbon Tetrachloride	79	1		50			50			
	80	4		50			50			
	81	12		50			50			
	82	6		50			50			
	83	0								
	84	0								
	85	3		50			50			

* For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorine, Liquid

Uses: Waste water treatment, bacteria control, and disinfecting

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

There have been several noncompliances of NPDES permit since 1976. These noncompliances were reported to the state as per the Clean Water Act.

Known or Suspected Public Health Impacts:

No environmental impact was observed due to these noncompliances.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lbs)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chlorine, Liquid	1982	122,000			100					
	1983	220,000			100					
	1984	210,000			100					
	1985	144,000			100					

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorine Trifluoride

Uses: Cell treatment in gaseous diffusion process.

Solid _____ **Liquid** _____ **Gas** X

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs) .

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chlorine Trifluoride	79	13,050								*
	80	12,600								
	81	10,650								
	82	8,400								
	83	7,950								
	84	5,700								
	85	4,650								

* Percent distribution unknown. Most of the by-products associated with chemicals are stored onsite as a sludge.

CHEMICAL RELEASE DATA FORM

Chemical Name: Chlorofluorohydro Carbon

Uses: Refrigerant

Solid _____ **Liquid** _____ **Gas** __X__

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chlorofluoro-hydro-carbon	1979	7,230		15		85*				
	1980	7,230		15		85				
	1981	8,130		15		85				
	1982	8,460		15		85				
	1983	3,520		15		85				
	1984	7,560		15		85				
	1985	7,920		15		85				

*TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: Chloroform

Uses: Laboratory uses

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

Halomethanes were added to the NPDES permits in 1984. There have been no noncompliances to this permit.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chloroform	1979	26		50	50					
	1980	47		50	50					
	1981	34		50	50					
	1982	32		50	50					
	1983	7		50	50					
	1984	3		50	50					
	1985	21		50	50					

CHEMICAL RELEASE DATA FORM

Chemical Name: Chromic Acid

Uses: Glassware Cleaner

Solid _____ **Liquid** __x__ **Gas** _____

Listed as Toxic: **Yes** _x_ **No** _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained for 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Chromic Acid	1979	155			50*				50**	
	1980	174			50*				50**	
	1981	141			50*				50**	
	1982	98			50*				50**	
	1983	132			50*				50**	
	1984	124			50*				50**	
	1985	146			50*				50**	

*Neutralized by Chemical Operations
**Commerical Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Dichlorotetrafluoroethane (Freon 114)

Uses: Refrigerant

Solid _____ **Liquid** __x__ **Gas** _____

Listed as Toxic: **Yes** _____ **No** __X__

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Internal Correspondence, January 8, 1981, "Program to Reduce the Amount of Plant Coolant Discharges."

Receiving Reports for ORGDP Shipping and Receiving Department.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Dichlorotetrafluoroethane (Freon R-114)										
	1973	597,000		100						
	1974	300,000		100						
	1975	277,000		100						
	1976	462,000		100						
	1977	668,000		100						
	1978	414,000		100						
	1979	592,000		100						
	1980	-*		-						
	1981	623,160		100						
	1982	539,600		100						
	1983	514,980		100						
	1984	360,900		100						
	1985	261,290		100						

*No Records Found

CHEMICAL RELEASE DATA FORM

Chemical Name: Fluorine

Uses: Laboratory and Development

Solid _____ **Liquid** _____ **Gas** _X_

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

ORGDP is in compliance with the Tennessee Ambient Air Quality Standard for gaseous fluorides expressed as HF.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safet glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Fluroine	1979	83	50*	50*						
	1980	34.3	50	50						
	1981	39.2	50	50						
	1982	34.3	50	50						
	1983	73.5	50	50						
	1984	83.3	50	50						
	1985	921.2	50	50						

*Exact Distribution Unknown

CHEMICAL RELEASE DATA FORM

Chemical Name: Hexane

Uses: Laboratory

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hexane	1979	24				50*			50**	
	1980	42				50			50	
	1981	28				50			50	
	1982	81				50			50	
	1983	92				50			50	
	1984	79				50			50	
	1985	2				50			50	

*For TSCA Incinerator
**Commercial Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrochloric Acid

Uses: Degreaser, surface preparation for plating; laboratory uses

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for pH of 6.0 to 9.0. There have been no noncompliances due to HCl releases.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues (records retained for 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrochloric Acid	1979	497,558			100*					
	1980	280,993			100					
	1981	265,511			100					
	1982	33,195			100					
	1983	32,627			100					
	1984	38,164			100					
	1985	58,994			100					

*Neutralized by Chemical Operations

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrofluoric Acid

Uses: Laboratory Uses

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** __X__ **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for pH of 6.0 to 9.0. There have been no pH noncompliances due to HF releases.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained for 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrofluoric Acid	1979	385			100*					
	1980	59			100					
	1981	28			100					
	1982	20			100					
	1983	138			100					
	1984	73			100					
	1985	75			100					

*Neutralized by Chemical Operations

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrogen

Uses: Buffer electrical equipment in switchyear, laboratory analysis

Solid _____ **Liquid** _____ **Gas** X

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (cu/ft)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrogen	1979	677,920		100						
	1980	595,650		100						
	1981	489,440		100						
	1982	52,820		100						
	1983	26,030		100						
	1984	38,950		100						
	1985	40,090		100						

CHEMICAL RELEASE DATA FORM

Chemical Name: Hydrogen Fluoride

Uses: Utilized for auxiliary operations in the gaseous diffusion process.

Solid _____ **Liquid** _____ **Gas** X

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

ORGDP is in compliance with the Tennessee Ambient Air Quality Standards for gaseous HF.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Receiving reports from Shipping and Receiving Department.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Hydrogen Fluoride	1979	157,360		Trace					99.99	
	1980	231,320		Trace					99.99	
	1981	71,900		Trace					99.99	
	1982	44,000		Trace					99.99	

CHEMICAL RELEASE DATA FORM

Chemical Name: Lead, Radiogenic

Uses: Stored at ORGDP for Y-12 awaiting disposal

Solid X **Liquid** _____ **Gas** _____

Listed as Toxic: Yes X No _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Memorandum of Meeting, "Disposal of Y-12 Radiogenic Lead Stored at K-25," by W. E. Ramsey.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Lead, Radiogenic	Since Early 1960s	102,672				100*				

*Radiogenic lead has been stored at K-25 for Y-12 since the early 1960s. The material is awaiting disposal.

CHEMICAL RELEASE DATA FORM

Chemical Name: Lithium Hydroxide

Uses: Stored at ORGDP for Y-12

Solid __X__ **Liquid** _____ **Gas** _____

Listed as Toxic: Yes _____ No __X__

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Report of Excess Personal Property OR75-2, C. M. Durham, September 1974.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Lithium Hydroxide	Since Early 1960s	~ 23,000,000				100*				

*The lithium hydroxide has been stored at K-25 for Y-12 since the early 1960s.

CHEMICAL RELEASE DATA FORM

Chemical Name: Mercury

Uses:

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for mercury. There have been no noncompliances due to mercury releases.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Mercury	1979	968								
	1980	1,440								
	1981	300								
	1982	144								
	1983	168							100*	
	1984	128							100*	
	1985	64							100*	

*Mercury Reclamation

NOTE: Information transmitted from M. E. Mitchell to Tom Scott, DOE, 6-10-83 states - Hg discharged from all effluents from 1948 to 1982 was approximately 1,465 lbs.

CHEMICAL RELEASE DATA FORM

Chemical Name: Methylene Chloride

Uses: Degreaser, Cleaner

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):
Methylene chloride was added to the NPDES permits in 1984. There has been one noncompliance (August 1984) to this permit.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

There was no observed environmental impact observed due to this noncompliance.

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Methylene Chloride	1979	858		10		50*			40**	
	1980	4,724		10		50			40	
	1981	7,057		10		50			40	
	1982	8,467		10		50			40	
	1983	11,596		10		50			40	
	1984	3,000		10		50			40	
	1985	6,664		10		50			40	

*TSCA
**Commercial Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Methyl Ethyl Ketone

Uses: Solvent, Cleaner

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: Yes __X__ No _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Chemical Toxic Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Methyl Ethyl Ketone	1979	16				50*			50**	
	1980	8				50			50	
	1981	12				50			50	
	1982	7				50			50	
	1983	11				50			50	
	1984	6				50			50	
	1985	9				50			50	

*For TSCA Incinerator
**Commercial Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitric Acid

Uses: Sample preparation in Laboratory

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for pH of 6.0 to 9.0. There have been no releases of nitric acid which resulted in noncompliances to these permits.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against the material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (record retained for 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Nitric Acid	1979	212,660		15*	85**					
	1980	195,589		15	85					
	1981	174,722		15	85					
	1982	131,374		15	85					
	1983	25,236		15	85					
	1984	10,076		15	85					
	1985	38,591		15	85					

*As Nitrogen Oxides
**Neutralized by Chemical Operations

CHEMICAL RELEASE DATA FORM

Chemical Name: Nitrogen

Uses: Buffer electrical equipment in switchyear, laboratory analysis

Solid _____ **Liquid** _____ **Gas** X

Listed as Toxic: Yes _____ No X

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (Records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (cu/ft)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Nitrogen	1979	52,160		100						
	1980	404,800		100						
	1981	410,740		100						
	1982	430,540		100						
	1983	390,060		100						
	1984	500,620		100						
	1985	385,220		100						

CHEMICAL RELEASE DATA FORM

Chemical Name: Phosphoric Acid

Uses:

Solid _____ **Liquid** __x__ **Gas** _____

Listed as Toxic: **Yes** __xx__ **No** _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Phosphoric Acid	1979	1,416			75*				25**	
	1980	1,192			75				25	
	1981	792			75				25	
	1982	784			75				25	
	1983	608			75				25	
	1984	390			75				25	
	1985	720			75				25	

*Neutralized by Chemidal Operations
**Commercial Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Polychlorinated Biphenyls (PCB)

Uses: Dielectric oil in capacitors and transformers.

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

The ORGDP is in complete compliance with TSCA regulations which regulates the use, storage, and disposal of these substances.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

K/HS-73, "PCB Inventory 1978-1984," J. E. Stone.

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity † Used (kg)	Product	Airborne Release	Liquid Effluent	Onsite * Storage	Onsite Burial	Offsite Burial	Other**	Unknown
Polychlorinated Biphenyls	78	937,004				3.8			0	
	79	969,980				7.8			6.9	
	80	1,005,645				10.0			0	
	81	1,019,216				10.2			1.1	
	82	1,043,989				11.9			0	
	83	1,040,639				11.7			1.6	
	84	1,065,237				13.8			2.6	
	85	840,755				16.7			3.5	

* Material awaiting disposal

** Offsite incineration

† ~85 percent of material remains in use

CHEMICAL RELEASE DATA FORM

Chemical Name: Potassium Hydroxide

Uses: Flourine scrubber on cascade vent, etchant in plating lab

Solid x **Liquid** _____ **Gas** _____

Listed as Toxic: **Yes** x **No** _____

Status of Environmental Compliance (Past and Present):

4/11/80 - pH noncompliance of NPDES limits due to KOH release.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

No biological incidence resulted due to the release.

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Potassium Hydroxide										
	1979	187,200			5*	90Δ			5**	
	1980	146,400								
	1981	161,400								
	1982	61,800								
	1983	90,600								
	1984	142,800								
	1985	201,600								

*Neutralization
**Commerical Disposal
ΔK-1407-C Pond for Concrete Fixation

CHEMICAL RELEASE DATA FORM

Chemical Name: Propanol

Uses: Cleaner, etcher

Solid _____ Liquid __x__ Gas _____

Listed as Toxic: Yes _____ No __xx__

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
propanol	1979	4,487				90 Δ			10*	
	1980	3,559								
	1981	2,402								
	1982	2,025								
	1983	2,052								
	1984	1,661								
	1985	787								

*Commerical Disposal
Δ For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: Sodium Hydroxide

Uses: Printed circuit board manufacturing process and lab.

Solid __X__ **Liquid** _____ **Gas** _____

Listed as Toxic: **Yes** __X__ **No** _____

Status of Environmental Compliance (Past and Present):

The NPDES permits have limits for pH of 6.0 to 9.0. There have been no releases of NaOH, that resulted in noncompliances with these permits.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 yrs)

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (lb)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sodium Hydroxide										
	1979	2,905			85Δ				15*	
	1980	866			85				15	
	1981	595			85				15	
	1982	659			85				15	
	1983	335			85				15	
	1984	395			85				15	
	1985	330			85				15	

ΔNeutralized by Chemical Operations
*Commerical Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Sulfuric Acid

Uses: Water treatment and pH control, lab

Solid _____ **Liquid** __X__ **Gas** _____

Listed as Toxic: **Yes** _X_ **No** _____

Status of Environmental Compliance (Past and Present):

January 1979, pH noncompliance of NPDES limits due to sulfuric acid release.

Known or Suspected Public Health Impacts:

There was no observed impact due to this release.

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities, and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
Sulfuric Acid	1979	1,577			98*				2**	
	1980	1,494			98				2	
	1981	1,245			98				2	
	1982	1,023			98				2	
	1983	73,975			98				2	
	1984	75,722			98				2	
	1985	47,432			98				2	

*Neutralized by Chemical Operations
**Commercial Disposal

CHEMICAL RELEASE DATA FORM

Chemical Name: Tetrachloroethylene (Perchloroethylene)

Uses: Degreaser

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

Tetrachlorethylene was added to the NPDES permit in 1984. There have been no noncompliance with this permit.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly toxic chemical issue report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage*	Onsite Burial	Offsite Burial	Other	Unknown
Tetrachloroethylene (Perc)	1979	5,500				100				
	1980	9,625				100				
	1981	2,420				100				
	1982	1,980				100				
	1983	1,760				100				
	1984	1,430				100				
	1985	935				100				

*For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,1,1-trichloroethane

Uses: Degreaser

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** X **No** _____

Status of Environmental Compliance (Past and Present):

Tetrachlorethylene was added to the NPDES permit in 1984. There have been no noncompliances with this permit.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Specific use, conditions, quantities and other factors determine the level and type of worker protection. Standard measures for protection against this material include: 1) adequate ventilation, 2) rubber gloves, 3) safety glasses, 4) proper respiratory protection.

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
1,1,1-trichloroethane										
	1979	64,392				100*				
	1980	52,002				100				
	1981	3,510				100				
	1982	2,322				100				
	1983	972				100				
	1984	864				100				
	1985	594				100				

*For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,1,2-Trichloro-1,2,2-trifluoroethane (89%) and acetone (11%)

Uses: Degreaser & Solvent (Freon TA)

Solid _____ **Liquid** _X_ **Gas** _____

Listed as Toxic: **Yes** _____ **No** _X_

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Chemical Toxic Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
1,1,2-trichloro-1,2,2-trifluoroethane (89%) and acetone (11%) Freon TA)	1979	1,760		15		85*				
	1980	2,475		15		85				
	1981	2,915		15		85				
	1982	2,530		15		85				
	1983	1,870		15		85				
	1984	2,970		15		85				
	1985	1,705		15		85				

*For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,1,2-trichloro-1,2,2-trifluoroethane (96.3%) & ethanol/methanol (3

Uses: Solvent, degreaser

Solid _____ **Liquid** X **Gas** _____

Listed as Toxic: **Yes** _____ **No** X

Status of Environmental Compliance (Past and Present):

There are no specific limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used (gal)	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
1,1,2-trichloro-1, 2,2-trifluoroethane & ethanol/methanol (Freon TE)	1979	200		15		85*				
	1980	300		15		85				
	1981	170		15		85				
	1982	125		15		85				
	1983	130		15		85				
	1984	60		15		85				
	1985	25		15		85				

*For TSCA Incinerator

CHEMICAL RELEASE DATA FORM

Chemical Name: 1,1,2-trichloro-1,2,2-trifluoroethane (64.7%) & isopropanol (35%) & nitromethane (0.3%) (Freon TP-35)

Uses: Solvent, degreaser

Solid _____ **Liquid** ___x___ **Gas** _____

Listed as Toxic: **Yes** _____ **No** _____

Status of Environmental Compliance (Past and Present):

There are no specified limits for this chemical in order to meet federal and state regulations.

Known or Suspected Public Health Impacts:

Known or Suspected Environmental Impacts:

Level and Type of Worker Protection:

Source of Chemical Usage Information:

Yearly Toxic Chemical Issues Report (records retained 6 years).

Source of Chemical Distribution Information/Accuracy:

ESTIMATED CHEMICAL USAGE
Estimated Distribution in Percent

Chemical Name	Year	Quantity Used	Product	Airborne Release	Liquid Effluent	Onsite Storage	Onsite Burial	Offsite Burial	Other	Unknown
1,1,2-trichloro-1,2,2-trifluoroethane & isopropanol & nitromethane (Freon TP-35)	1979	315		15		85*				
	1980	1,530		15		85				
	1981	630		15		85				
	1982	900		15		85				
	1983	1,170		15		85				
	1984	2,475		15		85				
	1985	3,510		15		85				

*For TSCA Incinerator

MARTIN MARIETTA

Internal Correspondence

W.R. GOLLIHER

APR 29 3 09 PM '86 MARTIN MARIETTA ENERGY SYSTEMS, INC.

April 29, 1986

H13-6.1
86:00058

W. F. Furth

Historical Chemical Release Report - K/HS-106

Enclosed is the "Historical Chemical Release Report" for the Oak Ridge Gaseous Diffusion Plant (ORGDP). The list contains those chemicals having the greatest potential for impact on public health and/or the environment over the past several years. This report does not include uranium or other radionuclides since these elements have already been reported in Document No. K/HS-95 entitled "The Oak Ridge Gaseous Diffusion Plant's Historical Uranium and Radionuclide Release Report," February 28, 1986.

It is felt that the enclosed list represents a reasonable selection of chemicals used in sufficient quantities to deem reportable. Numerous chemicals have been utilized throughout the plant in small quantities for various projects and research activities. Due to minute quantities and the controlled conditions under which they were used, these chemicals have not been included in this report. Also, chemicals readily familiar to the general public have been omitted. These include varsol, gasoline, insecticides, herbicides, and general cleaning materials.

A retention period of six years exists for procurement records as designated by DOE Chapter Manual 1324.2, Attachment IV-I, and repeated in Martin Marietta Energy Systems' Accounting Manual, Procedure No. 18.11, Listing 4.1. Records prior to this period have been destroyed as required by procedures; therefore, extensive records of chemical purchases and usage are virtually nonexistent before 1978. This limits readily available records denoting quantities and disposition of these chemicals.

Without records, one cannot accurately predict chemical usage during the earlier years of plant operation. Obviously, large quantities of some chemicals have been used at ORGDP since 1945. Chemicals such as fluorine, chlorine trifluoride, freon, hydrogen fluoride, plating solutions, water treatment chemicals, acids, and caustics have been associated with the gaseous diffusion process and its auxiliary facilities since the plant began operation. This report summarizes existing procurement records and files.

Surplus scrap and equipment sales from ORGDP are not included in the report because there have been no sales of radioactively contaminated material since the early 1970s. Property Sales is required to keep records for only three years, thus no record of these radioactively contaminated sales exist. Present scrap and equipment sold to the public is cleared by health physics according to established procedures. To make the public aware of possible hazards, some articles contain a label stating possible contamination by asbestos or that electrical equipment may contain polychlorinated biphenyls (PCBs). These are precautionary measures to warn of potential hazards.

If there are questions regarding the report, please contact S. T. Goodpasture at extension 6-0421.

J. E. Shoemaker, K-1020, MS 402, ORGDP (4-9200)

JES:STGoodpasture:rcd

Enclosure

cc: File - JES

cc/enc: W. R. Golliher
S. T. Goodpasture
J. G. Rogers - NoRC

MARTIN MARIETTA

Internal Correspondence

W. F. THOMAS

JAN 27 8 13 AM '86

MARTIN MARIETTA ENERGY SYSTEMS, INC.

January 23, 1986

cc: Rogers

Please handle. Jim, you are the designated representative.

WRG 1/31/

R. G. Donnelly
G. G. Fee
H. Postma/R. S. Wiltshire
W. F. Thomas/W. R. Golliher

Historic Chemical Release Report

Enclosed is a copy of DOE-ORO's request for Energy Systems to prepare a Historic Chemical Release Report on each of its facilities. The concept of preparing this report is not new, and some work has already been initiated. In October 1985, we were asked to assist in developing a format and scope for this report. Each of the Energy Systems environmental staffs provided input to my office, and this information was subsequently forwarded to DOE-ORO. The enclosed format was developed by DOE-ORO after a review of our information.

4-25-86

The subject documents are to be provided to DOE-ORO by April 25, 1986. Please have your designated representative contact my office.

W. F. Furth, 1000, MS 214A, ORNL (6-8006) - NoRC

WFF:LWL:lhs

Enclosure

cc: C. C. Hopkins
K. Jarmolow
M. L. Jones
L. W. Long - RC
F. R. Mynatt
T. H. Row
J. E. Shoemaker
K. W. Sommerfeld
W. E. Thompson
File - WFF

MARTIN MARIETTA ENERGY SYSTEMS, INC.

POST OFFICE BOX X
OAK RIDGE, TENNESSEE 37831

April 25, 1986

1986 APR 30 AM 9:41

Mr. R. L. Egli, Assistant Manager
for Safety and Environment
Department of Energy, Oak Ridge Operations
Post Office Box E
Oak Ridge, Tennessee 37831

Dear Mr. Egli:

Historical Chemical Release Reports

In response to your request of January 6, 1986, reports are being prepared on Historical Chemical Releases from each of the installations operated for for the Department of Energy by Martin Marietta Energy Systems.

As discussed with you by telephone this date and with your concurrence for this commitment, we are forwarding draft copies of the reports for the Y-12 Plant and the Paducah Gaseous Diffusion Plant for your preliminary review. The draft copy of the report for the Oak Ridge Gaseous Diffusion Plant is in typing and classification review and will be forwarded to you on April 30. ORNL has provided the attached listing of chemicals, usage quantities, and surplus chemical sales information. Because of the varied research activities historically conducted at ORNL, the compilation of chemical usage data has been very time consuming. The chemical release and usage forms are now in the process of being completed, with input from several disciplines. This report is to be completed on May 9, 1986, and will be immediately forwarded to you for review.

As per agreement with Wayne Hibbitts of your staff, we are not forwarding any classified reports. We will review these with Wayne Hibbitts in the near future.

All of us have realized that these reports are difficult to generate and may be the start of a larger process. You have provided guidance for these reports, which our installations are striving to meet. Nevertheless, as we review these reports, and the information in them, it is obvious that there are significant differences in the quantity and quality. There are significant areas where information is not provided because records are not available. In the case of ORNL, there seems to be no information (records not available) prior to 1980. Significant expenditure of resources have occurred in the assimilation of this material, even in its present form. We would like to discuss this information with you.

These are draft documents and have not been reviewed for public release.

Please contact Gordon Jones of my staff, or me, with questions or comments.

Sincerely,

Werner F. Furth, Director
Environment, Safety, and Health

WFF:CGJ:lhs

Attachments

cc: R. G. Donnelly
G. G. Fee
W. R. Golliher
J. C. Harper
C. G. Jones-RC
H. Postma
K. W. Sommerfeld
File-WFF

bc: R. C. Baker
T. R. Butz
M. L. Jones
D. C. Parzyck
[redacted]
P. S. Rohwer
S. L. Shell
J. E. Shoemaker