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**OAK RIDGE
Y-12
PLANT**

MARTIN MARIETTA

**SPILL PREVENTION, CONTROL, AND
COUNTERMEASURES (SPCC) PLAN
FOR THE Y-12 PLANT**

VOLUME I

August 1992

prepared for the

Health, Safety, Environment, and
Accountability Division
Oak Ridge Y-12 Plant

managed by

MARTIN MARIETTA ENERGY SYSTEMS, INC.

for the

U.S. DEPARTMENT OF ENERGY
under Contract No. DE-AC05-84OR21400

MANAGED BY
MARTIN MARIETTA ENERGY SYSTEMS, INC.
FOR THE UNITED STATES
DEPARTMENT OF ENERGY

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August 1992
Y/SUB/92-21704/1

**THE SPILL PREVENTION, CONTROL, AND
COUNTERMEASURES PLAN
FOR THE OAK RIDGE Y-12 PLANT**

ASSIGNED TO: A. K. Lee/DOE-OSTI (3)

COPY NUMBER: 38 - 2

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Flow Chart of Y-12 Emergency Spill Response Procedures

**FIRST LINE EMPLOYEE RESPONSE TO Y-12 HAZARDOUS SUBSTANCE
EMERGENCY SPILLS**

The person discovering a spill should take the following action:

1. Call the Plant Shift Superintendent's office at:

4-7172 or 911
2. Stay on the phone and give the following information to the Plant Shift Superintendent:
 - o Observer's location and telephone number
 - o Any injuries
 - o Exact location of the spill
 - o Type of spill, if known (chemical, radiological)
 - o Estimated volume of the spilled material
 - o Extent of the spill
 - o Whether or not material has entered a storm sewer system
3. Notify local supervisor in spill area or one's immediate supervisor.
4. Take the following actions As Appropriate:
 - o Pull the nearest fire alarm box
 - o Call the local emergency supervisor or warden
 - o Call a local emergency squad member or anyone near
 - o Sound the building evacuation alarm if necessary
5. If you can do safely:
 - o Shutdown equipment
 - o Isolate a leak in a line with valves
 - o Upright a leaking drum or container
 - o Apply absorbent material
 - o Plug a leak with a peg, duct tape, etc.
 - o Block floor drains, storm drains, or ditches
 - o Build a dike to prevent spread of material using:
 - Soil, sand
 - Clay absorbent
 - Spill control booms
6. Direct personnel away from the spill area.
7. At a safe distance, meet and orient the emergency service units (Fire Department, Safety Patrol, Ambulance, Environmental Management, etc.)

SPILL PREVENTION, CONTROL, AND
COUNTERMEASURES (SPCC) PLAN
FOR THE Y-12 PLANT

VOLUME I

August 1992

prepared by

Science & Technology, Inc.
700 South Illinois Avenue, Suite A-202
Oak Ridge, Tennessee 37830

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Health, Safety, Environment, and
Accountability Division
Oak Ridge Y-12 Plant
Oak Ridge, Tennessee

managed by

MARTIN MARIETTA ENERGY SYSTEMS, INC.
for the
U.S. DEPARTMENT OF ENERGY
under Contract No. DE-AC05-84OR21400

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**ENGINEERING CERTIFICATION
FOR
Spill Prevention, Control,
and Countermeasures (SPCC)
Plan for the Y-12 Plant
(1992 Revision)**

I hereby certify that I have reviewed this document of the Spill Prevention, Control, and Countermeasures (SPCC) Plan for the Y-12 Plant, as revised in August 1992; that I am familiar with the regulations governing the preparation of SPCC Plans; that I am familiar with the Y-12 Plant facility; and that, to the best of my knowledge, the plan has been prepared in accordance with good engineering practices.

Melton D. Cauthen 8/17/92

Melton D. Cauthen, P. E.

**SPILL PREVENTION, CONTROL, AND COUNTERMEASURES (SPCC)
PLAN FOR THE Y-12 PLANT (1992 REVISION)**

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Acronyms

ANSI	American National Standards Institute
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
BMAP	Biological Monitoring and Abatement Program
BMP	Best Management Practice
CHEMTREC	Chemical Manufactures Association, Chemical Transportation Emergency Center
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CHRIS	Chemical Response Information Center
COTR	Contracting Officer's Technical Representative
CWA	Clean Water Act
DARA	Disposal Area Remediation Actions
DOE	Department of Energy
DOT	Department of Transportation
EFPC	East Fork Poplar Creek
Energy Systems	Martin Marietta Energy Systems, Inc.
EPA	Environmental Protection Agency
ET&I	Equipment, Testing, and Inspection
GPP	General Plant Project
HSEA	Health, Safety, Education, and Accountability
ICC	Incident Command Center
LANL	Los Alamos National Laboratory
LGE	Lockwood Greene Engineering
LLNL	Lawrence Livermore National Laboratory
MSDS	Material Safety Data Sheet
MUD	Maintenance and Utilities Division
NASA	National Aeronautics and Space Administration
NEZ	NPDES Equals Zero
NFPA	National Fire Protection Association
NLM	National Library of Medicine
NPDES	National Pollutant Discharge Elimination System
NTS	Nevada Test Site

Acronyms (continued)

ORNL	Oak Ridge National Laboratory
ORS	Occurrence Reporting System
OSHA	Occupational Safety and Health Administration
PCB	Polychlorinated Biphenyls
PPAP	Pollution Prevention Awareness Program
PSS	Plant Shift Superintendent
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SMAP	Stream Management Analysis Program
SNL	Sandia National Laboratory
SPCC	Spill Prevention, Control, and Countermeasures
SRC	Spill Response Coordinator
TDEC	Tennessee Department of Environment and Conservation
TEMA	Tennessee Emergency Management Agency
TSCA	Toxic Substances Control Act
TSO	Time Sharing Operations
UST	Underground Storage Tank
WETF	West End Treatment Facility
WTSD	Waste Transportation, Storage, and Disposal

SPILL PREVENTION, CONTROL, AND COUNTERMEASURES (SPCC) PLAN FOR THE Y-12 PLANT (1992 REVISION)

1.0 INTRODUCTION

A Spill Prevention, Control, and Countermeasures (SPCC) Plan is a carefully thought-out, written, facility-specific plan for preventing and responding effectively to spills of oils or hazardous substances. This plan has been prepared in accordance with good engineering practices and has the full approval of facility management at a level with authority to commit the resources necessary to support it. All SPCC Plans must be reviewed and certified by a Registered Professional Engineer. This SPCC Plan satisfies that requirement.

40 CFR 112.5 requires that SPCC Plans be reviewed, evaluated, and amended at least once every three years, or earlier if significant changes occur. The initial SPCC Plan for the Oak Ridge Y-12 Plant was completed in 1985 with a major revisions published in 1988 and 1990. Since that time, changes pertinent to the content and context of the plan have occurred. These changes involve completion of new facilities, procedural revisions, organizational changes, and availability of additional information for the plan. The past year has also provided an opportunity for the applicable internal organizations to review the 1990 revision and generate comments for incorporation into this document, the 1992 revision of the SPCC Plan. Regulations under the Federal Water Pollution Control Act [Clean Water Act (CWA)] require such changes to be reflected in a revision of the SPCC Plan. The 1992 revision fulfills the requirement (40 CFR 112.5) for reviewing, evaluating, and amending SPCC Plans.

In the Code of Federal Regulations (CFR), the requirements for SPCC Plans focus on oil and hazardous substances, including polychlorinated biphenyls (PCB). 40 CFR 112 and 40 CFR 761 specifically mandate SPCC Plans.

Owners or operators of on-shore facilities that have discharged oil or have the potential to discharge oil in harmful quantities are covered by 40 CFR 112. 40 CFR 110.3 defines harmful quantities as: (a) quantities that violate applicable water quality standards or (b) quantities that cause a film, sheen, discoloration, sludge, or emulsion to be on the surface of the water or the adjoining shorelines.

Facilities producing, storing, processing, refining, handling, transferring, distributing, or consuming hazardous substances that are subject to National Pollutant Discharge Elimination System (NPDES) permitting requirements are defined in 40 CFR 122. Hazardous substances are defined in 40 CFR 116, and the reportable quantities of these substances are specified in 40 CFR 117.

40 CFR 125 requires that facilities subject to NPDES permitting incorporate best management practice(s) (BMPs) into their operations. The BMPs are used to minimize the likelihood of oil and hazardous substance discharges. Spill control is considered to be a BMP. The Y-12 Plant has developed standards and procedures that strengthen its SPCC Plan and ensure that all aspects of the SPCC Plan, as well as other environmental concerns associated with the operation of the Y-12 Plant, are addressed. Martin Marietta Energy Systems, Inc. (Energy Systems) employs Procedure ESS-EP-126 (dated February 29, 1992, and approved by the Vice President

of Compliance, Evaluations, and Policy). The policy specifically requires that all applicable federal and state laws and regulations be met and that best engineering practices be implemented to ensure compliance with SPCC Plan requirements.

40 CFR 761 requires preparation of a SPCC Plan if containers of liquid PCB at concentrations between 50 and 500 ppm are to be stored temporarily. In this case, the plan covers temporary storage areas. Also, SPCC Plans must cover PCB storage containers larger than those falling under Department of Transportation (DOT) specifications for shipping containers [40 CFR 178.82-178.35(a) and 40 CFR 761.65(c)(6)].

The Oil Pollution Act of 1990 has been reviewed as part of this update. This Act was a direct result of the Exxon Valdez oil spill. The Act does not impact the 1992 Revision to the Y-12 SPCC Plan.

The Resource Conservation and Recovery Act (RCRA) covers owners and operators of facilities that treat, store, or dispose of hazardous waste. 40 CFR 264 sets spill prevention and preparedness standards, including contingency planning, for hazardous waste facilities. 40 CFR 280 sets standards aimed at preventing leaks from underground storage tanks containing regulated substances. Although compliance with these regulations is thoroughly addressed in the Plant's RCRA documentation, this plan includes RCRA hazardous waste facilities.

This SPCC Plan is divided into two volumes. Volume I addresses Y-12's compliance with regulations pertinent to the content of SPCC Plans. Volume II is the *SPCC Hazardous Material Storage Data Base*, a detailed tabulation of facility-specific information and data on potential spill sources at the Y-12 Plant.

As prevailing regulations apply to the Y-12 Plant facilities, Volume I follows the basic format and subject sequence specified in 40 CFR 112.7. This sequence is prefaced by three additional chapters, including this introduction and brief discussions of the Y-12 Plant's background/environmental setting and potential spill source categories. Two additional chapters on containers and container storage areas and PCB and PCB storage for disposal facilities are inserted into the required sequence. The following required subjects are covered in this volume of the Y-12 SPCC Plan: spill history; site drainage; secondary containment/diversion structures and equipment; contingency plans; notification and spill response procedures; facility drainage; bulk storage tanks; facility transfer operations, pumping, and in-plant processes; transfer stations (facility tank cars/tank trucks); inspections and records; security; and personnel, training, and spill prevention procedures.

As previously noted, Volume II presents tabulated information and data on the Y-12 Plant facilities. These facilities include nonliquid material storage areas, bulk storage tanks, transfer stations, railroad tank cars, tank trucks, various containers (drums, overpacks, cans, cylinders, dumpsters, and boxes), and container storage/accumulation areas. The data base that makes up Volume II is now automated to allow for regular updating.

The Y-12 Plant Guidance for Spill Response and Reporting provides a ready reference for additional guidance regarding spill response and reporting and for procedures published by individual departments. The procedures discussed in this SPCC can be found in the guidance document above, located in Building 9116 with the Spill Response Coordinator (SRC).

2.0 Y-12 PLANT BACKGROUND AND SITE DESCRIPTION

2.1 History of the Y-12 Plant

The Oak Ridge Y-12 Plant was originally constructed for the U.S. Army Corps of Engineers in 1943 as a part of the highly classified Manhattan Project. The Plant was one of three constructed in the Oak Ridge area, the other two being the Oak Ridge National Laboratory (ORNL) and the K-25 Site (formerly the Oak Ridge Gaseous Diffusion Plant).

The original mission of the Y-12 Plant was to separate fissionable isotopes of uranium (U-235) by the electromagnetic process. It has progressed from this single mission to become a highly sophisticated weapons component manufacturing and development engineering organization. Since 1984, it has been managed by Energy Systems under contract with the U.S. Department of Energy (DOE).

Today, the plant site is an "industrial city" with a working population of about 7,000. There are approximately 233 principal buildings at the Y-12 Plant, excluding cooling towers, pump houses, and buildings under 1,000 square feet of floor area. It has its own utilities infrastructure, including a steam plant and electrical substations. These buildings and other structures are linked by an extensive street system. Y-12 employees and their activities are supported by a full-time fire department, 24-hour security department, mail delivery service, vehicle fleet, dispensary, and cafeteria.

2.2 Current Mission of the Y-12 Plant

The primary missions of the Oak Ridge Y-12 Plant are:

1. Producing and managing nuclear weapon components,
2. Providing manufacturing support to DOE's design laboratories,
3. Processing source and special nuclear materials,
4. Providing support to ORNL facilities and Energy Systems' General Staff located at the Y-12 Plant site, and
5. Supporting other government agencies.

It is Y-12's mission to serve as a manufacturing technology center for key processes such that capabilities are maintained for safe, secure, reliable, and survivable nuclear weapons systems and other applications of national importance. To accomplish this, Y-12 must operate in a safe, secure, and environmentally sound and cost-effective manner. As a part of this mission, the Y-12 Plant also provides manufacturing support for the DOE design laboratories at Los Alamos National Laboratory (LANL), Lawrence Livermore National Laboratory (LLNL), and Sandia National Laboratories (SNL). For these facilities, the Y-12 Plant produces components for design evaluation and most of the test devices that are used at the Nevada Test Site (NTS).

From time to time, others use the expertise and specialized capabilities of the Y-12 Plant. For example, Plant personnel designed and fabricated the geological sample boxes used by the National Aeronautics and Space Administration (NASA) in the Apollo moon landing missions. The Plant has also produced highly reflective, metal mirrors for applications ranging from fusion energy research to astronomy.

2.3 Physiographic Location and Natural Setting of the Y-12 Plant

The Y-12 Plant lies in the Valley and Ridge physiographic province of East Tennessee. This province is characterized by alternating northeast-southwest trending ridges and valleys formed by severely folded and faulted sedimentary and metamorphic rock. It is bounded by the Cumberland Plateau province (3,000+ feet above mean sea level) 10 miles to the northwest of the Y-12 Plant, and by the Blue Ridge province (6,000+ feet above mean sea level) 70 miles to the southeast of the Plant.

The Y-12 Plant, ORNL, and the K-25 Site are situated on portions of a 37,000-acre Federal reservation (Figure 2.1) in the Clinch River drainage basin. Located 3 miles from the population center of the city of Oak Ridge, the main Y-12 Plant site occupies an area of 811 acres in the eastern end of Bear Creek Valley and at the headwaters of the East Fork Poplar Creek (EFPC). About 600 of these acres are enclosed by perimeter security fencing. The main plant site is $\frac{2}{3}$ of a mile wide by 3.2 miles in length, at elevations of 920 to 1,000 feet above mean sea level. It is bounded on the south (grid south) by Chestnut Ridge and on the north (grid north) by Pine Ridge; its long axis is essentially parallel to these ridges, with elevations generally greater than 1,100 feet above mean sea level. Bear Creek Road, the principal access to the Plant site, runs NE-SW along its northern perimeter. Scarboro Road marks the Plant's eastern boundary.

The natural and man-made drainage patterns of the Y-12 Plant site have important implications for the effective prevention and management of hazardous material spills. EFPC drains east and then north through the city of Oak Ridge. The drainage characteristics of the Y-12 Plant site, their importance for spill prevention and management, and their relationship to the major dendritic system of the Valley and Ridge physiographic province are discussed in Chapter 5, "Site Drainage."

The Y-12 Plant site and its environs support a predominantly hardwood (oak-hickory) forest. This forest and numerous cleared areas provide protected homes for a wide variety of native plants and animals. Parts of the Federal reservation is managed as the Oak Ridge National Environmental Research Park.

3. OVERVIEW OF POTENTIAL SPILL SOURCES AT THE Y-12 PLANT

As used in this document, a potential spill source is any facility or device that could potentially discharge harmful quantities of oil or hazardous materials. Pursuant to the Clean Water Act, 40 CFR 110 specifies harmful quantities of oils. 40 CFR 116 and 40 CFR 117 designate hazardous substances and attendant reportable quantities of them, respectively.

Large industrial operations, like the Y-12 Plant, that carry on numerous complex processing and fabrication activities have a proportionately large number of potential spill sources. The many potential spill sources at the Y-12 Plant are classified under six basic categories: Bulk Storage Tanks; Facility Transfer Operations, Pumping, and In-Plant Processes; Transfer Stations (Facility Tank Trucks and Tank Cars); PCB Items and Storage for Disposal Facilities; Containers and Container Storage Areas; and Nonliquid Material Storage Areas. This chapter provides a brief overview of each potential spill source category at the Y-12 Plant as an anchor point for discussions in the succeeding five chapters. More detailed, plant-specific information on potential spill sources is available in Chapters 8 through 13. The discussion of nonliquid material storage areas is included in Section 8.4, "Facility Drainage." A detailed tabulation of information and data on potential spill sources is provided in Volume II. However, PCB electrical equipment and storage for disposal areas are not included in Volume II. These are discussed in Chapter 13.

3.1 Bulk Storage Tanks

A tank is a stationary device constructed primarily of non-earthen materials (i.e., steel, plastic, concrete) that provide structural support and hold hazardous or nonhazardous materials and waste. Tanks of this description are among the most numerous of the hazardous material containers on the Y-12 Plant site. The volumes of these tanks are highly variable.

There are two broad, location-based categories of bulk storage tanks at the Y-12 Plant. These are aboveground storage tanks and underground storage tanks. All tanks, including portable polyethylene tanks (normally classified as containers), are discussed in Chapter 9.

As Volume II indicates, the tanks at the Y-12 Plant contain a wide variety of regulated substances. Many tanks hold oils and hazardous substances that are used either in support of industrial processes or as raw materials in those processes. Other tanks are used to store hazardous waste.

In general, spills from bulk storage tanks can be caused by storage of incompatible materials, lack of structural integrity of the tanks, corrosion, defective internal heating coils, physical stress, and an absence of fail-safe engineering. Infrequent integrity testing and inspections would increase spill risk. Discharges to streams could occur as a result of improperly constructed secondary containment structures, an absence of secondary containment structures, or improper drainage of secondary containment areas.

3.2 Facility Transfer Operations, Pumping, and In-Plant Processes

Pumps, transfer pipeline systems, and in-plant industrial processing equipment are the key components of any large industrial operation. Any of these is a potential spill source.

At the Y-12 Plant, pumps and pipeline systems are used for several purposes. These include filling bulk storage tanks and containers with oils, hazardous substances, and hazardous waste; draining tanks and secondary containment structures; transferring oils and hazardous raw materials into and among in-plant processing facilities; and transferring oils, hazardous substances, and hazardous waste away from processing operations.

Pump, pipeline, and in-plant process spills can be caused by many different factors. Current federal regulations emphasize low integrity of structural materials, poorly sealed or weakened pipe joints, corroded surfaces, open or improperly functioning valves, improperly installed equipment, uncapped pipes, abrasion and physical impact, improperly designed pipe supports, and transfer of incompatible materials. Infrequent inspections and an absence of covers, guards, and other protective devices designed to prevent spraying, aerial dispersal, and releases from pressure relief vents may also contribute to a discharge incident.

3.3 Transfer Stations (Facility Tank Trucks and Tank Cars)

Facility tank car and tank truck loading/unloading racks at the Y-12 Plant are used for two primary purposes. Incoming oils and hazardous substances (raw materials) are transferred from railroad tank cars to in-plant storage vessels. Outgoing waste materials are generally transferred to tank trucks for shipment to off-site storage or disposal facilities. Some waste may be transferred to metal drums and stored temporarily on the Y-12 Plant site.

Although facility tank car and tank truck loading/unloading rack spills could occur from leaking transfer lines during the transfer process, current regulations are primarily concerned with preventing the departure of tank cars and tank trucks while transfer lines are connected, checking their drains and outlets prior to filling and departure, and ensuring proper secondary containment. The loading and unloading procedures used at such locations should comply with the minimum regulations and requirements of the U.S. DOT.

3.4 Containers and Container Storage Areas

Container storage areas at the Y-12 Plant are typically outdoor, aboveground spaces reserved for the storage of oils, hazardous substances, and hazardous waste in portable, material-compatible containers such as drums, boxes, overpacks, polytanks, cylinders, and dumpsters. Hazardous waste storage in containers such as drums is a temporary measure.

Spills from drums can occur as a result of corrosion, seam leaks, valve failures, and physical stress. Human error in handling could result in a spill, as could infrequent inspections. Insufficient secondary containment measures in drum storage areas may result in the drainage of hazardous materials to streams.

3.5 PCB Items and Storage for Disposal Facilities

"PCB item" is an umbrella term for any object that contains or has as a part of it any PCB. PCB items on the Y-12 Plant site include PCB containers, PCB transformers, capacitors, heat transfer system components, and hydraulic system components.

The same spill potential associated with drums, tanks, and transfer pipelines; pumps; and in-plant process equipment applies to PCB items. The greatest impact of spills from in-service transformers is a violent or nonviolent rupture caused by the heat from an electrical fault or fire.

PCB items that have been removed from service may be stored prior to disposal. Items placed in interim storage prior to disposal may be kept up to one year. Those items that are placed in temporary storage areas may be held up to 30 days if they are properly labeled and the area is covered by an SPCC Plan. If effective spill prevention, secondary containment, and spill response measures are not available for such facilities, spills occurring within their perimeters could discharge to a waterway. Chapter 13 provides a more detailed discussion of the PCB items and facilities at the Y-12 Plant.

3.6 Nonliquid Material Storage Areas

Nonliquid material storage areas are outdoor locations at which nonliquid hazardous and/or nonhazardous materials are stored. Because nonliquid materials are stored in these areas, they do not represent a hazardous material discharge threat by themselves. However, when precipitation runoff, aerial dispersal, and leaching occur in such areas, these materials can be a source of pollution.

A number of nonliquid storage areas are found at the Y-12 Plant site. In addition to coal, urea, and road salt storage areas, this potential spill source category also includes contaminated equipment lay-down areas, debris piles, and debris collection areas.

4. SPILL HISTORY

The regulations under 40 CFR 112.7(a) and 40 CFR 761.125 call for a written description of past spills at plant facilities. Such descriptions should include corrective actions taken and plans for preventing recurrences of spills.

4.1 Spill History Records

The Y-12 Plant records all spills reported to the Plant Shift Superintendent (PSS). The records are maintained in the office of the SRC. This office is located in Room 139 in Building 9116. Spill records are analyzed for trends in order to improve operating procedures throughout the Plant. The use of the spill history supports the Y-12 Plant policy of eliminating discharges of hazardous materials and oils.

The following information is annotated in each spill history record: the date and time of occurrence of each release; the location; the identification number of the department associated with the release; the type of material and contaminants released; an estimate of the quantity of material released; the type of release (e.g., fire, fire and spill, spill); the environment affected (i.e., air, water, soil); the suspected cause (e.g., mechanical failure, chemical failure, operator error); and the suspected specific action, failure, or cause of the release (e.g., contents corrode vessel, frozen pipe, loose lid). A narrative of the events that occur at each spill is prepared as a supplement to the spill report.

4.2 Spill Descriptions

Reportable spills that occurred at the Y-12 Plant from April 1989 to May 1992 are covered in this section. This information is presented in Appendix C.

5.0 SITE DRAINAGE

The complex surface and man-made subsurface drainage system of the main Y-12 Plant is documented by research performed under the Plant's Area Source Characterization and Control Program [see *Comprehensive Sampling Program for East Fork Poplar Creek Area Source Pollution Assessment and Control Plan* (Y/SUB/87-57431C/1 DRAFT)]. This system includes storm water runoff patterns, the Plant's storm sewer network, numerous Plant outfalls, two streams (EFPC and Bear Creek), and a new spill capture basin called Lake Reality. Lake Reality, located at the east end of the Plant, functionally replaced New Hope Pond, a nearby spill retention pond that was closed in 1988.

5.1 East Fork Poplar Creek and Lake Reality

The primary drainage artery for the Y-12 Plant is the EFPC. This stream originates in the western area of the Plant and proceeds eastward along the Plant's southern perimeter, essentially paralleling the Plant's long axis and Bear Creek Road. From its origin point to an area near "E" Road and Third Street, 50% of EFPC's on-site length is concealed by an underground culvert ranging from 54 to 72 inches in diameter. At the lower end of the culvert, the EFPC emerges into view and widens to an 8- to 10-foot wide stream bed with riprapped walls. The water depth is approximately 20 inches (Site Development and Facilities Utilization Plan, Y/EN-954).

The EFPC's easterly flow across the rest of the site is, for the most part, visible. At the eastern end of the Plant site, it empties into Lake Reality. The exposed portion of the EFPC and its relationship to the main Plant site and Lake Reality are shown on Map 1, Appendix D.

Approximately 6 million to 7 million gallons of water per day flow through Lake Reality via the EFPC. During dry weather, approximately 75% of this flow is derived from multiple Plant sources (cooling water, treated process water, and steam plant blowdown and condensate). The remaining 25% of dry weather flow is from groundwater infiltration. During wet weather, a substantial portion of overall flow is from storm water runoff and increased groundwater flow.

Lake Reality is located on the EFPC just north of the old New Hope Pond site. This spill capture facility consists of a 2.5-acre triangular pool that is 4 to 5 feet deep and lined with plastic. An EFPC diversion channel extends from the creek's main channel to the east side of Lake Reality. The main channel runs along the western side of the lake. The portion of the diversion channel adjacent to Lake Reality is the distribution ditch. The direct access of water in the distribution ditch to the main channel of the EFPC is controlled by an emergency weir (Cipolletti Weir) located at the north corner of the lake. Water is released from the distribution ditch into the lake through a series of turnout gates. Water from the lake outfalls directly into the main channel of the EFPC through slide gates located on the western side of the lake. Water quality monitoring stations are located upstream of the turnout gates and downstream of the slide gates.

Lake Reality is in the 100-year floodplain of the EFPC. Because of a flow restriction downstream of the Lake, the Lake and the diversion channel would probably be covered with water in the event of a 100-year storm.

In conjunction with the closure of New Hope Pond, the skimmer (oil/water separator) located immediately upstream of it has been removed. A new, functionally different skimmer has been installed at the origin of the distribution ditch.

The Lake Reality project is part of a comprehensive effort to improve the quality of the EFPC. Lake Reality is designed to function as a backup secondary containment structure. A discharge of hazardous material to the EFPC may be contained in Lake Reality by ensuring closure of the slide gates at the emergency weir on the distribution ditch and the gates at the lake's outfall weir.

Below Lake Reality, the EFPC is confined by 8-foot-high banks riprapped with limestone. In this area, the stream bed consists of limestone rocks and some interspersed gravel. Stream width varies from 10 to 15 feet.

After leaving the Y-12 Plant area, the EFPC flows northwest into developed areas of the city of Oak Ridge. The stream's predominant substrate in this area consists of rocks measuring 1 to 4 inches in diameter. Stream width varies from 10 to 25 feet, and the average stream gradient is about 21 feet per mile. In addition to developed areas, this portion of the EFPC traverses several large pastures and a hardwood forest as it proceeds toward its confluence with Poplar Creek. K-25 Site maintains an oil skimmer on the EFPC upstream of its confluence with Poplar Creek. Any oil spill that might escape Lake Reality could affect the lower EFPC, but this backup system would minimize a discharge into Poplar Creek and higher order streams such as the nearby Clinch and Tennessee Rivers.

5.2 Creek Surveillance

The need to minimize any impacts that Y-12 Plant operations may have on the aquatic life and water quality of EFPC has resulted in an increase in creek surveillance.

Beginning in March of 1991, the Maintenance and Utilities Division (MUD) assigned one, sometimes two, employee(s) to observe the EFPC for unpermitted conditions such as the presence of foam, floating solids, oil sheens, etc. The "creekwalker" performs these duties during the day shift from Monday through Friday. MUD personnel also make spot checks during off hours and weekends. MUD, now the facility manager of EFPC and Lake Reality, has been instrumental in assisting the Environmental Management Department in eliminating unpermitted discharges and pursuing full compliance with environmental regulations.

Regular surveillance is also achieved as part of the Y-12 Plant Biological Monitoring and Abatement Program (BMAP) conducted under the Y-12 NPDES permit. ORNL biologists spend many hours on the EFPC, Bear Creek, and other area streams sampling water and conducting studies on fish and aquatic life as part of the BMAP.

Surveillance has also improved by implementing BMPs in the vicinity of the creek and the storm drains. Beginning in June of 1992, a creek buffer zone was established to prohibit parking of vehicles/tankers and the storage of materials within 20 feet of the creek bank. A BMP has been established for the maintenance of

vegetation along the EFPC, placing limits on the use of herbicides but still allowing for good visibility.

One of the most effective creek surveillance tools, however, is the real-time monitoring stations on the EFPC, which can detect immediate changes caused by a spill (such as pH, conductivity, flow, etc.). These monitoring stations are linked to the PSS's office so that prompt action can be taken.

5.3 Use of Lake Reality for Spill Containment

Lake Reality has the capacity to capture approximately 8 hours of dry weather flow from EFPC should a major spill occur. MUD Procedure 50-39-UD-075 describes how to place Lake Reality into spill containment and bypass modes. Changing the flow pattern at Lake Reality would be performed only when first lines of defense (such as floating booms, etc.) were not effective. Lake Reality was successfully used to capture a release of aluminum nitrate in January of 1992.

5.4 Supplemental Flow with Raw Water

During an emergency (when water is temporarily shut off), it may be necessary to supplement the flow of the EFPC with raw water to prevent a downstream fish kill. This action would only occur with the knowledge of the Y-12 PSS, the Y-12 Environmental Coordinator, the MUD, and the Water Plant (operated by Johnson Controls) and with the proper notification of federal, state, and local authorities.

Raw water originates from an intake on the Clinch River, where it receives a mild "shock" of 0.2 ppm of chlorine before being pumped to the water plant. A 6-inch line carrying the raw water traverses the western side of the EFPC, opposite the emergency spillway for Lake Reality. In the event raw water was needed, the Water Plant would be contacted to open Valve Number 59, located in Pit Number 17. This action would initiate raw water flow in the line.

Supplemental flow with raw water during a major spill or other emergency is one of several options that should be considered. Other options include:

- temporarily discontinuing chlorine addition at the Clinch River intake should chlorine level be high (requires Water Plant approval),
- monitoring water quality at, and downstream of, the spill area,
- establishing a surveillance schedule at points along the creek, and
- requesting assistance from K-25 Site personnel or others for corrective action regarding the EFPC and/or Poplar Creek.

5.5 Plant Drainage Areas (Area Source Program) and Storm Sewer System

The Y-12 Plant's man-made drainage system is linked to the EFPC by approximately 230 outfalls. At locations upstream of Lake Reality, many of these outfalls directly feed the EFPC. The various Y-12 outfalls to the EFPC are tied to an extensive dendritic pipe system that traverses most of the Plant site. This system includes the drainage pipes for storm sewers, buildings, process systems, cooling systems, a steam plant, and water treatment plants. A portion of the storm sewer network (pipes: 18 inches in diameter or greater) is shown on Map 2, Appendix D.

Projects under Y-12's Area Source Characterization and Control Program have selected key locations in the Plant drainage system that are representative of the flow from discrete areas of the Plant, identified topographically and by building designations. Permanent water quality monitoring stations are located at selected strategic locations.

In conjunction with the NPDES Monitoring and Sampling Program, sixteen of these water quality monitoring stations will be put in service at the Y-12 Plant site. These stations will be equipped to monitor water flow and perform real-time monitoring of pH, temperature, and conductivity. Each station will also be equipped with a flow-proportional composite sampler. Presently, seven monitoring stations are in service at the Y-12 Plant. Data from these monitoring stations is continuously fed to a central computer in the Environmental Monitoring Laboratory located in Building 9704-1. Whenever water quality indicators vary significantly from programmed averages at one or a series of stations, a possible spill is indicated. When these data variations occur, an alarm system is tripped. The alarm signals are immediately forwarded to the PSS office. The PSS is the first person notified in the spill response process.

In addition to significantly cutting spill notification and response times, these water quality monitoring stations will be valuable in spill recognition, tracking, and control. Spills that might not be visually apparent at their onset can be recognized by the monitoring equipment. Such spills will be immediately identified within a discrete area of the Plant site. This will expedite visual identification and control/mitigation. Since a flow of spilled material will largely follow the existing pipeline routes within a given area, its direction of flow will be toward the water quality monitoring station for that area. Using the same principle, a spill would be tracked across the entire Plant site as it passes each station. Knowing the direction of flow and migration will allow for more direct and effective downstream control and treatment of a spill.

Under the Stream Management Analysis Program (SMAP), the Y-12 Plant now uses a complex mathematical model to predict the environmental impact of changes in pollutants and pollutant characteristics on the EFPC. All EFPC water sources (groundwater infiltration, seepage into the drainage system, storm water runoff, and in-plant sources) are included in the model.

Beginning in July 1988, Lockwood Greene Engineering (LGE) began surveying the upper reaches of the EFPC for all outfall pipes that may discharge process wastewater. Pipe construction, diameter, location on the creek bank, distance from the previous outfall, and estimated flow were recorded. Information obtained from the field survey was used to update existing block plans of the storm sewer system.

Forty-three of the major production buildings in the Y-12 Plant were surveyed from August to December 1989 for all sources of water discharging to the storm sewer system. An existing drain data base and existing floor plan drawings, showing the storm sewer network within the buildings, were updated by verifying each drain line in the forty-three buildings. Information obtained from the building drain survey was used in conjunction with the outfall survey to produce outfall notebooks. The outfall notebooks identify each building tied to the outfall and the potential sources of wastewater flowing to the EFPC. Building notebooks have been produced for seventy-four buildings after an additional thirty-one buildings were surveyed. The drain survey has been completed for all of the Y-12 production buildings.

5.6 Sanitary Sewer System

The Y-12 Plant has as industrial user's permit with the city of Oak Ridge, which lists parameters to be monitored in the sanitary and storm sewer systems. Regular sampling has shown a good record of compliance with the city permit.

The plant sanitary sewer system is connected to the city's sewer system at the eastern end of the plant. Presently, there are two separate sewer lines that are connected to the city system. These lines are commonly referred to as the East and West sewer lines. The West sewer line discharges all sanitary sewer flow from the Protected area, and the East sewer line discharges sanitary sewer flow from both the Limited and Uncleared areas.

The spill risk potential associated with the storm sewer system can also be applied to the sanitary sewer system. Procedures are in place to reduce the risk of spills to the sanitary sewer system. Procedure 70-920, "Connections to the Plant Storm and Sanitary Sewer System," outlines the process of approval of storm and sanitary sewer connection requests. The purpose of this procedure is to ensure that no connections are approved that might allow the introduction of an unpermitted industrial waste into the storm or sanitary sewer systems. In addition, Procedure 10-106, "Requirements for the Storage of Chemicals and Petroleum Based Materials to Maintain Environmental Compliance," establishes a Y-12 Plant policy and assigns responsibilities for effective environmental management of the storage of chemicals and petroleum-based materials to prevent the release of such materials to either the storm or sanitary sewers (see Appendix A).

Notification and spill response procedures for releases to the sanitary sewer are the same as those mentioned in Section 7, Contingency Plan: Notification and Spill Response Procedures.

5.7 Bear Creek

Bear Creek originates in the west area of the Y-12 Plant and flows to the southwest along the floor of Bear Creek Valley. It empties into the EFPC at a point due north of the junction of State Highways 58 and 95. This small stream is relatively dry near its origin, but after it flows past the Plant, groundwater recharge increases its volume. Many of the Y-12 Plant's waste processing facilities have been constructed in the western area of the Plant during the past seven years. Potentially, these facilities could pose an increased risk of a discharge to Bear Creek. However,

these stationary waste facilities were constructed to prevent spills. The Y-12 Plant wastewater facilities have NPDES permits for discharge to the EFPC.

Much of Bear Creek's course across the federal reservation parallels Bear Creek Road, the major transportation artery into and out of the Plant. Hazardous materials, including hazardous wastes, are transported on this road. The creek's continuous proximity to Bear Creek Road presents the possibility that an on-site or off-site spill of hazardous materials from a vehicle (e.g., a tank truck or a truck carrying drums or portable polytanks) might discharge into the creek.

Depending on its location, any spill that could discharge into Bear Creek would be handled through the Y-12 Plant's on-site or off-site spill response procedures (Chapter 7). Initial efforts would focus on controlling and mitigating the spill at or near its source. If any discharged hazardous material were to reach the lower portion of Bear Creek, a weir located near the creek's intersection with Highway 95 would be used in conjunction with portable equipment to contain the spill. Furthermore, in the event of an oil spill, the K-25 oil skimmer, located on the lower EFPC, would prevent oil from entering Poplar Creek and higher order streams.

6. SECONDARY CONTAINMENT/DIVERSION STRUCTURES AND EQUIPMENT

The regulations under 40 CFR 112.7(c) call for providing secondary containment/diversion structures and equipment for facilities that contain hazardous materials. These structures and equipment should be sufficient to prevent discharges from reaching navigable water courses.

Several different kinds of secondary containment/diversion structures and equipment are used at the Y-12 Plant. They include dikes, berms, curbing, weirs, booms, retention ponds, absorbent materials, and culverts.

6.1 Dikes

A dike is an embankment or ridge of either natural or man-made materials used to prevent the movement of liquids, sludges, solids, or other materials. As used in this plan, the embankments or ridges must be greater than 6 inches in height.

The dike is the most numerous type of secondary containment structure used at the Y-12 Plant. They are most often used around exterior bulk storage tanks. Approximately 60% to 70% of these tanks are diked. Volume II contains information concerning secondary containment status of the Y-12 facilities.

Three types of dikes are used. These are poured concrete dikes, excavated earthen dikes, and portable dikes.

The vast majority of all permanent dikes are constructed of poured, impenetrable concrete. Many of the older dikes may have been constructed by multiple pourings of concrete, but it is often difficult to identify the pouring seams on many of these structures. The newer concrete dikes were constructed by single pourings as evidenced by the absence of pouring seams on these structures.

There are three excavated earthen dikes at the Y-12 Plant. All of these dikes function as secondary containment structures for bulk storage tanks [Equipment, Testing, and Inspection (ET&I) Numbers 1122-0269, 1122-0274, 1120-0468, and 1122-0469].

A portable dike surrounds a large bulk storage tank (ET&I Number 1122-0238) located between Buildings 9720-13 and 9720-18. This dike consists of a single, on-side row of straw bales covered with polyethylene sheeting.

6.2 Berms

A berm may be defined as a narrow shelf, path, or ledge typically at the top or bottom of a slope. It may also be a strip of ground along a dike.

Berms are used infrequently at the Y-12 Plant. One such structure surrounds the excavated earthen dike at the tank with ET&I Number 1122-0269. The periphery of Lake Reality is also bermed.

6.3 Curbing

A curb is a small raised edge or margin that functions as a secondary containment structure. As used in this plan, a curb is 12 inches or less in height and may be either permanently installed or portable.

Permanent curbing is made of asphalt or concrete. It is used primarily as secondary containment for facility tank car and tank truck loading/unloading racks and for parked fuel tank trucks located at Building 9811-1.

Portable curbing is constructed with 12-inch diameter PVC pipe and plastic liners. Six-foot lengths of PVC pipe are split diametrically into six-inch high sections. These sections are then fitted with rope handles. The handles are used to place lengths of split pipe convex side up and edge-to-edge around a facility location. A uniform, impervious plastic liner is then draped over the pipe sections and the facility is situated above the liner and inside the perimeter formed by the pipe sections. Secondary containment capacity is a direct function of the number of pipe sections used and their proximity to the enclosed facility.

Portable curbing may be useful in a variety of spill prevention and control situations. However, it is most often used as secondary containment for portable primary containers such as polytanks and drums.

6.4 Diversion Structures

Numerous diversion structures are used to control and direct storm water runoff on the Plant site. These include well-planned and landscaped surface gradients, slopes, and channels. Major buildings are equipped with roof drains or guttering.

Much of the Plant's surface runoff is directed to the subsurface drainage system through storm sewer inlets. The storm sewer system and the Plant effluent systems consist of pipes and culverts.

6.5 Weirs

Weirs are specially designed obstructions placed strategically in a stream to divert stream flow through a prepared aperture. They are typically constructed of concrete.

A total of five weirs will be in use on the Plant site during the coverage period of this plan. Two weirs are situated on the EFPC upstream from Lake Reality. One of these serves simultaneously as the main EFPC inlet to the distribution ditch and as the downstream flow restraint for the oil skimmer basin. This weir helps to maintain the proper functioning of the oil skimmer by controlling flow and backup. It also has the capability to capture spills of hazardous materials that are lighter than water. Just south of Building 9201-2, a flume weir is used to monitor the flow of the EFPC. It has no spill-capture capabilities.

Lake Reality is equipped with two weirs. A Cipolletti weir (top)/V-notch weir (bottom) combination is installed on the northwest side of the lake. Slide gates at this weir control the direct flow of lake water into the main channel of the EFPC. An emergency Cipolletti weir and slide gates are located on the northwest corner of the lake at the distribution ditch exit to the EFPC. In the event of a hazardous material discharge to the EFPC, the slide gates at each weir could be closed. With this done, the EFPC's flow would be directed into the lake's distribution ditch, and the spill would be captured in the lake.

A fifth weir is located off-site at White Wing Station on Bear Creek. This weir is used for flow monitoring. In the event of an upstream discharge of hazardous

materials to Bear Creek, this weir would serve as a set-up station for portable secondary containment equipment.

6.6 Booms

A boom is a permanent or temporary floating barrier used primarily for containing oil spills. A small, permanent boom is installed in the oil skimmer basin located on the EFPC upstream of Lake Reality. This boom is used to force floating oil and debris into the oil skimmer basin.

Several portable booms are maintained as part of the Y-12 Plant's permanent stock of spill response equipment (see Chapter 7). These smaller booms may be installed on a stream as small as the EFPC or connected end-to-end to form a single, long boom that has the capability to span Lake Reality.

6.7 Other Barriers

The Y-12 Plant maintains a supply of sandbags at several strategic locations throughout the Plant. These are sometimes used to construct temporary barriers during spill response situations. These sandbags and other portable secondary containment and spill response equipment are listed in Chapter 7.

6.8 Spill Retention Ponds

Lake Reality functions as a backup secondary containment facility for the Plant. A detailed description of this facility and its spill capture capabilities are presented in Section 3 of Chapter 5.

6.9 Sorbent Materials

Seven kinds of sorbent materials are used at the Plant. Sorball and Safety Sorb are all-purpose agents. Sorbent-C, a floating sorbent material, is used for absorbing oil from water surfaces. Floating oil is also absorbed with 18-inch square by 1/8-inch thick floating pads. Spills in dry areas may be absorbed with vermiculite, a nonfloating, granular material that is lighter than Sorball and more absorbent. Soda ash and lime are used to absorb liquids and neutralize acids.

6.10 Containment Levels at the Y-12 Plant

The relative positioning of secondary containment structures and equipment around facilities and along the EFPC creates a series of descending containment levels (Levels 1-5, Table 6.1) that function to prevent the discharge of hazardous materials to the lower EFPC. The weir on Bear Creek and the K-25 oil skimmer (Level 6), along with portable equipment, could be used to prevent pollution of higher order streams if spilled hazardous material were to breach the first five levels. Although portable containment equipment is listed fifth in Table 6.1, it may be used as needed at any point in the sequence after Level 1.

TABLE 6.1. SEQUENCE OF CONTAINMENT LEVELS AT THE Y-12 PLANT

Containment Level	Containment Facilities/Equipment
Level 1	Primary Containment Facilities (Tanks, Drums, etc.)
Level 2	Secondary Containment (Dikes, Berms, Curbing, Other Barriers)
Level 3	Weirs (Oil Skimmers)
Level 4	Lake Reality
Level 5	Portable Containment Equipment*
Level 6	K-25 Oil Skimmer on EFPC/ Weir on Bear Creek

* May be used at any point in the sequence,
as necessary.

7.0 CONTINGENCY PLAN NOTIFICATION AND SPILL RESPONSE PROCEDURES

A contingency plan details the actions that must be taken in response to a hazardous material release. These actions are accompanied by an accounting of the material resources available to carry them out. The action component of the plan is embodied in the Y-12 Emergency Plan, and the Plant's spill response implementing procedures. These procedures list the persons, organizations, and agencies to be notified when a spill is detected. In addition to specifying a chain of command that reaches to the upper levels of Plant management, the procedures specify the responsibilities of the various entities involved and the dynamic relationships between them. These and other Y-12 Emergency Procedures are listed in Table 7.1.

The contingency plan also includes communications during spill response, plant evacuation, disaster assistance, critical water use areas, spill response equipment, spill response procedures, and environmental incident reporting.

7.1 Implementation of the Contingency Plan

The contingency plan is immediately implemented by notifying the on-duty PSS of an observed on-site or off-site hazardous material spill. This notification simultaneously initiates actions under the appropriate spill response procedure(s).

7.2 Responsibilities of Personnel, Organizations, and Public Authorities for Spill Response

Spill response involves the cooperative interaction of designated Y-12 Plant personnel, plant organizations, and, if needed, local, regional, and national authorities. The potential for rapid, integrated action rests with each responding entity's knowledge of its responsibilities and how these are connected with the responsibilities of the other entities. The persons and organizations charged with spill response and their various responsibilities are listed in this section. Because environmental incidents involving spills of hazardous materials are categorized as On-Site Spills or Off-Site Spills by the Y-12 Plant, the persons/organizations responsible for responding to each type of spill and the responsibilities of each entity are listed under these categories. Under each category heading, the actual responsibilities are listed according to Notification Responsibilities and Other Responsibilities.

TABLE 7.1 Y-12 PLANT EMERGENCY PROCEDURES

Procedures/Titles	Procedures/Numbers
The Y-12 Plant Emergency Preparedness Program	40-000
Reporting an Emergency	40-001
Personnel Evacuation	40-002
Response of Emergency Personnel	40-003
Personnel Emergency Accountability	40-004
Y-12 Plant and Area-Wide Alert	40-005
Partial/Total Y-12 Plant Evacuation	40-006R
Reporting of and Responding to Site Hazardous Material Releases	40-007
Response to Off-Site Hazardous Material Spills	40-008
Response to a Bomb Threat or Device	40-009
Emergency Notification, Reporting, and Response Levels	40-010
Y-12 Plant Emergency Plan	40-025
Management of an Emergency Criticality	40-100
Lake Reality Operations (Maintenance and Utilities Division)	50-39-UD-075

7.2.1 Responsibilities for On-Site Spill Response

7.2.1.1 Spiller or Employee Recognizing Spill

I. Notification Responsibilities

A. First and immediately notifies the PSS and provides the following information:

1. Name and telephone number;
2. Any injuries;
3. Exact location of the incident;
4. Name and amount of material spilled; and
5. Whether or not the material has entered a creek or storm sewer system.

B. Notify the local supervisor in the spill area or one's immediate supervisor.

II. Occurrence Reporting Responsibilities

Participates in Occurrence Reporting procedures. (See Section 7.7.2.)

III. Other Responsibilities

- A. Practices safe handling and use of hazardous material.
- B. Learns spill response procedures as supplied by supervisor.
- C. Evacuates personnel in the event of a spill if conditions require. (See Section 7.3.4.)
- D. Provides a knowledgeable member to meet the Y-12 Plant emergency response squad and/or the PSS, and directs the response personnel to the incident.
- E. Wears proper personal protective equipment. (Only by employees trained in proper spill response procedures.)
- F. Performs action to control or mitigate spill. (Only by employees trained in proper spill response procedures.)

7.2.1.2 Supervisors/Line Management

I. Notification Responsibilities

- A. Ensures that the PSS has been notified.
- B. Notifies, as appropriate, Department Head/Superintendent, Division Environmental Officer, and Division Manager of the incident.

II. Occurrence Reporting Responsibilities

Participates in Occurrence Reporting procedures. (See Section 7.7.2.)

III. Other Responsibilities

- A. Develops and maintains proper spill response procedures for each facility with hazardous material.
- B. Maintains personal protective equipment and spill response supplies at each facility. Performs monthly inspections and quarterly inventories.
- C. Trains personnel in safe procedures for transport, use, storage, and disposal of hazardous material.
- D. Trains personnel in accordance with spill response procedures.
- E. Ensures that the PSS has been notified.
- F. Reports to the incident site.
- G. Takes control of situation until PSS or SRC arrives at the site and assumes control.
- H. Has personnel evacuate the area as necessary.
- I. Provides Material Safety Data Sheets (MSDS) (when available) to the PSS for the material involved. (See Section 7.5.2.)
- J. Requires the use of proper personal protective equipment.
- K. Initiates prompt action to correct, control, and mitigate spills.
- L. Accounts for personnel during and after the incident.
- M. Assists as directed by the PSS or his designated representative (Plant Emergency Squad Fire Chief).

- N. Provides any necessary advice and assistance in material handling, transfer, and incident treatment activities performed by the spill response crew.
- O. Requests disposal and/or treatment of liquid and solid wastes generated during the incident (Health and Safety Procedure 70-907, "Waste Management--Radioactive and Toxic Waste").
- P. Makes provisions for empty tanks for any necessary liquid collection and transfer.
- Q. Arranges for payment of clean-up costs by providing work order numbers or other appropriate funding.
- R. Completes an Environmental Incident Report, if requested.
- S. Implements corrective actions to prevent incident recurrence.
- T. Ensures that departmental relief of spill response personnel is available during extended spill operations.

7.2.1.3 Plant Shift Superintendent On Duty/Local Authorities

I. Notification Responsibilities

- A. Receives first notification of incidents or potential incidents involving hazardous material.
- B. Evaluates available information about the incident. Based on this evaluation, the PSS may then notify and request responses from a few individuals/organizations for minor incidents or many individuals/organizations for major incidents. The following individuals, organizations, agencies, and authorities may be notified, if deemed necessary.

- 1. Employee Reporting Spill/Spiller
- 2. Supervisors/Line Management
- 3. Plant Emergency Squad (includes Y-12 Fire Department)
- 4. Y-12 Security Patrol Department
- 5. Y-12 Fire Department
- 6. SRC or his/her designated alternate

7. Spill Response Crew (in Waste Transportation, Storage, and Disposal Department)
 8. Plant Laboratory Department
 9. Environmental Management Department
 10. Fire Protection Engineering Department
 11. Industrial Hygiene Department
 12. Health Physics Department
 13. Criticality Safety Department
 14. Industrial Safety Department
 15. Maintenance Divisions
 16. Photography Department
 17. Plant Manager
 18. Environmental Coordinator/State, Regional, and Federal Authorities (including DOE and EPA)
 19. Y-12 Health Center
 20. Spill Prevention Committee
 21. K-25 Site
 22. ORNL
 23. Public Relations Department
 24. Others as deemed necessary
- C. Notifies and requests any necessary assistance from public emergency response organizations such as:
1. Oak Ridge Fire and Police Departments, Phone 911, and/or
 2. Anderson County Sheriff Department, 457-2414.
- D. Calls in off-duty PSSs, as necessary.

E. Calls on expert emergency response organizations for information and advice, if necessary:

1. Association of American Railroads, Hazardous Material Systems (BOE) at (202) 639-2222.
2. Chemical Manufacturers Association, Chemical Transportation Emergency Center (CHEMTREC) at (800) 424-9300.

II. Occurrence Reporting Responsibilities

III. Other Responsibilities

- A. Directs emergency response in the role of Plant Emergency Director.
- B. Initiates necessary rescue operations.
- C. Delegates authority as deemed necessary.
- D. Performs or delegates person to perform, as necessary, the actions outlined in Appendix A of Emergency Procedure 40-007.
- E. Tape-records radio and telephone traffic during the emergency.
- F. Has pictures taken during all phases of corrective and clean-up actions for major incidents and has written records made of events and times.
- G. Determines when the emergency is terminated.
- H. Activates the Y-12 Plant's emergency operations center as appropriate.
- I. Directs reentry and recovery operations.

7.2.1.4 Plant Emergency Squad

I. Notification Responsibilities

- A. Responds, if requested, in accordance with "Plant Emergency Squad Spill Response Guidelines," Appendix B of Emergency Procedure 40-007.
- B. Assists as directed by PSS.
- C. Performs emergency response actions for accidents, injuries, etc.
- D. Controls and extinguishes any fires.

- E. Performs quick-fix actions to stop the discharge of leaking hazardous material and to contain and stop the spread of spilled material.

II. Other Responsibilities

- A. Establishes the on-scene incident command center (ICC) and controls the emergency using this concept of operation.

7.2.1.5 Spill Response Coordinator or Designated Alternate

I. Notification Responsibilities

- A. Received notification from PSS.

II. Other Responsibilities

- A. Does not perform as the PSS's delegate. Acts as technical advisor for PSS or incident commander.
- B. Collects information and evaluates situation from environmental standpoint only. If the fire department has responded to incident, the incident commander evaluates the situation and makes containment and clean-up operation recommendations. For incidents that do not require fire department response, the SRC may make containment and clean-up recommendations.
- C. Informs Environmental Coordinator of details of the incident.
- D. Records incident-related information such as date, time, spill source, location, description, cause, and containment and clean-up measures.
- E. Advises clean-up crew of operations or methods the fire department is using to contain and control spill. If the situation does not require response from the fire department, SRC may make recommendations to clean-up personnel for clean-up measures.
- F. Maintains spill records.

7.2.1.6 Environmental Coordinator

I. Notification Responsibilities

- A. Receives discretionary notification from the PSS when the significance of a spill is determined.

- B. Assists in reporting incident as specified in Standard ESS-OP-301, titled "Occurrence Reporting System" (ORS).
- C. Notifies Plant Manager and DOE of applicable regulatory reporting requirements. DOE is responsible for notifying:
 - 1. Tennessee Emergency Management Agency at (800) 262-3300 per Tennessee Hazardous Waste Management Rule 1200-1-11-.04.(4);
 - 2. U.S. Environmental Protection Agency Regional Response Center in Atlanta, Georgia, at (404) 347-4062;
 - 3. Tennessee Department of Environment and Conservation (1) 741-3111; and
 - 4. National Response Center of the U.S. Environmental Protection Agency at (800) 424-8802.

7.2.1.7 Environmental Management Department

I. Clean Water and Hazardous Waste Sections

A. Notification Responsibilities

- 1. Not Applicable.

B. Other Responsibilities

- 1. Interprets environmental regulatory requirements, "reportable quantities," and "harmful quantities."
- 2. Establishes "clean" standards for clean-up operations.
- 3. Advises Environmental Coordinator, PSS, Plant Manager, and DOE on regulatory requirements.

II. Environmental Surveillance Section

A. Notification Responsibilities

- 1. Not Applicable.

B. Other Responsibilities

- 1. Reports, if requested, to the incident command post with personal protective equipment and sampling equipment.

2. Samples to verify hazardous material identification.
3. Samples to determine boundaries of contaminated areas and contaminant concentrations.
4. Samples after clean-up to verify proper clean-up.

7.2.1.8 Fire Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Responds as an integrated part of the Plant emergency squad.
- B. Provides emergency response vehicle with spill response supplies.
- C. Provides any necessary services and equipment (e.g., extra self-contained breathing apparatus, acid suits, pumper unit for emergency wash water).

7.2.1.9 Security Patrol Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Maintains crowd control to keep nonessential and unauthorized personnel away from emergency area boundaries as established by PSS.
- B. Maintains traffic control as requested by PSS.

7.2.1.10 Health Physics Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Reports, if requested, to the incident command center with personal protective equipment and monitoring equipment.
- B. Performs necessary site and personnel monitoring and advises the PSS of the radiological concerns.
- C. Advises the PSS of the proper personal protective equipment that must be worn as a result of radioactive contaminants.
- D. Informs the Personnel Monitoring Section (same department) and the Criticality Safety Department immediately of the details of the incident and relays any resulting advice to the PSS.
- E. Samples after clean-up activities to verify proper clean-up of radioactive contaminants.

7.2.1.11 Criticality Safety Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Evaluates information provided by Health Physics Department and makes appropriate recommendations to the PSS.

7.2.1.12 Industrial Hygiene Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Reports, if requested, to the incident command center with personal protective equipment and monitoring equipment.
- B. Surveys the area for toxic and combustible gases.
- C. Advises the PSS in the establishment of protective boundaries around the contaminated area.

- D. Advises the PSS of the proper personal protective equipment that must be worn.
- E. Advises the PSS of any necessary evacuations of the adjacent areas because of potential widespread contamination and airborne toxic materials.
- F. Performs any necessary toxic and combustible gas surveys throughout all clean-up operations.
- G. Samples after clean-up activities to verify proper clean-up.

7.2.1.13 Industrial Safety Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Reports, if requested, to the incident command center with personal protective equipment.
- B. Advises the PSS of the proper personal protective equipment that must be worn.
- C. Observes emergency response and clean-up activities and identifies potential safety problems.
- D. Advises the PSS on safe procedures and equipment.

7.2.1.14 Waste Management Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Maintains and, if requested, provides a Spill Response Crew who will:
 - 1. Report to the incident command center with personal protective equipment, pump, hoses, and spill response supplies;

2. Assist the Plant emergency squad in stopping the discharge of hazardous material;
 3. Contain and collect spilled materials (e.g., build dikes of sandbags and soil, spread absorbent materials);
 4. Neutralize spilled materials, if necessary;
 5. Transfer materials into proper drums, tanks, tank trailers, and dump trucks; and
 6. Perform clean-up operations.
- B. Stocks and inspects emergency sandbag storage locations.
 - C. Provides and/or transports any necessary equipment and equipment operators to the scene (e.g., empty tank trailers, bulldozers, backhoes, dump trucks).
 - D. Coordinates treatment and/or disposal of waste materials.
 - E. Decontaminates and prepares equipment for other emergencies.

7.2.1.15 Maintenance and Utilities Division

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Provides emergency transportation, equipment (cranes, forklifts, air compressors, etc.), and personnel (laborers, electricians, riggers, pipefitters, etc.) as required.

7.2.1.16 Plant Manager

I. Notification Responsibilities

- A. Notifies the DOE Contracting Officer's Technical Representative (COTR).

II. Other Responsibilities

- A. Establishes organization to determine damage and initiates investigation reports as required by Administrative Procedure 10-001, "Significant Occurrences--Notify, Investigate, Report."**

7.2.1.17 Photography Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Makes a photographic record of the different phases of the containment and cleanup activities, if necessary.**

7.2.1.18 Plant Laboratory Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Gives high priority to analyzing samples obtained at the incident and providing the analytical results.**

7.2.1.19 Fire Protection Engineering Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Provides technical assistance.**

7.2.1.20 Public Relations Department

I. Notification Responsibilities

- A. Serves as the company voice to the news media.**

II. Other Responsibilities

- A. Obtains information about incidents and develops appropriate news releases.
- B. Coordinates all news releases through DOE, Y-12 Plant management, and Environmental Coordinator.

7.2.1.21 Environmental Officers Program

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Develops and implements spill prevention projects or tasks as coordinated by the SRC with the Divisional Environmental Officer.

7.2.1.22 Y-12 Health Center

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Provides for first aid and medical care and arranges for any necessary hospital care for Y-12 Plant personnel sustaining occupational injuries, occupational illness, or trauma resulting from accidents or illnesses.

7.2.1.23 Oak Ridge National Laboratory

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Provides firefighting assistance to the Y-12 Plant, if requested. (Policy GP-12, "Mutual Aid Firefighting Agreement for Oak Ridge Installations.")
- B. Provides technical assistance.

- C. Reports to the ICC for further direction and assistance.

7.2.1.24 K-25 Site

I. Notification Responsibilities

- A. Not applicable.

II. Other Responsibilities

- A. Provides firefighting assistance to the Y-12 Plant, if requested. (Policy GP-12, "Mutual Aid Firefighting Agreement for Oak Ridge Installations.")

7.2.2 Responsibilities for Off-Site Spill Response

7.2.2.1 Hazardous Materials Transport Vehicle Driver

I. Notification Responsibilities

- A. If possible, notifies the PSS and his/her supervisor of an emergency by radio before leaving the vehicle. The following information should be transmitted with notification:
 - 1. Radio identification number, driver's name, and the vehicle identification number;
 - 2. Location of the emergency (highway name or number, distance from intersection, reference landmarks, etc.); and
 - 3. Type of emergency (injury, vehicle accident, fire, spill of hazardous materials, etc.).
- B. Performs communications for hazardous materials shipments as set forth in Appendices A ("Communication Instructions for Waste Shipments to K-25 Site") and B ("Communication Instructions for Sodium Hypochlorite Shipments to Knoxville") of Emergency Procedure 40-008.
- C. Checks the personal protective equipment and spill response equipment in the hazardous materials transport vehicle and notifies supervisor of any deficiencies.

II. Other Responsibilities

- A. Specified in Appendices A, B, and C of Emergency Procedure 40-008.

7.2.2.2 Plant Shift Superintendent On Duty/Local Authorities

I. Notification Responsibilities

- A. Receives first notification of incidents or potential incidents involving hazardous material transport vehicles.**
- B. Receives notifications when hazardous material transport vehicles leave the Y-12 Plant and records pertinent information.**
- C. Evaluates available information about the incident and, if necessary, requests immediate response to the incident from the following.**
 - 1. Plant Emergency Squad (includes Y-12 Fire Department)**
 - 2. Y-12 Security Patrol Department (within the 229 Boundary)**
 - 3. SRC**
 - 4. Spill Response Crew (in Waste Management Department)**
 - 5. Hazardous Material Generator [Waste Treatment Operations Department for liquid wastes going to K-25 Site, Lithium Chemistry Department for sodium hypochlorite shipments to Knoxville, and Waste Transportation, Storage, and Disposal Department for photographic waste solutions (generated by Product Certification Division) to ORNL]**
 - 6. Environmental Management Department**
 - 7. Industrial Hygiene Department**
 - 8. Health Physics Department**
 - 9. Criticality Safety Department**
 - 10. Industrial Safety Department**
 - 11. Public Relations Department**
 - 12. Photography Department**
 - 13. Plant Manager**
 - 14. DOE, Oak Ridge Operations Center**
 - 15. Materials Department--Traffic/Transportation**

16. Environmental Coordinator (state, local, and national authorities, including DOE and EPA)
 17. Y-12 Health Center
 18. Law Department
 19. K-25 Site
 20. ORNL
 21. Transportation Safety Coordinator
 22. Plant Laboratory Department
 23. Maintenance Divisions
 24. Nuclear Materials, Control, and Accountability Departments
 25. Others as deemed necessary
- D. Notifies and requests any necessary assistance from public emergency response organizations such as:
1. Oak Ridge Fire and Police Departments, 911;
 2. Tennessee Emergency Management Agency, (800) 262-3300;
 3. Anderson County Sheriff Department, 457-2414; and/or
 4. Knox County Sheriff Department, (1) 521-2432.
- E. Calls in off-duty PSSs, as necessary.

II. Other Responsibilities

- A. Directs emergency response in role as Plant Emergency Director.
- B. Delegates authority as deemed necessary.
- C. Tape-records radio and telephone traffic during the emergency.
- D. Determines and/or verifies the hazardous material involved by reviewing the PSS's "Waste Tanker Shipments" log or by contacting the organization responsible for the hazardous material (e.g., Waste Treatment Operations Department, Lithium Chemistry Department, or Waste Transportation, Storage, and Disposal Department).

- E. Reviews the shipping papers to determine and/or verify the involved hazardous material.
- F. Meets and directs activities of arriving response personnel.
- G. Requires the use of proper protective clothing and equipment for response personnel based on guidelines provided by the Industrial Hygiene, Health Physics, and Industrial Safety Departments.
- H. Initiates any necessary rescue operations.
- I. Establishes boundaries of contaminated areas and prohibits access into the contaminated areas without proper protective equipment.
- J. Directs actions to stop discharges of hazardous material from leaking containers, if feasible.
- K. Directs actions to contain any spilled hazardous materials.
- K. Directs sampling to verify and/or determine the involved hazardous material.
- M. Directs sampling, monitoring, and laboratory analysis to determine contaminant spread.
- N. Has pictures taken during all phases of corrective cleanup actions and has written record made of events and times.
- O. Maintains a constant flow of up-to-date information to the Emergency Operations Center. (This is the focal point for coordination of emergency actions. The center is co-located with the PSS office and may, during emergencies, be relocated to the alternate emergency operations center.)
- P. Calls on expert response organizations for information and advice, if necessary.
 - 1. Association of American Railroads, Hazardous Material Systems (BOE), (202) 639-3333
 - 2. CHEMTREC, (800) 424-9300
- Q. Determines when the emergency is terminated.

7.2.2.3 Spill Response Coordinator

I. Notification Responsibilities

- A. Receives notification from PSS. Collects information. If the fire department has responded, the incident commander will make containment and clean-up recommendations. If the fire department is not needed, SRC may make recommendations to clean-up personnel.
- B. Informs Environmental Coordinator of details.
- C. Does not inform any of the departments of material involved. If necessary, will notify PSS of material involved.

II. Other Responsibilities

- A. Does not perform as the PSS's delegate. Acts as technical advisor for PSS or incident commander.
- B. Collects information and evaluates situation from environmental standpoint only. If the fire department has responded to the incident, the incident commander evaluates the situation and makes containment and clean-up operation recommendations. For incidents that do not require fire department response, the SRC may make containment and clean-up recommendations.
- C. Informs the Environmental Coordinator of details of the incident.
- D. Records incident-related information such as date, time, spill source, location, description, cause, and containment and clean-up measures.
- E. Advises clean-up crew of operations or methods the fire department is using to contain and control spill. If the situation does not require response from the fire department, SRC may make recommendations to clean-up personnel for clean-up measures.
- F. Maintains spill records.

7.2.2.4 Plant Emergency Squad

I. Notification Responsibilities

- A. Same as for on-site spills. (See Section 7.2.1.) Refer to Appendix D of Emergency Procedure 40-008.

II. Other Responsibilities

- A. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.5 Environmental Management Department

I. Clean Water and Hazardous Waste Sections

- A. Same as for on-site spills. (See Section 7.2.1.)

II. Environmental Surveillance

A. Notification Responsibilities

1. Not Applicable.

B. Other Responsibilities

1. Reports, if requested, to the incident command post with personal protective equipment and sampling equipment.
2. Samples to verify hazardous material identification.
3. Samples to determine boundaries of contaminated areas and contaminant concentrations.
4. Samples after clean-up activities to verify proper cleanup.
5. Submits samples to the Plant Laboratory Department for analysis.

7.2.2.6 Environmental Coordinator/State, Local, and National Authorities (including DOE and EPA)

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.7 Y-12 Fire Department

I. Notification Responsibilities

- A. Not Applicable.

II. Other Responsibilities

- A. Responds as an integrated part of the Plant Emergency Squad.**
- B. Provides emergency response vehicle with spill response supplies.**
- C. Provides any necessary services and equipment (e.g., extra self-contained breathing apparatus, acid suits, pumper unit for emergency wash water).**
- D. Maintains one ambulance and crew at scene during all corrective and clean-up activities to provide emergency first aid and transportation to Health Center, if necessary.**

7.2.2.8 Security Patrol Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Maintains crowd control to keep nonessential and unauthorized personnel away from emergency area boundaries as established by the PSS.**
- B. Maintains traffic control as requested by PSS. Includes setting up roadblocks in conjunction with local police departments and highway patrol to detour traffic around emergency area.**

7.2.2.9 Health Physics Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Reports, if requested, to the incident command post with personal protective equipment and monitoring equipment.**
- B. Performs necessary site and personnel monitoring and advises the PSS of the radiological concerns.**
- C. Advises the PSS of the proper personal protective equipment that must be worn as a result of radioactive contaminants.**

- D. Informs, as necessary, the Personnel Monitoring Section (same department) and the Criticality Safety Department of the details of the incident.
- E. Samples after clean-up activities to verify proper cleanup of radioactive contaminants.

7.2.2.10 Criticality Safety Department

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.11 Industrial Hygiene Department

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.12 Industrial Safety Department

- I. Notification Responsibilities
 - A. Not Applicable.
- II. Other Responsibilities
 - A. Reports, if requested, to the incident command post with personal protective equipment.
 - B. Advises the PSS of the proper personal protective equipment that must be worn in addition to the equipment required by the Radiation Safety and Industrial Hygiene Departments.
 - C. Observes emergency response and clean-up activities and identifies potential safety problems.
 - D. Advises the PSS on safe procedures and equipment.

7.2.2.13 Materials Department--Traffic/Transportation Management

- I. Notification Responsibilities
 - A. Not Applicable.

II. Other Responsibilities

- A. Provides the U.S. DOT shipping name for the cargo contained in the tank trailer as specified in 49 CFR 172.101.**
- B. Advises the Environmental Coordinator of the hazardous substances regulatory reporting requirements to the National Response Center at (800) 424-8802 or (202) 426-2675.**
- C. Completes the U.S. DOT Form F5800.1 in accordance with 49 CFR 171.16 and Tennessee Hazardous Waste Management Rule 1200-1-11-.04(4) and submits the completed form through the Environmental Coordinator and Y-12 Plant management to DOE within 10 days of the incident, if required.**

7.2.2.14 Waste Management Department

I. Notification Responsibilities

- A. Not Applicable.**

II. Other Responsibilities

- A. Instructs hazardous materials vehicle drivers to follow communication instructions for hazardous materials shipments as set forth in Appendix A and Appendix B of Emergency Procedure 40-007 to enhance the Y-12 Plant's capabilities to respond to emergencies involving the vehicles.**
- B. Trains vehicle drivers in proper emergency response actions as set forth in "Hazardous Materials Transport Vehicle Emergency Response Checklist," Appendix C of Emergency Procedure 40-008.**
- C. Maintains radios, copies of "Hazardous Material Transport Vehicle Emergency Response Checklist" (Appendix C of Emergency Procedure 40-008), drivers' personal protective equipment, and spill response equipment in each hazardous materials transport vehicle.**
- D. Maintains and, if requested, provides a Spill Response Crew who will:**
 - 1. Report to the incident command post with personal protective equipment, pumps, hoses, and spill response supplies;**
 - 2. Assist the Plant Emergency Squad in stopping the discharge of hazardous material;**

3. Contain and collect spilled materials (e.g., builds dikes of sandbags and soil, spreads absorbent materials);
 4. Neutralize spilled materials, if necessary;
 5. Transfer materials into proper drums, tanks, tank trailers, and dump trucks; and
 6. Perform clean-up operations.
- E. Provides and/or transports any necessary equipment and equipment operators to the scene (e.g., empty tank trailers, bulldozers, backhoes, dump trucks).
 - F. Coordinates treatment and/or disposal of waste materials.
 - G. Decontaminates and prepares equipment for other emergencies.

7.2.2.15 Hazardous Material Generator

[Waste Treatment Operations Department for liquid waste shipments to K-25 Site; Lithium Chemistry Department for sodium hypochlorite shipments to Knoxville; and Waste Management Department for waste photographic solution (generated by Product Certification Division) shipments to ORNL.]

- I. Notification Responsibilities
 - A. Not Applicable.
- II. Other Responsibilities
 - A. Installs labels on all Y-12 Plant tank trucks used on public roads that state "IN THE CASE OF EMERGENCY CALL COLLECT (615) 574-7172." (Not applicable for drums.)
 - B. Reports to the incident command post with protective equipment or reports to the PSS Office to provide information about the material, as requested.
 - C. Provides any necessary advice and assistance in material handling, transfer, and incident treatment.
 - D. Initiates internal requests for disposal and/or treatment of liquid and solid wastes generated during the incident.

- E. Provides appropriate empty tank trailers or containers for any necessary liquid collection and transfer.

7.2.2.16 Maintenance Divisions

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.17 Plant Manager

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.18 Photography Department

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.19 Plant Laboratory Department

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.20 Fire Protection Engineering Department

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.21 Public Relations Department

- I. Notification Responsibilities
 - A. Serves as the company voice to the news media.
- II. Other Responsibilities
 - A. Reports to the incident command post.
 - B. Obtains information about incidents and develops appropriate news releases.
 - C. Establishes area for news media and controls the news media.
 - D. Coordinates all news releases through DOE, Y-12 Plant management, and Environmental Coordinator.

- E. Provides periodic news updates, conducts any necessary press conferences, and conducts any news media tours.

7.2.2.22 Y-12 Health Center

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.23 Oak Ridge National Laboratory

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.24 K-25 Site

- I. Same as for on-site spills. (See Section 7.2.1.)

7.2.2.25 Law Department

- I. Notification Responsibilities
 - A. Not Applicable.
- II. Other Responsibilities
 - A. Provides legal assistance.

7.2.2.26 Transportation Safety Coordinator

- I. Notification Responsibilities
 - A. Not Applicable.
- II. Other Responsibilities
 - A. Oversees all transportation safety activities at the Y-12 Plant, including compliance with applicable transportation regulations.

7.2.2.27 Nuclear Materials Control and Accountability Department

- I. Notification Responsibilities
 - A. Not applicable.

II. Other Responsibilities

- A. Accounts for special nuclear materials and depleted uranium involved in a spill.

7.3 Notification of Hazardous Material Spills

7.3.1 Spill Notification Sequence

The individuals who are most likely to first recognize a hazardous material spill are transport vehicle drivers, individual spillers, and Y-12 Plant employees. Transport vehicle drivers will report off-site spills involving their vehicles. On-site spills are to be reported by the spiller or an employee who recognizes a spill. With on-site spills, the spiller and employee may or may not be the same person. For example, a spiller may be a contract employee performing on-site tasks for an Energy Systems/Y-12 contractor. Contractors and company employees are both informed of the proper procedures for spill notification.

WHEN ANY PERSONNEL OBSERVES A SPILL, THEY MUST FIRST AND IMMEDIATELY NOTIFY THE ON-DUTY PSS [(615) 574-7172] OF THE OBSERVED SPILL. (See Sections 7.2.1 and 7.2.2 for other responsibilities of employees and vehicle drivers for spill response.) ALL SPILLS REQUIRE NOTIFICATION! DO NOT PERSONALLY ASSESS THE SIGNIFICANCE OF A SPILL.

THE FOLLOWING INFORMATION MUST BE PROVIDED TO THE PSS:

ON-SITE SPILLS

1. Employee/Spiller Name
2. Location of the spill
3. Name and amount of material spilled
4. Account of on-scene injuries
5. Assessment of whether or not the spilled material has entered a storm sewer or waterway.

OFF-SITE SPILLS

1. Radio identification number, driver's name, and vehicle identification number

2. Location of the emergency (highway name or number, distance from intersection, reference landmarks, etc.)
3. Type of Emergency (injury, vehicle accident, fire, hazardous material spill, etc.)

NEXT, REPORT THE SPILL TO YOUR SUPERVISOR OR THE SUPERVISOR IN THE SPILL AREA (ON-SITE).

When the PSS receives notification of a hazardous material spill, he/she immediately assumes the designated role of Plant Emergency Director. At this moment, the PSS becomes the central management-level authority charged with leading the overall spill response effort.

Armed with key information from the spill observer, the PSS notifies the SRC of the incident. Based on the available information, the SRC provides initial spill response and control advice to the PSS. The PSS may then act on this information by making initial notifications and requests for assistance to other individuals and organizations inside the Y-12 Plant. Upon notification by the PSS, the SRC immediately makes a field assessment of the spill and further advises the PSS of the exact nature of the spill, the level of effort necessary for effective response, and the specific Y-12 Plant personnel/organizations and, if needed, outside entities that should be notified and asked to respond.

In familiar situations, the PSS may choose to bypass SRC advisement and make immediate, direct requests for assistance. The PSS also may delegate this and other responsibilities to the SRC or other responsible, properly trained individuals.

In the case of a reportable incident, the PSS will notify DOE of the situation. Figure 7.1 presents the notification process as prescribed by Energy Systems Standard ESS-OP-301. Figure 7.2 shows the decision process associated with the notification process from the time the occurrence is reported through closeout. A Y-12 Environmental Incident Report, prepared for the PSS, includes the date, time, and location of the spill; the identity and quantity of material spilled; a summary of the event; actions taken; impact assessment; and reportability of the event. The office of the PSS uses this information to complete the ORS Report Form. Key Y-12 Plant and DOE personnel are informed about all spills, reportable or not, through the Electronic Mail network. If additional response assistance from the state, regional, and/or Federal level is required, DOE may notify and request assistance from the Tennessee Emergency Management Agency (TEMA), the Tennessee Department of Environment and Conservation (TDEC), the U.S. Environmental Protection Agency Regional Response Center (Region IV, Atlanta), and the National Response Center of the U.S. Environmental Protection Agency based upon direction from the Y-12 Environmental Coordinator. The procedures for requesting response assistance in disaster situations or when an environmental incident exceeds the response capabilities of Y-12 Plant personnel and local authorities are set forth in Y-12 Emergency Procedure 40-010 and DOE Order 5500.2a.

APPENDIX B NOTIFICATION PROCESS DIAGRAM

FIGURE 7.1

APPENDIX A ORS FUNCTIONAL FLOW DIAGRAM

FIGURE 7.2

At the discretion of the PSS, numerous individuals, Y-12 Plant organizations, and public authorities, or an appropriate combination of them, may be notified and/or asked to respond to an on-site or off-site hazardous material spill. These entities are listed in Sections 7.2.1 and 7.2.2 of this plan.

7.3.2 Names, Addresses, and Telephone Numbers of Responsible Personnel, Organizations, Agencies, and Authorities

The most recent edition of the *Y-12 Emergency Directory* lists the names, home addresses, and work/home telephone numbers for key individuals and division/department executives that may be notified or requested to respond during an emergency such as a hazardous material spill. It also delineates emergency lines of succession for each of the listed organizational entities. With this critical information, it stands as the Y-12 Plant's primary, policy-designated reference source for making appropriate contacts during an emergency.

The entities in the directory are not precisely correlated with the responsible personnel and organizations listed in Sections 7.2.1 and 7.2.2 of this document and Emergency Procedures 40-007 and 40-008. Because the PSS and SRC are primarily responsible for notifications and assistance requests during an environmental incident, they are aware of the proper correlations and can use them to respond effectively.

Several agencies, authorities, and organizations outside of the Y-12 Plant may be called upon for assistance by the PSS and the SRC in responding to a hazardous material spill. These are listed on Table 7.2.

7.3.3 Communications During Spill Response

Spill response procedures at the Y-12 Plant are supported by reliable communications systems that allow for timely notification of spills and rapid, effective exchanges of information between responsible entities. Emergency Procedure 40-001, "Reporting an Emergency," covers how to report an emergency.

Emergency actions, including emergency communications and the response activities of Y-12 Plant personnel organizations, are coordinated by the Y-12 Plant's Emergency Operations Center, which is normally located in the PSS's office (Building 9706-2). If circumstances should require evacuation of this office, the center will be established in Building 9709.

Five methods of communication are available during spill responses: telephone, mobile beeper, hand-held radio/cellular telephone, Gamewell Box, and emergency buzzer/bell. As the new NPDES monitoring stations are installed, yet another alarm system will immediately alert the PSS to possible spills. The redundancy provided by these communications systems ensures flexible information exchange and ensures against critical communication breakdowns during emergencies.

The Y-12 Plant's telephone system is the primary means of exchanging information during a spill response effort. An employee who observes a spill is most likely to notify the PSS by telephone. Initial efforts to notify other key personnel in the various Y-12 Plant organizations who may be required to respond to a spill are

**TABLE 7.2 OUTSIDE ORGANIZATIONS, AGENCIES, AND AUTHORITIES
AVAILABLE FOR SPILL RESPONSE**

Organization/Agency/Authority	Address	Telephone
ORNL Fire Department	Oak Ridge National Laboratory P. O. Box 2008 Building 2500, MS 6307 Oak Ridge, Tennessee 37831-6307	574-5678
K-25 Site	K-25 Site P. O. Box 2003 Oak Ridge, Tennessee 37831-7350	574-3382 (PSS)
Oak Ridge Fire Department	P. O. Box 1 Oak Ridge, Tennessee 37831	911
Oak Ridge Police Department	P. O. Box 1 Oak Ridge, Tennessee 37831	911
Anderson County Sheriff Department	Courthouse 100 N. Main Street Clinton, Tennessee 37716	457-2414
Knox County Sheriff Department	400 Main Avenue Knoxville, Tennessee 37902	521-2432
Tennessee Emergency Management Agency	3041 Sidco Drive Nashville, Tennessee 37204	(800) 262-3300
Tennessee Department of Environment and Conservation	701 Broadway 4th Floor, Customs House Nashville, Tennessee 37247-3530	(1) 741-3111
U.S. Environmental Protection Agency Regional (Region IV) Response Center	345 Courtland Street N.E. Atlanta, Georgia 30365	(404) 347-4062
National Response Center of the U.S. Environmental Protection Agency	2100 Second Street S.W. RM 2611 Washington, D.C. 20593	(800) 424-8802
U.S. Department of Energy/Oak Ridge Emergency Operations Center (EOC)	P. O. Box 2001 Oak Ridge, Tennessee 37831-8555	576-1005
Chemical Manufacturers Association, Chemical Transportation Emergency Center (CHEMTREC)	2501 M Street N.W. Washington, D.C.	(800) 424-9300 Emergencies only
Association of American Railroads, Hazardous Material Systems (BOE)	50 F Street N.W. Washington, D.C. 20001	(202) 639-2222 (24 hours)

also likely to be made by telephone. The telephone also serves as a direct link between the Y-12 Plant and outside organizations, agencies, and authorities that may be requested to assist with a spill.

As an adjunct to telephone communications, key personnel such as the SRC are equipped with personal pagers. These devices prompt the possessor to establish immediate contact with a given location.

Emergency field communications may be transmitted by handheld radio or cellular phone. These devices allow rapid communication where wired telephones are not available. The PSS maintains a current master list of personnel/organizations linked by radio and cellular phone. This list also contains radio call letters, radio frequencies, and cellular phone numbers.

More than 250 Gamewell Boxes are located throughout the Y-12 Plant. These boxes serve essentially the same function as emergency fire alarms in public buildings. On the rare occasion when a telephone might not be available, pulling the bar in a given box alerts Y-12 Plant authorities to a spill situation or other emergency at that location.

Various portions of the Y-12 Plant are equipped with general broadcast buzzers or bells. During an emergency, these devices may be used to alert emergency response teams.

7.3.4 Plant Evacuation

7.3.4.1 Internal Plant Evacuations

The PSS directs the Y-12 Plant emergency response, including personnel reentry, if it becomes necessary to evacuate personnel in the spill release area or Plant-wide. Factors considered in the PSS's deliberations on whether or not to evacuate include any hazard to the health and safety of Y-12 Plant personnel; the location, type, and extent of the spill; whether or not the spilled material emits a hazardous vapor; and the local wind conditions.

If a decision is made to evacuate, the PSS will use the Plant-wide and local building(s) public address systems to announce the evacuation. If a severe fire has resulted, the PSS will activate the On-Off Fire Cycle System Immediate Evacuation alarm, which emits an intermittent high-pitched beeping sound.

Upon receiving notice to evacuate an area, any necessary crash, panic, or scram equipment shutdowns that do not delay evacuation should be performed. The employees should then proceed rapidly to the nearest designated assembly point by the most direct route.

7.3.4.2 Partial/Total Plant Evacuation

Specific evacuation signals, evacuation assembly points, and other details regarding Y-12 Plant evacuations are provided in Emergency Procedure 40-002, "Personnel Evacuation," and Emergency Procedure 40-006, "Partial/Total Plant Evacuation."

7.4 Critical Water Use Areas and Protection Priorities

The waters of EFPC and Bear Creek are not critical sources of drinking water, and they do not immediately and directly support any other typical human activities involving water. However, livestock and aquatic and terrestrial wildlife are supported by these streams.

Although safety of Y-12 Plant personnel is the first priority in the event of a spill, the primary focus of spill prevention, control, and mitigation measures at the Y-12 Plant is on preventing the discharge of any oil or hazardous materials to the two main streams that drain the site. To the extent that this is feasible, wildlife will be protected.

As was previously noted, the EFPC and Bear Creek drain into Poplar Creek, which empties into the Clinch River. In a worst case scenario, a massive discharge of hazardous materials might affect drinking water and riverine ecosystems at Kingston, Tennessee. However, the spill response plans outlined in this document and the backup secondary containment systems emplaced on the EFPC and Bear Creek are designed to control discharges long before they pose a threat to distant, downstream water uses.

7.5 Spill Response and Emergency Resources

7.5.1 Spill Response Equipment Inventory

Spill Response equipment and personal protective gear are stored at different locations in the Y-12 Plant. A representative inventory of this equipment, along with storage locations, is provided on Table 7.3. Available quantities and locations of emergency sandbags are listed on Table 7.4. Map 3, Appendix D, shows the emergency sandbag and spill response equipment locations on a map of the Y-12 Plant. Spill Response Equipment inspection forms are located in the The Y-12 Plant Guidance for Spill Response and Reporting.

These supplies are inventoried periodically, and replacement of disposable items is done as soon as practical after each use. All of these supplies are maintained in operating order.

Emergency personnel are trained in the proper use of new spill response equipment and protective gear prior to using it in real emergencies. Some equipment is accompanied by written instructions. As soon after use as is practical, nondisposable equipment and protective gear are cleaned. This returns the equipment to a readiness status and ensures against material incompatibility problems.

The equipment, material, and supplies in the current inventory are deemed adequate to deal effectively with any anticipated spills. Through mutual aid agreements with ORNL, K-25 Site, and the City of Oak Ridge, the Y-12 Plant has access to additional personnel and supplies.

TABLE 7.3 INVENTORY OF SPILL RESPONSE EQUIPMENT AT THE Y-12 PLANT*

New Salvage Yard Warehouse (9720-41)

1.	1 skid absorbent	27.	1 spool rope
2.	1 skid lime	28.	assorted culvert plugs
3.	10 bags Quikrete	29.	10 sand bags
4.	1 box absorbent socks	30.	3 skids 17C drums
5.	6 bags spill packs	31.	3 skids 17E drums
6.	1 boom	32.	1 skid overpack drums
7.	2 containers compound	33.	6 5-gallon buckets
8.	1/2 skid diapers	34.	1 acid pump
9.	3 drums of tools (shovels, picks, etc.)	35.	2 caustic pumps
10.	tool box (misc. hand tools)	36.	3 cool vests
11.	mop bucket	37.	3 safety vests
12.	wheelbarrow	38.	3 boxes tyvek suits
13.	3 fire hoses	39.	1 box acid suits
14.	1 air hose	40.	assorted gloves
15.	2 roll-about ladders	41.	assorted boots
16.	1 55-gallon wet vacuum	42.	1 box aprons
17.	assorted pumps	43.	1 box ear plugs
18.	assorted brooms	44.	4 hard hats
19.	1 saw	45.	1 case 409
20.	2 weed eaters	46.	1 case cleaner (Break-up, 155, etc.)
21.	4 boxes 6mm plastic	47.	2 plant lights
22.	1 box 20mm plastic	48.	"Steam Jeanies"
23.	2 boxes chain	49.	Jet-a-way
24.	3 bundles flagging	50.	Salamander
25.	1/2 mop heads	51.	Air compressor (portable)
26.	5 safety lights		

Respirators and cartridges are stored at the following locations:

Office
New Salvage Yard
Bailor I and II
Landfield II
9720-9 Warehouse
Vault
O.D. 8
O.D. 9
Old Salvage Yard

* All items are accessible when needed.

TABLE 7.4 Y-12 PLANT AREA EMERGENCY SANDBAG LOCATIONS/AMOUNTS*

Location	Amount
Bldg. 9201-4, N.W. Corner	25 Bags
Bldg. 9201-5, S.E. Corner	30 Bags
Bldg. 9201-5N, S.E. Corner	25 Bags
Bldg. 9201-5W, S.W. Corner	50 Bags
Bldg. 9202, N.W. Corner	30 Bags
Bldg. 9204-2, W. Side	150 Bags
Bldg. 9204-4, N.E. Corner	25 Bags
Bldg. 9204-4, S.W. Corner	30 Bags
Bldg. 9206, W. Side	50 Bags
Bldg. 9215, S.W. Corner	80 Bags
Bldg. 9215, M-Wing Basement, West	50 Bags
Bldg. 9401-2, N. Side	80 Bags
Bldg. 9720-25, Inside W. Roll-up Door	200 Bags

* Area sandbag locations are inspected periodically and supplies are replenished as soon as practicable after use.

7.5.2 Emergency Information Resources

Several services are available for assistance in handling a chemical release to the environment. These services provide critical information to emergency crews that handle hazardous materials.

CHEMTREC normally provides information concerning chemical transportation emergencies. The system covers approximately 3,600 substances that are frequently shipped by manufacturers. It also serves as a referral to the manufacturer's emergency information system.

The U.S. Coast Guard's Chemical Response Information System (CHRIS) consists of four manuals entitled *Condensed Guide to Chemical Hazards*, *Hazardous Chemical Data Manual*, *Hazard Assessment Handbook*, and *Response Methods Handbook*. These volumes are particularly useful in predicting air pollution and explosion problems at an accident scene.

Additional references are housed in Building 9116. These references are *Dangerous Properties of Industrial Materials*, *The Merck Index*, *1984 Emergency Response Guidebook (DOT)*, *Hawley's Condensed Chemical Dictionary*, and *Chemistry of Hazardous Materials*.

The Hazardous Substances Data Bank is maintained by ORNL for the National Library of Medicine (NLM). It is accessed by telephone through NLM's TOXNET data base.

MSDS can be an important source of information on hazardous materials during a spill response effort. An MSDS is a comprehensive synopsis of key information on a single hazardous material or a mixture of hazardous materials. A typical MSDS covers the following subjects: material identification; ingredients and hazards; physical data; fire and explosion data; reactivity data; health hazard information; spill, leak, and disposal procedures; special protection information; and special precautions and comments.

MSDS were first developed under Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910.1200) giving workers a right to know the names, characteristics, potential health effects, and proper safety/handling procedures for hazardous materials in the workplace. The Superfund Amendment and Reauthorization Act (SARA) of 1986 extended the role of the MSDS from worker right-to-know to community right-to-know when hazardous materials are being used by local industries. Another major role is their use as an information resource for hazardous materials for local, regional, and national emergency planning. Pursuant to Health and Safety Procedure 70-208, "Hazard Communications," MSDS are now on the Y-12 Plant VAX system. (Contact Bryan Fuhrer at 574-5638 for more information on the Y-12 Plant system.) Duplicate copies are available in the various work areas at the Y-12 Plant, and employees have rapid access to them.

At ORNL the MSDS data base is maintained on an IBM 3033 computer. This data base is approximately 70% complete with 5,300 MSDS on file. In addition to storing duplicates of the MSDS filed on-site at the Y-12 Plant, the system stores MSDS for hazardous materials not currently in use at the Y-12 Plant. Any Y-12 employee with a Time Sharing Operations (TSO) account may access the ORNL data base.

7.6 Spill Response Procedures

Notification of the PSS constitutes initiation of the Y-12 Plant's spill response procedures. Y-12 Plant personnel and organizations responding to on-site spills must follow Emergency Procedure 40-007, "Reporting of and Responding to On-Site Hazardous Material Spills." Emergency Procedure 40-008, "Response to Off-Site Hazardous Material Spills," must be followed when responding to an off-site spill.

All of the Plant-wide emergency procedures are listed on Table 7.1. There are also site-specific spill response procedures. The Environmental Officers in each division where these apply have knowledge of their requirements.

Spill mitigation and control are performed only by employees who are trained in proper spill response procedures. In the event of a spill, all nonessential personnel must clear the spill area and remain safely out of the way. Given prevailing conditions, injured personnel are to be cared for to whatever extent is feasible and practical until medical aid arrives.

Throughout the Y-12 facility, individual departments and divisions may develop spill procedures for specific materials unique or common to their operations. For example, the Lithium Division has draft procedures for sodium hypochlorite solution, sodium hydroxide solution, and hydrochloric acid, and a published procedure for lithium machine dust processing (Y50-18-51-005, 4/13/92). These procedures are designed to supplement the SPCC, emphasizing the emergency actions and the safety equipment required for each of these materials.

7.7 Environmental Incident Reporting

It is company policy to ensure that vigilance is exercised over all company activities; that every reasonable precaution is taken to protect employees, property, and company interest; that management evaluates and correctly judges the significance of environmental incidents; that all incidents are promptly investigated and reported; and that management takes responsive action to implement any requirements.

7.7.1 Environmental Incident Reports

An Environmental Incident Report form is prepared and forwarded to the PSS when reporting or providing follow-up information concerning an occurrence (Figure 7.3). The information from this form is then used by the office of the PSS to prepare the ORS report form. The Environmental Incident Report form is for internal use only at the Y-12 Plant.

7.7.2 Occurrence Reporting System

Energy Systems Standard ESS-OP-301, "Occurrence Reporting System" supersedes Policy GP-13. It states that emergency, unusual, and off-normal occurrences (including problems, concerns, and adverse events or conditions) shall be promptly reported to the DOE and to other appropriate organizations, both external and internal. DOE is responsible for notifying EPA and the state of the incident.

**FIGURE 7.3 ENVIRONMENTAL INCIDENT REPORT
(INTERNAL USE ONLY)**

(Attach supplemental sheets if additional space is needed.)

1. Incident:
2. Date and time incident occurred:
3. Time incident was discovered:
4. Time incident was reported:
5. Duration of spill:
6. Weather conditions during spill and cleanup:
7. Location of incident:
8. Name(s) and amount(s) of material(s) spilled (include any available laboratory analysis):
9. Where did spilled material go:
10. Division:
 - a. Department:
 - b. Supervisor(s):
 - c. Telephone:
11. Describe the Incident:

FIGURE 7.3. (continued)

12. Describe the cause of the incident:
13. Describe the environmental problems as a result of the incident:
14. Describe the containment and clean-up countermeasures performed:
15. Describe proposed corrective actions to prevent reoccurrence of incident (revision of operating procedures and/or equipment):
16. Comments:

17. Who was notified:

The Generator/Spiller is responsible for having the waste from the cleanup promptly disposed of.

18. Prepared by: _____
Signature

Type Name: _____

Date: _____

Reporting shall be done in a logical, timely, and systematic manner with occurrences subsequently analyzed and corrected to prevent escalation or recurrence.

Energy Systems Standard ESS-OP-301 requires systematic identification, categorization, and reporting of occurrences. An ORS Occurrence Report shall be initiated as any occurrence is reported. The employee reporting the occurrence is encouraged to initiate the form by completing Items 1-18. Supervisors/Line Management are responsible for transmitting the completed ORS Report (Items 1-30) for Category I, II, and III occurrences within 10 days of receipt to DOE through the Facility Manager. Figure 7.4 is an ORS Report Form. Instructions for filling out the form are found in ESS-OP-301, Appendix G.

Guidance for categorization is given in Appendix I of ESS-OP-301. Categorization of occurrences shall be made as soon as practical and should be made within two hours of identification. If categorization is not clear, then the occurrence shall initially be categorized at the highest level being considered. Occurrence categories I through IV are defined in ESS-OP-301.

The following matrix depicts when each category of occurrences must be categorized and reported. More in-depth information on the notification process can be found in Figure 7.1 and Figure 7.2.

OCCURRENCE CATEGORIZATION AND REPORTING TIME FRAMES

Category	Maximum time from identification to categorization	Maximum time from categorization to initial notification		Maximum time from categorization to submittal of ORS 10-day Report ³ into ORPS and Energy Systems data base	Final ORS Report into ORPS and Energy Systems data base
		Verbal	ORS Notification Report ¹ and entry into ORPS ² and the Energy Systems data base		
I Emergency Occurrence	ASAP, but within 2 hours	15 minutes	ASAP, but within 24 hours	10 working days for initial submittal with updates as new information is available	Within 45 calendar days of categorization, a final report should be issued when the root cause and Lessons Learned have been identified and corrective actions scheduled; Final Report must be approved by the facility manager or designee
II Unusual Occurrence	ASAP, but within 2 hours	As soon as information is available, but within 2 hours	24 hours ⁴	10 working days for initial submittal with updates as new information is available	
III Off-Normal Occurrence	ASAP, but within 2 hours	N/A	24 hours	10 working days for initial submittal with updates as new information is available	
IV Nonroutine Occurrence	2 hours	N/A	2 weeks (internal reporting only and entered into Energy Systems data base)	N/A	Final report to be issued internally after corrective action for those Category IV occurrences that require corrective action; enter report into Energy Systems data base

¹ORS Notification Report consists of items 1 through 18 of the ORS Report.

²ORPS = Occurrence Reporting Processing System

³Updates to ORS Reports may be entered into ORPS as many times as necessary to transmit important new information. Each time an update is entered into ORPS, the previous data are deleted.

⁴Items 1 through 18 are required to be transmitted to the DOE Emergency Operations Center (both the Field Office and Headquarters) as soon as possible after verbal notification to verify the voice communications and shall be followed by an official notification report being entered into ORPS within 24 hours. In some cases, it may be desirable to FAX the report to the designated recipients before initiating the voice bridge.

⁵The Final Occurrence Report should be issued with 45 calendar days; otherwise the submittal date for the Final Report should be specified in the updated Occurrence Report.

APPENDIX E
OCCURRENCE REPORT

NAME OF FACILITY: _____

FACILITY FUNCTION INVOLVED - (check only one)

☐ Plutonium Processing/Handling	☐ Tritium Activities
☐ SNM Storage	☐ Fusion Activities
☐ Explosive	☐ Remediation Activities
☐ Uranium Enrichment	☐ Category "A" Reactors
☐ Uranium Conversion/Processing/Handling	☐ Category "B" Reactors
☐ Irradiated Fissile Material Storage	☐ Solar Activities
☐ Reprocessing	☐ Fossil and Petroleum Reserves
☐ Nuclear Waste Operations/Disposal	☐ Balance-of-Plant

NAME OF LABORATORY, SITE, OR ORGANIZATION: _____

FACILITY MANAGER/DESIGNEE:

Name: _____

Title: _____

Telephone No.: _____

ORIGINATOR:

Name: _____

Title: _____

Telephone No.: _____

APPENDIX E (cont.)

1. OCCURRENCE REPORT NUMBER:

Source I.D. Number	_____
ORPS Occ. Number	_____

2. REPORT TYPE AND DATE:

Date

Time

- ☐ Notification Report
☐ 10-Day Report
☐ Latest 10-Day Update
☐ Final Report

3. OCCURRENCE CATEGORY: (check only one)

- ☐ Emergency ☐ Unusual ☐ Off-Normal

☒ Non-Routine

4. DIVISION OR PROJECT:

5. DOE PROGRAM OFFICE: (check only one)

☐ CE	☐ EM	☐ RW	☐ AD
☐ ER	☐ DP	☐ EH	☐ EI
☐ FE	☐ NE	☐ NP	☐ RG

6. SYSTEM, BLDG., OR EQUIPMENT:

7. UCNI:

- Yes ☐
No ☐

8. PLANT AREA:

9. DATE AND TIME DISCOVERED:

10. DATE AND TIME CATEGORIZED:

11. DATE AND TIME OF DOE NOTIFICATION:

12. DATE AND TIME OF OTHER NOTIFICATIONS:

13. SUBJECT OR TITLE OF OCCURRENCE:

OPERATIONAL EMERGENCY RESPONSE LEVELS - Category I only			
<u>Hazardous Material</u>	<u>Safeguards and Security</u>	<u>Radiological Assistance</u>	<u>Nuclear Weapons Accidents or Significant Events</u>
☐ Alert	☐ Alert III	☐ Alert	☐ All responses by the
☐ Site Emergency	☐ Alert II	☐ Emergency	Accident Response Group
☐ General Emergency	☐ Alert I		

APPENDIX E (cont.)

14. NATURE OF OCCURRENCE: (check up to three)

Facility Condition

- ☐ Nuclear Safety
- ☐ Fires/Explosions
- ☐ Safety Status Degradation
- ☐ Radioactive Material Loss
- ☐ Vital System/Component Degradation
- ☐ Violation/Inadequate Procedures
- ☐ Unsatisfactory Surveillance/Inspections
- ☐ Costly Vital Structure/System/Component/Facility Deficiency
- ☐ Operational Occurrence
- ☐ Inadequate Experiment/Test Performance

Environmental

- ☐ Radionuclide Releases
- ☐ Hazardous Substances/Regulated Pollutants/Oil Releases
- ☐ Radioactive/Hazardous Material Contamination
- ☐ Ecological Resources
- ☐ Agreement/Compliance Activities

Personnel Safety

- ☐ Occupational Illness/Injuries
- ☐ Vehicular/Transportation Accident
- ☐ Miscellaneous

Personnel Radiation Protection

- ☐ Radiation Exposure
- ☐ Personnel Contamination
- ☐ Internal Uptake

Safeguards and Security

- ☐ Criminal Acts
- ☐ Classified Material Loss
- ☐ Substance Abuse
- ☐ General Security Concerns

☐ Transportation

☐ Value Basis Reporting

Facility Status

- ☐ Facility/Process Securing/Curtailing Operations
- ☐ Facility/Process Shutdown Extension
- ☐ New Facility/Process Startup Delay

Cross-Category Items

- ☐ Collectively Significant Related Occurrences
- ☐ Near-Miss Occurrences
- ☐ Weather Fronts/Systems Affecting Facility Status
- ☐ Potential Concerns/Issues
- ☐ Further Degradation/Increased Uncertainties

APPENDIX E (cont.)

15. DESCRIPTION OF OCCURRENCE:

OCCURRENCE CONDITION	
☐	Stable
☐	Improving
☐	Degraded
☐	Undetermined
☐	Near-Miss

16. OPERATING CONDITIONS OF FACILITY AT TIME OF OCCURRENCE:

METEOROLOGICAL DATA	
Wind Speed _____	Temperature _____
Wind Direction _____	Stability Class _____

17. ACTIVITY CATEGORY: (check only one)

☐ Construction	☐ Training
☐ Maintenance	☐ Transportation
☐ Normal Operations	☐ Emergency Response
☐ Startup	☐ Inspection/Monitoring
☐ Shutdown	☐ Facility Decontamination/
☐ Facility/System/Equipment	Decommissioning
Testing	

18. IMMEDIATE ACTIONS TAKEN AND RESULTS:

EOC ACTIVATION (Yes/No) Category (only)		PRESS RELEASE ANTICIPATED (Y/N)
PROTECTIVE ACTION RECOMMENDATIONS		
☐ Shelter Off-Site	☐ Evacuate Off-Site	
☐ Shelter On-Site	☐ Evacuate On-Site	

APPENDIX E (cont.)

19. **DIRECT CAUSE** (Check only one direct cause category and check one and only one subcategory within the selected direct cause category)

☐ **EQUIPMENT/MATERIAL PROBLEM**

- ☐ Defective or Failed Part
- ☐ Defective or Failed Material
- ☐ Defective Weld, Braze, or Soldered Joint
- ☐ Error by Manufacturer in Shipping or Marking
- ☐ Electrical or Instrument Noise
- ☐ Contamination

☐ **PROCEDURE PROBLEM**

- ☐ Defective or Inadequate Procedure
- ☐ Lack of Procedure

☐ **PERSONNEL ERROR**

- ☐ Inadequate Work Environment
- ☐ Inattention to Detail
- ☐ Violation of Requirement or Procedure
- ☐ Verbal Communication Problem
- ☐ Other Human Error

☐ **DESIGN PROBLEM**

- ☐ Inadequate Man-Machine Interface
- ☐ Inadequate or Defective Design
- ☐ Error in Equipment or Material Selection
- ☐ Drawing, Specification, or Data Errors

☐ **TRAINING DEFICIENCY**

- ☐ No Training Provided
- ☐ Insufficient Practice or Hands-On Experience
- ☐ Inadequate Content
- ☐ Insufficient Refresher Training
- ☐ Inadequate Presentation or Materials

☐ **MANAGEMENT PROBLEM**

- ☐ Inadequate Administrative Control
- ☐ Work Organization or Planning Deficiency
- ☐ Inadequate Supervision
- ☐ Improper Resource Allocation
- ☐ Policy Not Adequately Defined/Disseminated/Enforced
- ☐ Other Management Problem

☐ **EXTERNAL PHENOMENA**

- ☐ Weather or Ambient Condition
- ☐ Power Failure or Transient
- ☐ External Fire or Explosion
- ☐ Theft, Tampering, Sabotage, Vandalism

APPENDIX E (cont.)

20. CONTRIBUTING CAUSE (Check up to three contributing cause categories and check one and only one subcategory within each selected contributing cause category.)

☐ **EQUIPMENT/MATERIAL PROBLEM**

- ☐ Defective or Failed Part
- ☐ Defective or Failed Material
- ☐ Defective Weld, Braze, or Soldered Joint
- ☐ Error by Manufacturer in Shipping or Marking
- ☐ Electrical or Instrument Noise
- ☐ Contamination

☐ **PROCEDURE PROBLEM**

- ☐ Defective or Inadequate Procedure
- ☐ Lack of Procedure

☐ **PERSONNEL ERROR**

- ☐ Inadequate Work Environment
- ☐ Inattention to Detail
- ☐ Violation of Requirement or Procedure
- ☐ Verbal Communication Problem
- ☐ Other Human Error

☐ **DESIGN PROBLEM**

- ☐ Inadequate Man-Machine Interface
- ☐ Inadequate or Defective Design
- ☐ Error in Equipment or Material Selection
- ☐ Drawing, Specification, or Data Errors

☐ **TRAINING DEFICIENCY**

- ☐ No Training Provided
- ☐ Insufficient Practice or Hands-On Experience
- ☐ Inadequate Content
- ☐ Insufficient Refresher Training
- ☐ Inadequate Presentation or Materials

☐ **MANAGEMENT PROBLEM**

- ☐ Inadequate Administrative Control
- ☐ Work Organization or Planning Deficiency
- ☐ Inadequate Supervision
- ☐ Improper Resource Allocation
- ☐ Policy Not Adequately Defined/Disseminated/Enforced
- ☐ Other Management Problem

☐ **EXTERNAL PHENOMENA**

- ☐ Weather or Ambient Condition
- ☐ Power Failure or Transient
- ☐ External Fire or Explosion
- ☐ Theft, Tampering, Sabotage, Vandalism

APPENDIX E (cont.)

21. ROOT CAUSE (Check only one root cause category and check one and only one subcategory within the selected contributing cause category.)

☐ EQUIPMENT/MATERIAL PROBLEM

- ☐ Defective or Failed Part
- ☐ Defective or Failed Material
- ☐ Defective Weld, Braze, or Soldered Joint
- ☐ Error by Manufacturer in Shipping or Marking
- ☐ Electrical or Instrument Noise
- ☐ Contamination

☐ PROCEDURE PROBLEM

- ☐ Defective or Inadequate Procedure
- ☐ Lack of Procedure

☐ PERSONNEL ERROR

- ☐ Inadequate Work Environment
- ☐ Inattention to Detail
- ☐ Violation of Requirement or Procedure
- ☐ Verbal Communication Problem
- ☐ Other Human Error

☐ DESIGN PROBLEM

- ☐ Inadequate Man-Machine Interface
- ☐ Inadequate or Defective Design
- ☐ Error in Equipment or Material Selection
- ☐ Drawing, Specification, or Data Errors

☐ TRAINING DEFICIENCY

- ☐ No Training Provided
- ☐ Insufficient Practice or Hands-On Experience
- ☐ Inadequate Content
- ☐ Insufficient Refresher Training
- ☐ Inadequate Presentation or Materials

☐ MANAGEMENT PROBLEM

- ☐ Inadequate Administrative Control
- ☐ Work Organization or Planning Deficiency
- ☐ Inadequate Supervision
- ☐ Improper Resource Allocation
- ☐ Policy Not Adequately Defined/Disseminated/Enforced
- ☐ Other Management Problem

☐ EXTERNAL PHENOMENA

- ☐ Weather or Ambient Condition
- ☐ Power Failure or Transient
- ☐ External Fire or Explosion
- ☐ Theft, Tampering, Sabotage, Vandalism

APPENDIX E (cont.)

22. DESCRIPTION OF CAUSE:

23. EVALUATION: (By Facility Manager/Designee)

Cost Evaluation Code: ☒ X

24. IS FURTHER EVALUATION REQUIRED? Yes ☐ No ☐

IF YES, BEFORE FURTHER OPERATION? Yes ☐ No ☐

IF YES, BY WHOM? _____

BY WHEN? _____

25. CORRECTIVE ACTIONS:

Corrective
Action

Target
Completion Date

Actual
Completion Date

APPENDIX E (cont.)

26. IMPACT ON ENVIRONMENT, SAFETY, AND HEALTH:

27. PROGRAMMATIC IMPACT:

28. IMPACT UPON CODES AND STANDARDS:

29. FINAL EVALUATION AND LESSONS LEARNED:

30. SIMILAR OCCURRENCE REPORT NUMBERS:

APPENDIX E (cont.)

31. DOE FACILITY REPRESENTATIVE INPUT:

Entered by: _____ Date: _____

32. SIGNATURES:

FACILITY MANAGER/DESIGNEE

Signed by: _____ Date: _____

Typed Name: _____

DOE FACILITY REPRESENTATIVE/DESIGNEE

Signed by: _____ Date: _____

Typed Name: _____

DOE PROGRAM MANAGER/DESIGNEE

Signed by: _____ Date: _____

Typed Name: _____

8. FACILITY DRAINAGE

When storm water accumulates within diked areas, it must be removed to maintain the full secondary containment capacity of the dike. This chapter focuses on the drainage practices associated with diked facilities, undiked areas, wastewater treatment plants, and nonliquid material storage areas on the Y-12 Plant site.

8.1 Drainage of Diked Facilities

In most cases, drainage from diked storage areas is retained solely by the walls of the dikes. These diked areas are emptied with manually operated sump pumps.

Drainage from a very small number of dikes and curbed areas is retained by manual valves of open-and-close design or manual plugs fitted with rubber expansion collars. Flapper-type drain valves are not used to drain diked areas at the Y-12 Plant.

Liquid accumulations within diked areas are handled according to BMPs. (See *Y-12 Plant Best Management Practices (BMP) Plan* [Y/TS-135].) When a diked area is slated for draining, the owning division's Environmental Officer or Facility Operator arranges for sampling of its contents by the Environmental Management Department, which is also available to render BMP guidance and analyze the samples. The samples are analyzed for pH, conductivity, and, if suspected or specifically called for, the presence and concentrations of metals and priority pollutants. If the liquid is contaminated beyond established NPDES discharge limits for specific hazardous materials, it is not released and appropriate spill response, treatment, and clean-up procedures are implemented.

Liquids with no contaminants or contaminant concentrations below established NPDES limits are pumped to the adjacent ground surface, using BMPs such as controlled discharge to prevent erosion problems. Liquid accumulations behind dikes are not pumped or otherwise released directly into the EFPC or Bear Creek. BMPs are used to avoid large volumes of water being pumped at one time. The Environmental Management Department maintains records of sample analyses and requests that dikes and other standing water areas be emptied.

8.2 Drainage of Undiked Areas

Drainage from undiked areas (Plant effluents, storm water runoff, areas of standing water, etc.) eventually discharges to the on-site portion of the EFPC or into Bear Creek. The great majority of this drainage flows into the EFPC and then into the Lake Reality facility. Located in an area that is not subject to periodic flooding but is within the 100-year flood plain, this facility was designed to effectively capture oil and other hazardous materials spilled from in-plant facilities. Capabilities are discussed in Chapter 5.

Occasionally, standing water that is not retained by dikes or curbs may accumulate in various areas of the Plant. For example, water may accumulate in a pipeline trench as a by-product of repair activities or in a surface depression during heavy precipitation periods.

When these areas of standing water are identified, they are reported to the PSS and the Environmental Management Department (Compliance Section). Environmental Management then exercises the same guidance and assistance that it gives to the handling of dike drainage.

8.3 Waste Water Treatment Facilities

There are six permanent wastewater treatment facilities at the Y-12 Plant. These are the Steam Plant Waste Water Treatment Facility, which treats acid and caustic discharges from the Y-12 Coal Yard and steam plant operations; the Central Pollution Control Facility, which treats wastes other than nitrates; the West End Treatment Facility, which denitrifies waste nitrate solutions and then treats the denitrified water; the Plating Rinse Water Treatment Facility, which treats rinse water from the metal plating shop; the Waste Coolant Processing Facility, which treats cooling water from machining operations and sends it to the Central Pollution Control Facility for additional pretreatment before discharge; and the Groundwater Treatment Facility, which treats ground seeps from the Bear Creek Burial Grounds. Waste water entering these plants for treatment is transported among different treatment units by tank trucks and a combination of natural hydraulic flow and pumps, including lift pumps. These pumps are generally permanently installed.

The Steam Plant Waste Water Treatment Facility treats approximately 47 million gallons of acid and caustic discharges from the Y-12 Coal Yard and steam plant operations each year. This facility includes the following features: a collection basin for equalizing flow and settling coal fines, concrete-lined ditches for collecting coal pile runoff, a chemical addition system, a solid-liquid separation system, and a sludge dewatering system.

The West End Tank Farm processes many small batches to make up a 500,000-gallon bionitrification batch. When denitrified, the 500,000-gallon batch is sent through the West End Treatment Facility (WETF) effluent polishing system at a rate of 15 gallons per minute. Treated effluent from the West End Treatment Facility is discharged to the EFPC.

The Waste Coolant Processing Facility operates more continuously than WETF. Waste Coolant has about 30,000 gallons of storage capacity for waste feeds. The system processes these wastes at 100 gallons per minute. At the end of this period, treated water from the Waste Coolant Processing Facility is sent to the Central Pollution Control Facility for further treatment.

In addition to further treating water from the Waste Coolant Processing Facility, the Central Pollution Control Facility treats small batches, about 10,000 gallons per batch, of raw wastewater. The Plating Rinse Water Treatment Facility treats approximately 7,000 to 8,000 gallons of rinse water per batch. It takes much less constant operation time to process the small batches. Treated effluent from small batches is discharged two to three times every week. As a precaution against discharging harmful quantities of hazardous materials, the treated effluent from these and the other plants is tested in accordance with conditions of the Y-12 Plant NPDES requirements prior to discharge into the EFPC. The results of these tests are known several weeks later.

Because of recent reductions in production at the Y-12 Plant, most of the above-mentioned treatment facilities are treating smaller batches less frequently.

8.4 Controls to Prevent Runoff, Leaching, and Windblowing from Nonliquid Material Storage Areas

Six major nonliquid material storage areas, lay down areas, and solid waste accumulation areas at the Y-12 Plant are discussed in this section. Each area is an open facility with limited shelter. The materials kept there are consequently more subject to natural processes such as weathering, precipitation runoff, leaching, and windblowing than are those at interior facilities or "hardened" exterior facilities.

The materials kept in these areas include coal, urea granules, road salt, gravel, and scrap metal (some uranium-contaminated). Materials such as gravel, road salt, urea, and contaminated scrap would constitute a questionable discharge threat to the environment. Nonetheless, this plan discusses runoff, leaching, and windblowing control features at these areas, as well as those areas at which more hazardous materials are stored.

8.4.1 Urea Storage Area

This area, normally used for storing loose urea granules, is located on the west side of the switchback on the East Patrol Road. It lies immediately upslope of the EFPC.

The urea granules are stored in two side-by-side bins measuring 20 feet wide by 40 feet in length by 5 feet in height. Plywood was used to construct the three walls of each bin. The east ends of these bins are not enclosed to allow for easy access to the granules.

The granule stock in these bins is effectively contained by the walls. The walls are also sufficient to prevent wind dispersion of the granules under local wind conditions.

Run-on into this area is diverted via a ditch that parallels the East Patrol Road downslope and then swings off of the road to parallel the southern perimeter of the site. This ditch feeds a deep gully that parallels the area's western perimeter and directs drainage flow downslope to the EFPC. The north side of the Urea Storage Area is a continuous, steep, direct downslope to the EFPC.

Each storage bin is underlain by asphalt pavement and the contents are covered with plastic. This provides a measure of protection against leaching.

8.4.2 Salt Storage Area

The Salt Storage Area is used to store road salt and gravel. Its location is just east of the on-site access to the East Patrol Road and west of Building 9993.

This facility consists of a row of three plywood bins, each measuring 20 feet wide by 45 feet long by 6 feet in height. Road gravel is stored in the center bin, and road salt is contained in the two adjacent bins. All three bins sit on top of a lot paved with asphalt. This lot slopes to the north.

A plastic covering on each of the salt bins protects their contents from precipitation and windblowing, as do the bin walls. The asphalt pavement under these bins protects against leaching.

8.4.3 Coal Yard

This is a large, open area used to store coal for the steam plant. Its location is just west of Building 9401-3.

Runoff from the coal pile is controlled by a surrounding ditch. This concrete ditch is 12 to 18 inches deep and has a combination of vertical and in-sloped walls. The surrounding arms of this ditch feed into a rectangular settling basin located on the west side of the coal pile. The material in the settling basin is then pumped to the Steam Plant Waste Water Treatment Facility.

There are no controls to prevent windblowing, other than adjusting the shape of the coal pile. However, a clay lining under the Coal Yard is used to reduce leaching.

8.4.4 Lay Down Area No. 1

Lay Down Area No. 1 is a large, open area used to hold surface accumulations of solids, particularly used metallic items and equipment. This area may be subdivided into two piles, herein designated as Pile No. 1 and Pile No. 2.

Pile No. 1 is located southwest of Building 9114 in the north portion of Lay Down Area No. 1. It consists primarily of metal items such as stainless steel tanks/pipes, drums, and racks.

Pile No. 2 is located immediately south and slightly downslope of Pile No. 1. Uranium-contaminated metal items are kept in this pile.

There are no controls to prevent discharges caused by leaching and windblowing in Lay Down Area No. 1. However, precipitation runoff in this area flows to a drainage swale that parallels the southern edge of Pile No. 2 and a service road. This swale drains west into a culvert under the road.

The only other drainage feature in Lay Down Area No. 1 is a small depression located immediately north of Pile No. 1. This depression is lined with rock.

8.4.5 Lay Down Area No. 2

Lay Down Area No. 2 is a large, horseshoe-shaped area situated immediately across the service road from Lay Down Area No. 1 and due south of it. It is used to hold a large concentration of uncontaminated trash and debris.

No features designed to prevent discharges from leaching have been installed at this site. However, precipitation runoff from the horseshoe concentration drains into a central, riprapped depression. A ditch directs drainage to the northwest of this depression and into the other end of the drainage culvert fed by the swale in Lay Down Area No. 1.

9.0 BULK STORAGE TANKS

The predominant type of primary containment facility for hazardous materials at the Y-12 Plant is the bulk storage tank. These tanks are located inside and outside of buildings throughout the Y-12 Plant.

The indoor bulk storage tanks are usually, and perhaps more appropriately, industrial process tanks. As such, they are generally smaller than their outdoor counterparts, and they perform a specific, systemic function within the overall context of an industrial process. Spills from these tanks are generally fully contained on building floors and in basement sumps. Consequently, they would not normally present a threat of hazardous material discharge to a waterway.

Because they represent a comparatively greater potential for discharging their contents to a waterway, the coverage of this SPCC Plan relative to tanks is limited to outdoor bulk storage tanks. These tanks are permanently installed aboveground storage tanks, underground storage tanks, and portable polyethylene tanks (polytanks). Although they could be classified as small bulk storage tanks, drums and outdoor drum storage areas are treated as a separate primary containment facility category and are discussed in Chapter 12.

A very small number of permanently installed aboveground and underground storage tanks are code-stamped pressure vessels (<15 psig by the National Board of Boiler and Pressure Vessel Inspectors and ASME, Section 8). The rest of these tanks are vented atmospheric storage vessels. The portable polytanks are low-pressure (approximately 9 psig) vessels.

These tanks are used to contain a wide variety of hazardous materials including oil, oil-like substances, flammables/combustibles, bulk acids, bulk caustic substances, and hazardous wastes. Volume II lists bulk storage tanks and their specific contents.

This chapter primarily addresses the Y-12 Plant's compliance with regulations pertinent to bulk storage tanks as set forth in 40 CFR 112.7(e)(2) and 40 CFR 151.7(d)(i). It includes discussions of material compatibility, tank construction, storage conditions, secondary containment structures, drainage of diked areas, the Y-12 Plant's Underground Storage Tank Program, tank and dike inspections, internal heating coils, fail-safe engineering of tanks, observation of disposal facilities, correction of visible leaks, and portable bulk storage tanks. Some RCRA compliance information, especially with respect to underground storage tanks and tank inspections, is also provided.

9.1 Construction, Material Compatibility, and Storage Conditions of Tanks

Contractors operating facilities owned by DOE are required to follow national and insurance-promulgated codes and standards. The Y-12 Plant adheres to nationally recognized codes and standards for the design, construction, inspection, and testing of tanks. The Y-12 Plant also follows operating procedures that ensure the safe operation of bulk storage tanks.

Two codes and standards mandated by DOE and followed by the Y-12 Plant since its beginning are the American Society of Mechanical Engineers (ASME) Boiler

and Pressure Vessel Code and the National Fire Protection Association (NFPA) Flammable and Combustible Liquids Code [American National Standards Institute (ANSI)/NFPA 30]. Regulations promulgated by OSHA and adhered to by DOE mandate the use of the aforementioned codes and standards. EPA regulations, while not specifically referencing these codes and standards, contain verbatim quotes from them. In addition, certain EPA regulations, such as RCRA, give the Regional Administrator the authority to rely upon appropriate industrial design standards as well as other available information. The State of Tennessee has adopted and administers the federal EPA and OSHA regulations. Thus, DOE and the Y-12 Plant, as well as the other plants in Oak Ridge, are operated in accordance with regulations regarding tank and secondary containment construction and inspection, which provides assurance that the likelihood of releases to the environment is minimized.

Bulk storage tanks containing flammable and combustible liquids are usually atmospheric storage vessels designed to operate at atmospheric pressure through 0.5 psig. They are designed, constructed, and inspected in accordance with American Petroleum Institute (API) Standards as prescribed in OSHA and NFPA regulations and standards. In some instances, atmospheric tanks are designed, constructed, and inspected in accordance with the Code for Unfired Pressure Vessels, Section VIII of the ASME Boiler and Pressure Vessel Code.

Many of the bulk storage tanks at the Y-12 Plant contain bulk acids and caustic liquids. These tanks are designed, constructed, and inspected in accordance with the same applicable national codes and standards as the tanks holding flammable and combustible liquids. However, more of these tanks are likely to be pressure vessels.

In addition to nationally recognized codes and standards, the Y-12 Plant has its own design standards for hazardous material storage tanks. These standards are presented in document Y/TS 104, *Design Standards for Hazardous/Toxic Waste and Material Storage Tanks, Dikes, and Transfer Stations*. Implementation of these standards takes effect on the design and construction of current and future bulk storage tanks containing hazardous materials. All tanks that meet these standards will meet regulatory requirements for the prevention of an accidental spill or release.

Under the authority of the 1984 Hazardous and Solid Waste Amendments to RCRA, all underground storage tanks that contain regulated substances are subject to state and federal regulations. These regulations pose specific requirements on underground storage tank design, construction, installation, and operation. To ensure compliance with these regulations, all new underground storage tanks (USTs) that will contain regulated substances shall meet the standards for underground storage tanks in Y/TS-104. In addition, all plans shall be reviewed by the Y-12 Plant's Environmental Technology Department.

New metallic tanks must be cathodically protected, or corrosion protection must be deemed to be adequate by the implementing agency. In the latest revision of Y/TS-104, it will be stated that any portion of a UST that is used for the underground storage of petroleum or hazardous materials must be protected from corrosion by one of the following methods:

- The tank must be constructed of fiberglass-reinforced plastic (includes piping).

- The tank must be constructed of steel and be cathodically protected (includes piping).
- The tank must be constructed of steel and fiberglass-reinforced plastic composite.
- The tank must be adequately protected from corrosion as per guidelines of the implementing agency.
- All materials used in the tank and piping construction must be compatible with stored substances.

The standards set forth in Y/TS-104 are primarily applicable to projects in the design, construction, and final acceptance phases. This means that many of the older bulk storage tanks do not meet these regulation-based standards.

The permanently installed, aboveground bulk storage tanks at the Y-12 Plant are made of several different materials. The vast majority of these tanks are made of welded carbon steel. There are only a few stainless steel tanks, but there are several fiberglass tanks. Most of the fiberglass tanks are relatively new, and some have double wall construction.

The aboveground tanks are erected both horizontally and vertically. They are provided with auxiliary appurtenances such as venting, filling and drain piping, valves, and fittings. Some have heating coils and special pumping equipment mounted on the tank. Others may be provided with stairways, ladders, platforms, handrails, and electrical grounding connections. These tanks are supported on concrete and/or steel foundations and, in some instances, have external insulation.

An underground storage tank is a storage vessel and associated connective piping in which at least 10% of the total volume of the contained substance is beneath final ground elevation. These tanks are made of carbon steel, fiberglass, and concrete. Most of them are constructed of welded carbon steel. The concrete tanks are essentially vaults that function as underground sumps. Only two existing underground storage tanks are made of fiberglass.

Polytanks are portable, valved containers constructed of molded polyethylene plastic. Their plastic base is designed to allow for easy local transport by forklift.

The Y-12 Plant believes that the material and construction of its tanks should be compatible with the hazardous materials stored in them and the conditions of storage. For this reason, some tanks, such as those holding bulk acids and caustic liquids, are equipped with corrosion-resistant liners.

Plant policy precludes the uncontrolled mixing of incompatible wastes. Waste materials that, if mixed, would result in excessive heat or pressure generation, uncontrolled generation of toxic fumes, or fires or explosions are stored in separate containers. Storage containers are labeled, and operating personnel are trained to place materials in appropriate containers only.

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9.2 Secondary Containment Structures for Stationary Tanks

It is Y-12 Plant policy that all aboveground bulk storage tanks have impervious dikes or curbs for secondary containment. Consequently, the Y-12 Plant has developed detailed design and construction standards for diking such facilities. Adherence to these standards ensures that dike design and construction will comply with all prevailing regulations. These standards are published in Y/TS-104.

Current Y/TS-104 standards preclude the addition of filler material, such as gravel, to dikes. However, fire protection criteria for the Y-12 Plant require dikes surrounding transformers with combustible oils to be lined with crushed gravel to a minimum depth of 6 inches. In such instances, the desired containment capacities are achieved by accounting for the necessary presence of the gravel lining.

The Y/TS-104 standards apply primarily to projects in the design, construction, and final acceptance phases. Despite current policy, a number of older tanks still are not diked. (See Volume II.) However, the Y-12 Plant plans to supply these facilities with dikes that meet prevailing regulations and standards. Efforts are in progress to prioritize older facilities that need improvements. The *Executive Overview: Y-12 Plant Long-Range Environmental and Waste Management Plan (1987)* discusses planned General Plant Projects (GPPs) aimed at upgrading existing secondary containment structures and providing dikes for existing tanks that do not have them. In the meantime, any spills from these facilities would be handled by the Spill Response Crew through the Y-12 Plant's Contingency Plan.

9.3 Drainage of Diked Areas

Drainage of diked and undiked areas at the Y-12 Plant is discussed in Chapter 8, Sections 8.1 and 8.2.

9.4 Underground Storage Tank Program

Existing (installed prior to December 22, 1988) UST systems that are to remain in service at the Y-12 Plant must comply with UST performance requirements described in Chapter 1200-1-15, "Rules of the TDEC, Division of USTs." A total of eight petroleum UST systems are presently in service. Table 9.1 provides information pertinent to the individual tank systems. These systems may require upgrading depending on their status. Three specific requirements are to be considered when determining status:

1. Release Detection for Both the Tank and Piping - Release detection shall be performed in such a manner as to detect a release from any portion of the tank and connected underground piping that routinely contains petroleum. This requirement does not apply to a UST system (tank and piping) that stores fuel solely for emergency power generation. As a result, five UST systems are deferred; however, Energy Systems, in the interest of BMP, is installing release detection equipment on the tanks and piping.

Table 9.1
In-Service Y-12 USTs

Tank ID	Location	Construction Date	Contents/ Capacity (gals)	Piping System	Tank Construction	Piping Construction
2312-U ¹	9722-6	1986	Diesel/550	Suction	DWF	Steel
2313-U ¹	9722-5	1986	Diesel/550	Suction	DWF	Steel
2316-U ¹	9999-7	1988	Diesel/550	Suction	SWF	Steel
2320-U ¹	9999-5	1988	Diesel/550	Suction	SWF	Steel
2333-U ¹	9722-4	1988	Diesel/550	Suction	DWF	Steel
2334-U	K1140 TSD	1988	Gasoline/ 6,000	Pressurized	SWF	Fiberglass
2335-U	K1140 TSD	1988	Diesel/ 10,000	Pressurized	SWF	Fiberglass
2130-U	9204-4	1960	Gasoline/550	Suction	Steel	Steel

¹ Tank system is not regulated under 1200-1-15-.04 (release detection requirements) due to its emergency generator status; however, Energy Systems BMP is applicable.

DWF Dual-wall fiberglass with interstitial monitors.

SWF Single-wall fiberglass.

The following release detection methods are employed as applicable for UST systems:

- Monthly product inventory control and manual tank gauging is conducted on Tank 2130-U to monitor daily volume measurements, capability of equipment, inventory reconciliation records, and proper fuel dispensing, metering, and recording techniques.
 - Tank tightness testing is performed annually on the 2130-U tank and piping to evaluate the potential leak rate.
 - Automatic tank gauging and line leak detectors are installed on Tanks 2334-U and 2335-U.
 - Interstitial monitoring is conducted for the dual-well emergency generator tanks to detect a release through the inner wall in any portion of the tank that routinely contains petroleum.
2. Corrosion Protection for Both the Tank and Piping - Corrosion protection is a release prevention requirement that can be accomplished by the use of cathodic protection, corrosion-resistant coatings, and noncorrodible materials. All tanks scheduled to be upgraded at the Y-12 Plant meet corrosion protection requirements. The piping systems do not; however, the installation of appropriate corrosion protection or replacement with a noncorrodible material is scheduled.
3. Spill/Overfill Prevention Equipment - Spill/overfill prevention on Y-12 UST systems involves the incorporation of equipment that performs the following functions:
- A spill catchment device that will contain petroleum when the transfer hose is detached from the fill pipe.
 - An automatic shut-off device that will prevent the flow of petroleum into the tank when the tank is no more than 95 percent full.

The compliance schedule for upgrading individual tank systems to these requirements is mandated in the TDEC-UST regulations. If an existing UST system is not to be upgraded, then it is a candidate for removal and subsequent permanent closure. Closure must be completed by the installation deadline of December 22, 1998; however, Energy Systems has assumed a more aggressive, accelerated schedule. The status of the eight Y-12 UST systems is provided in Table 9.2.

Table 9.2
Status of In-Service USTs

Tank ID	Location	Install Tank Leak Detection	Install Piping Leak Detection	Spill/Overfill Prevention	Corrosion Protection Piping	Secondary Containment	Scheduled Completion
2312-U ¹	9722-6	CP	X	X	X	NA	12/93
2313-U ¹	9722-5	CP	X	X	X	NA	12/93
2316-U ¹	9999-7	X	X	X	X	NA	12/93
2320-U ¹	9999-5	X	X	X	X	NA	12/93
2333-U ¹	9722-4	CP	X	X	X	NA	12/93
2334-U	K1140 TSD	CP	CP	CP	CP	NA	NA
2335-U	K1140 TSD	CP	CP	CP	CP	NA	NA
2130-U	9204-4	*	*	*	*	NA	NA

CP Completed
X Denotes upgrade activity
NA Not Applicable

¹ Although an upgrade is scheduled, consideration is being given to replacement with an aboveground tank system.

* No upgrade effort scheduled; 2130-U to be permanently closed and replaced with an aboveground tank system.

9.5 Bulk Storage Tank Inspections

9.5.1 Aboveground Tanks and Dikes

All aboveground tanks that contain hazardous materials are subject to regular inspections. Division Line Managers are responsible for the maintenance, operation, and inspection of tanks under their control. However, the actual, formal inspections are conducted by personnel in the ET&I Department of the Product Certification Division, formerly Equipment and Facility Services Division (E&FSD).

Two types of formal inspections are normally conducted at these facilities. They are visual inspections and integrity testing.

Visual inspections of tanks are conducted on an annual basis. They involve close observation of a tank's interior and exterior surfaces, as well as the conditions of valves, pipes, and appurtenant devices.

Integrity testing of aboveground tanks consists of hydrostatic testing and shell thickness tests. Hydrostatic tests are done annually, and, at the inspector's discretion, a test may be a full or partial head test. An annual ultrasonic shell thickness test is performed at strategic locations on each tank. Testing the same areas of a tank shell year after year provides a consistent, chronological perspective on the integrity of the shell.

The inspection criteria used in formal tank inspections are detailed in MMES Y-12 Plant Procedure Y50-65-EI-012, "Equipment Testing and Inspection Operating; Inspection of Storage Tanks." These criteria are used to inspect all tanks. In addition to presenting inspection criteria, Inspection Procedure Y50-65-EI-012 covers the inspection tagging of tanks and shows examples of inspection tags, warning tags, and absolute hold-off tags.

Although portable polytanks are considered to be containers instead of tanks, the applicable criteria in this procedure are used for their inspection as well. Portable tanks holding hazardous waste in RCRA hazardous waste container accumulation areas are subject to additional daily and weekly inspections. (See Chapter 12, Section 12.6.)

Apart from formal inspections, operating personnel are encouraged to be alert to signs of deterioration, malfunctioning components, leaks, and accumulations of hazardous materials behind dikes. Deterioration and imminent malfunctions of components are reported to the Maintenance Division. If a hazardous material spill is observed, the Y-12 Plant's spill response procedures (Chapter 7) are initiated.

For inspection purposes, tank foundations and supports are considered to be part of dikes. As such, they are included as part of the dike inspection process.

MMES Y-12 Plant Procedure Y50-65-EI-013, "Equipment Testing and Inspection Operating; Inspection and Testing of Dikes," discusses the construction, testing, and inspection of dikes and assigns the responsibility for testing and inspection to the ET&I Department. However, it does not cover precise inspection criteria. These criteria are presented in *Containment Dikes for Hazardous Materials* (50-65-MI74, Addendum A, 4-12-83). Revision of this document is now under way. Copies of the revised document should be available during the coverage period of this plan.

Visual inspections of dikes are conducted annually, and hydrostatic testing of dikes is performed every three years. Any observed accumulation of hazardous material within a dike requires initiation of the Y-12 Plant's spill response procedures. Pre-release inspection of storm water from diked and undiked areas is discussed in Chapter 8.

Facility files, equipment tags, computer cards, and inspection report forms are used to record the results of aboveground tank and dike inspections. These items and inspection record retention practices are discussed in Chapter 14.

9.5.2 RCRA Hazardous Waste Accumulation Tanks

An accumulation tank is a tank used to hold RCRA hazardous waste for less than 90 days. In addition to the visual inspections and integrity testing normally performed on tanks, RCRA regulations specify the following requirements for accumulation tanks.

1. Daily inspections of discharge control equipment.
2. Daily collection and recording of data from pressure and temperature gauges.
3. Daily inspections of waste levels in uncovered tanks to ensure two feet of freeboard, unless a tank is equipped with a secondary containment structure.
4. Weekly checks for corrosion, leaks, spills, etc.
5. Inspection logs that contain daily and weekly inspection criteria must be kept.
6. Tanks must be marked with the words "Hazardous Waste."
7. Information verifying that accumulation times are less than 90 days must be kept in the operating record.

Within each division that owns hazardous waste facilities, daily and weekly inspections are normally conducted at the departmental level by the foreman in charge of areas where hazardous waste accumulation tanks are located. The inspection activities of these individuals are overseen by the division's Environmental Officer.

The inspection criteria for accumulation tanks are checked on daily and weekly logs. Each log must be prefaced by a "RCRA Accumulation Tank Inspection Log Cover Sheet." The "Daily Inspection Log," "Weekly Inspection Log," and cover sheet are discussed in Chapter 14. This chapter also describes record retention practices for the inspection logs.

9.5.3 Underground Storage Tanks

USTs at the Y-12 Plant are subject to pressure testing by the Petro-Tite method to supplement other continuous or monthly release detection methods. Active USTs are tested at intervals dictated by UST regulations. Testing of underground tanks containing combustible/flammable liquids is subject to NFPA 30. The results of UST tests and inspections are recorded in essentially the same manner as those for aboveground storage tanks.

This is presently being accomplished on Tank 2130-U. Section 9.4 describes the overall UST Program at the Y-12 Plant.

9.6 Internal Heating Coils

At least three bulk storage tanks at the Y-12 Plant are equipped with internal heating coils. These tanks, located at Building 9818, are owned by the Metal Preparation Division. The steam exhaust lines from these facilities do not feed into a skimmer or retention system. Instead, they discharge directly into the storm sewer system, which outfalls to the EFPC. The storm sewer system in this area is regularly monitored. When Plant systems are operating, the water in the storm sewer is sampled and tested for pH every 2 hours.

9.7 Fail-Safe Engineering of Tanks

The construction standards for new storage tanks in Y/TS-104 require fail-safe devices such as liquid level indicators, high level alarms, and feed pumps that cut off automatically when high-level alarms sound. Most of the outdoor bulk storage tanks at the Y-12 Plant predate these standards. Consequently, only a small percentage of these older tanks are equipped with fail-safe engineering features. The Y-12 Plant has more than 200 bulk storage tanks and Y-12 Plant recognizes the need to eventually upgrade them. An engineering project is under way to equip all product USTs with visual and audible alarms to alert fuel transfer operators when underground tanks are 90% full. Current liquid level sending devices are tested and maintained in accordance with manufacturer's recommendations.

9.8 Observation of Disposal Facilities

40 CFR 112.7(e)(2)(ix) states the following:

"Plant effluents which are discharged into navigable waters should have disposal facilities observed frequently enough to detect possible system upsets that could cause an oil spill event."

Y-12's waste water treatment facilities and other disposal facilities are regularly observed, inspected, monitored, and sampled to prevent pollutant discharges to the EFPC and major bodies of water downstream from it. Depending on the particular facilities involved and the precise nature of their coverage by prevailing regulations, these actions may occur on a monthly, weekly, or even daily basis.

9.9 Prompt Correction of Visible Leaks

When faulty tank components such as seams, gaskets, rivets, and bolts cause accumulations of hazardous materials behind dikes, they are repaired as quickly as circumstances at spill locations will allow. If a very small quantity of material is dripping or flowing from a tank, the Spill Response Crew may elect to deal with the material already spilled before plugging the leak. If outflow is more rapid and shows potential to exceed available secondary containment and spill control measures, the crew, which normally includes members of the Maintenance Division, will act immediately to shut off the flow of hazardous material. In some instances, limiting the volume of a spill may require rapid, controlled draining of a tank into other primary containment vessels.

Plans for the final repair of a leaking tank and/or its appurtenant features usually begins shortly after the spill response effort. Preparations for this final repair may include a complete draining of the tank, a complete interior cleaning, and physical entry.

9.10 Location and Diking of Portable Storage Tanks

Using the distinction between "portable" and "stationary," RCRA classifies polytanks as containers (DOT-E-8839) instead of tanks. However, polytanks are included under the rubric of bulk storage tanks in this document because 40 CFR 112.7(2)(xi) requires a discussion of locations and secondary containment for portable tanks at this point in the SPCC Plan.

To prevent spilled hazardous materials from reaching a navigable waterway, Y-12 Plant standards require the location of polytanks and other portable containers, such as drums, within diked areas. The Y-12 Plant's standards for diking polytanks and other containers are presented in document Y/TS-104.

Despite Y-12 Plant standards, some polytanks containing hazardous materials are still not diked or curbed. These facilities could be supplied with portable curbing. The Waste Management Department follows a strict policy of supplying its containers with at least some form of secondary containment, often this portable curbing. Other polytank owners place these containers over sump grates.

Polytanks are not located in areas subject to periodic flooding or washout. EFPC and Bear Creek are the major surface drainage arteries for the Y-12 Plant, and polytanks are not allowed along their banks.

10.0 FACILITY TRANSFER OPERATIONS, PUMPING, AND IN-PLANT PROCESSES

Regulations under the CWA [40 CFR 112.7(e)(3) and 40 CFR 151.7(d)(5) (proposed)] call for addressing spill prevention, control, and countermeasures as they relate to the transference of hazardous materials through pipelines and industrial processing equipment. Most of the industrial processing facilities at the Y-12 Plant, including process tanks and system pipelines, are housed inside of the Y-12 Plant's numerous buildings. Because of their interior locations and the high probability that indoor spills would be contained on floors without discharging to a waterway, these systems are not intensively addressed in this plan. As noted in the introduction to this volume, outdoor facilities are the primary focus of the revised SPCC plan. In this chapter, discussions will focus on exterior aboveground and underground pipeline transfer systems, the Z-oil system, and the brine systems.

10.1 Design and Installation Measures to Prevent Spills from Pipelines

All underground water pipelines at the Y-12 Plant are protected by a bituminous coating that meets AWA Standards. According to Y-12 Plant procedures, all new underground pipelines must be properly coated prior to installation. Some natural gas and steam lines are cathodically protected, and certain cooling tower pipelines are protectively wrapped. However, during the Y-12 Plant's 49-year history, a number of essentially unprotected pipelines may have been installed.

When pipelines are not in service or in standby service, the terminal connections at transfer points are normally capped or blank-flanged. Exceptions to this would include pipelines that do not transfer hazardous materials.

The Y-12 Plant follows conventional standards (Engineering Standards ES 4.5-2 and ES 4.5-3) in designing pipe supports. Universal applications of these standards would substantially reduce the risk of spills. However, some pipelines, especially the older ones, may not adhere to these standards.

Those pipes that are designed to span motor vehicle routes are generally high enough (approximately 16 feet) to not be endangered by a variety of vehicular traffic. Any pipes installed lower than the prescribed vehicular clearance height are equipped with warning signs.

Pipelines that are used to transfer hazardous materials are not generally equipped with secondary containment structures. Line spills are controlled by the Spill Response Crew when the Y-12 Plant's spill response procedures are implemented.

10.2 Pipeline Inspections

Health and Safety Procedure 70-428 provides for initial proof tests of new pipelines and requires that these and any subsequent tests be performed in accordance with Engineering Standard P-4.1 and ASME standards.

Most of the pipelines at the Y-12 Plant are not on a regular, formal inspection schedule. As noted, new or recently modified pipelines are subjected to integrity tests

upon installation. Subsequent requests for tests are usually made only when a leak is strongly suspected. Upon request, the ET&I Department can run a number of nondestructive tests. These include dye penetrant tests, X-rays, hydrostatic tests, halogen leak tests, spark tests, pneumatic tests, ultrasonic tests, and parametric thickness tests. The results of these tests are recorded on the Pipe Test Report form discussed in Chapter 14.

As noted elsewhere in this document, operating personnel are encouraged to be alert to spills and to report them to the PSS. However, these personnel do not usually conduct formal visual inspections of aboveground pipes.

10.3 Z-Oil System at the Y-12 Plant

One of the facilities at the Y-12 Plant consists of a series of cyclotrons that have electromagnets and transformers and are cooled by a circulating mineral oil based heat transfer system. The cyclotrons were constructed beginning in early 1943 and are currently used for research and isotope production by ORNL personnel. The mineral oil at the Y-12 Plant has been dubbed "Z-oil." The Z-oil heat exchange system was a complex series of pipes, manifolds, holding tanks, pumps, clean-up stations with filters, and heat exchangers with an inventory of less than 100,000 gallons. At some time in its over 49-year history, PCB-containing oils were inadvertently introduced into the Z-oil system. This was discovered by a testing program involving the system, which was completed in October 1979. The results of the program indicated that the Z-oil system was contaminated to an average of 100 ppm by weight of PCB.

The discovery of PCB contamination in the Z-oil system brought the system under the rule of 40 CFR 761.30(d) as published in May 31, 1979, *Federal Register*, "PCB Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions." According to the "Prohibitions," May 1, 1980, the Z-oil system would have to be drained of its contents and could be refilled with fluid containing less than 50 ppm PCB. The "Prohibitions" were probably written for the typical "Dowtherm" heat transfer systems associated with small package boilers.

The Z-oil system was drained to a tank in 1981. SunOhio decontaminated this Z-oil to less than 5 ppm PCB. A portion of the contaminated oil was sold, and the remainder was put back into the Z-oil system along with new mineral oil. Current PCB concentrations in the Z-oil system average from 12 to 16 ppm. Early buildings designed to accommodate vertical Z-oil holding tanks are equipped with collection sumps. In addition, the system was designed to be compatible with the Z-oil flowing through it.

During the past 49 years, much of the original Z-oil system has been dismantled. Pipe openings leading to still active portions of the system have been capped or blank-flanged.

The Z-oil system is not endangered by vehicular traffic. A large portion of the system is underground, and much of the aboveground piping does not cross roads. Any pipes crossing roads are high enough to avoid impact by passing vehicles.

The Y-12 Plant has recently taken several major steps to prevent spills from the system. Maintenance personnel regularly tighten the flanges on the system's

aboveground pipelines. Utilities personnel inspect the Z-oil system on a regular basis.

Spills from the Z-oil system are handled by the Spill Response Crew. One of the first priorities in a spill response situation at this facility is to shut down the system's pumps. This will decrease the outflow rate of Z-oil from a leak point, thus facilitating closure of the leak and a reduction in the amount of spilled material to be controlled and cleaned up.

During 1992, Z-oil equipment (such as tanks, sumps, pipes, etc.) along the EFPC was taken out of service and drained (with the exception of the facilities in the Building 9204-3 area). This consolidation project has greatly reduced the volume of Z-oil used at the Y-12 Plant and has greatly reduced the risk of Z-oil spills to the EFPC.

In October 1991, an action plan was developed and implemented to modify the Z-oil system. The plan contains steps to allow for the removal of the oil from the headers and holding tanks/collection sumps located along the EFPC and to retain a reliable cooling system for the equipment in Building 9204-3. Since the plan was implemented, utilities operations has removed and disposed of approximately 15,600 gallons from the headers and approximately 8,750 gallons from the holding tanks/collection sumps. These actions will continue until the Z-oil system, with the exception of Building 9204-3, is drained and scheduled for removal. It is estimated that the oil/water removal project will be completed in 1993.

10.4 Brine Systems

A 30 percent methanol brine solution is used as a secondary refrigerant in two chiller systems used at the Y-12 Plant. (An engineering study is almost complete to replace methanol with a less toxic substance.) Although major portions of these systems are in exterior locations, each system ties together a series of buildings.

The largest brine system is located on the west end of the Y-12 Plant and connects Buildings 9201-4, 9201-5, 9201-5N, 9204-4, the Fogbank Building, Building 9767-13 (West End Chiller Building), and Building 9720-16 (portion of system out-of-service). The overall system holds an estimated volume of 325,000 gallons of brine at 32°F.

The other brine system is located at the center of the Y-12 Plant. Often referred to as the "Beta 2 System," it contains an estimated brine volume of 60,000 to 90,000 gallons. The brine temperature in this system is 14°F. Building 9204-2, Building 9204-2E, Building 9998, and portions of Buildings 9212 and 9998 are tied together by this smaller brine system.

The brine systems at the Y-12 Plant are relatively old. As such, they were not originally designed and constructed to include special spill prevention features and secondary containment structures other than those reflecting conventional standards for their period. However, the iron pipe used in the system is compatible with the brine flowing through it, and a sump that would contain spilled brine is maintained at a strategic location adjacent to Building 9767-13.

The out-of-service brine system pipelines in Building 9720-16 have not been capped or blank-flanged. However, they have been valved off from the active system.

The brine systems have overhead pipelines that span and effectively clear on-site vehicular traffic routes. Durable steel and concrete pipe racks are used to protect these lines, which are clearly marked by numerous signs indicating that they are components of a brine system.

11. TRANSFER STATIONS (FACILITY TANK TRUCKS AND TANK CARS)

The terminology "Facility Tank Car and Tank Truck Loading/Unloading Racks" is taken from the CWA, 40 CFR 112.7(e)(4). Environmental compliance and engineering documents issued by the Y-12 Plant usually refer to these facilities as transfer stations. Tank trucks, railroad tank cars, vacuum loaders, and container loading/unloading stations fall under this classification. These facilities should not be confused with "Facility Transfer Operations" (Chapter 10), which involve the in-plant transport of hazardous materials through pipelines.

This plan covers outdoor transfer stations, which are located throughout the Y-12 Plant. Because the Y-12 Plant is currently reevaluating its formal designation of transfer stations in terms of RCRA regulations, an accurate, comprehensive list of transfer stations, along with a location map, is not provided in this iteration of the SPCC Plan.

The regulations under 40 CFR 112.7(e)(3) address tank trucks, railroad tank cars, and transfer stations as related units. For this reason, the *SPCC Hazardous Material Storage Data Base*, Volume II of this plan, presents and locates several transfer stations as a subset of two categories, "tankers" and "rail cars." These transfer stations are designated in the "Containment" column under these categories, and their locations are specified in the "Location" column.

This organizational scheme is necessary because there are more tank trucks and railroad tank cars parked at the Y-12 Plant than there are formal transfer stations. Although located away from the transfer stations, these vehicles are themselves potential spill sources when they are holding hazardous materials.

11.1 Transfer Stations and Department of Transportation Compliance

Most of the tank trucks at the Y-12 Plant are used to transport wastes. As such, they are primarily subject to on-site loading. Railroad tank cars' primary function is to carry raw materials and supplies into the Y-12 Plant. Consequently, they are most often involved in unloading operations. The procedures for loading and unloading tank trucks and railroad tank cars essentially meet the minimum requirements and regulations established by the U.S. Department of Transportation (DOT). The procedures for loading tank trucks are specified in the Y-12 Plant document, *Waste Treatment Operating Procedures*.

11.2 Construction Standards for Transfer Stations

In document Y/TS-104, *Design Standards for Hazardous/Toxic Waste and Material Storage Tanks, Dikes, and Transfer Stations*, the Y-12 Plant has issued standards for transfer stations in the design, construction, and final acceptance stages. These standards are aimed at ensuring the incorporation of spill prevention measures into the design and construction of new facilities. These standards are for stations involving tank trucks, railroad tank cars, and vacuum loaders. New transfer stations at the Y-12 Plant conform to these construction standards. In doing so, they are brought into compliance with prevailing environmental regulations for this kind

of facility. However, a number of the Y-12 Plant's older transfer stations do not conform to current construction standards. These stations include areas at which hazardous materials are transferred from buildings to tank trucks through overhead pipes from which flexible transfer hoses are suspended. Some of these facilities are equipped with secondary containment structures and some are not. Drainage from these transfer stations is usually not routed to a catchment basin or treatment facility. Sandbags for building storm drain barriers are stored at many of these facilities.

Transfer stations that do not conform to prevailing statutory requirements are subject to identification and future upgrading. Spill prevention measures for these facilities are generally administrative in nature. When spills occur, they are handled according to the spill response procedures set forth in the Contingency Plan (Chapter 7).

11.3 Temporary Transfer Locations

Sometimes hazardous materials must be transferred at locations other than formal transfer stations. For example, contaminated storm water from behind a dike may be pumped into a tank truck for transport to a treatment facility. Secondary containment in the form of portable curbing with an overdraped plastic lining is placed at these temporary transfer locations. The Waste Transportation, Storage, and Disposal Department does this whenever such transfers are necessary.

11.4 Warning Measures to Prevent Spills

The transfer stations for tank trucks are not equipped with interlocked warning lights, physical barriers, or warning signs to prevent premature departures while transfer lines are still connected. These measures are not used at the Y-12 Plant because the truck portions of rigs are completely removed from tank trailers before loading.

Warning devices are used at stations at which railroad tank cars are unloaded. Before unloading commences, the transfer area is flagged, and warning signs are erected.

11.5 Pre-Departure Inspections

The tank trucks at the Y-12 Plant are equipped with fail-safe-engineered emergency valves. Waste Treatment Operations and Traffic Section (Finance and Materials Division) personnel are responsible for checking these valves prior to loading and recording the results of the inspections. Different forms are used for tank trucks with on-site and off-site destinations (see discussion in Chapter 14).

When railroad tank cars are unloaded, the responsible foreman in the owning division inspects the car and placards it as "Unloaded." A record of this process is placed on a standard form entitled "Certification of Unloading Tank Cars." The foreman is required to sign off on this document when the inspection is completed (see discussion in Chapter 14).

12. CONTAINERS AND CONTAINER STORAGE AREAS

According to 40 CFR 260.10, a container is any "...portable device in which a material is stored, transported, treated, disposed of, or otherwise handled." Drums (including overpacks), cans, dumpsters, boxes, cylinders, and portable tanks are all classified as containers. Although portable tanks are technically containers, this plan addresses them under Bulk Storage Tanks (Chapter 9) because they are treated as tanks in Y-12 Plant conversation and because they are inspected according to tank criteria by ET&I.

At the Y-12 Plant, containers are used to store a variety of liquid and solid raw materials and hazardous wastes. Materials received include, but are not limited to, diesel fuel, gasoline, kerosene, methanol, diesel oil, coal, etc. A complete listing of supplies received for storage is located at the SRC's office. This listing also provides the type of materials, quantities, and location of storage. Hazardous wastes are temporarily accumulated on site and stored on site in appropriate containers. RCRA regulations require the adoption of measures to prevent and control hazardous waste spills from containers. Adherence to these regulations is addressed in the Y-12 Plant's RCRA compliance documentation. Pursuant to the CWA, 40 CFR 112.7 calls for discussions of measures taken to prevent and control spills of oil and other hazardous materials from facilities such as container storage areas. The procedure for the storage of chemicals and petroleum based materials is included as Appendix A of this document.

The facility inspections performed in support of this plan focused on outdoor containers and container storage facilities. The locations of many of these facilities, their specific contents, and other detailed information are provided in Volume II.

12.1 Drums and Overpacks

Although steel drums are manufactured in different sizes with proportionately variable capacities, most of the drums used at the Y-12 Plant have a 55-gallon capacity. However, some 15-gallon drums, 30-gallon drums, and 80-gallon overpack drums are used. When hazardous materials that are incompatible with conventional steel drums must be stored, stainless steel drums or appropriately lined drums are used.

In the context of this plan, a drum storage area is any outdoor space at which full or partially full drums are stored. These areas are located throughout the Y-12 Plant. Because there is a variable inflow of drum-packaged raw materials into these areas and a somewhat variable outflow of drum-packaged hazardous waste, the total volume of hazardous material in these areas (i.e. number of drums present) will also vary, sometimes on a daily basis. The volumes for drum storage areas listed in the *SPCC Hazardous Material Storage Data Base* (Volume II) are the maximum drum capacities observed to be present during a single engineering inspection visit to each area. This maximum capacity is based on each of the drums being full; this usually results in an overestimated volume.

There are several effective methods for preventing spills from drums and in drum storage areas. The most basic method is to shield the drums from natural

elements such as precipitation. This is usually done by placing the drums in a covered shelter. Avoiding the storage of certain materials in incompatible drums is also important, as is encouraging careful handling of drums by Y-12 Plant employees.

From a spill control standpoint, drum storage areas shall be equipped with impermeable floors and adequate secondary containment structures. If there are unplugged drain inlets in such areas, they shall be sandbagged or equipped with effective barriers. Vigilant good housekeeping shall be maintained in drum storage areas. This includes effective cleanup of any spills immediately after they occur.

A large number of drum storage areas at the Y-12 Plant are paved with asphalt or concrete. In some cases, the drums rest on wooden pallets. Others rest directly on the pavement or on a ground bed. While paved floors are often present, very few of these areas are supplied with other kinds of secondary containment structures. (See Volume II.) If a spill occurs in one of these areas, the Y-12 Plant's Spill Response Crew will be responsible for containing and managing the spill.

12.2 Dumpsters/Storage Areas

Some of the dumpsters at the Y-12 Plant are used to contain waste materials contaminated with beryllium oxide. Although somewhat larger in size, these dumpsters are analogous to those normally used to hold domestic refuse. Trucks are used to transport these dumpsters to approved disposal areas.

As noted in Volume II, dumpsters holding chemical wastes are located in informal waste holding areas at Building 9201-5. One of these dumpsters is positioned on asphalt pavement. The nearest receptor to it is a storm sewer inlet. The other dumpster is positioned on a bed of gravel. Neither of these areas is provided with secondary containment structures.

Beryllium is listed as hazardous waste by the RCRA regulations (40 CFR 261). However, the TDEC has formally approved the handling of beryllium oxide as a non-hazardous waste at the Y-12 Plant, and they have authorized its disposal in the Y-12 Plant's landfill.

12.3 Cylinders/Storage Areas

Steel cylinders are used to contain compressed gases such as hydrogen fluoride (anhydrous hydrofluoric acid), argon, and non-flammable liquid nitrogen. Although spill prevention issues are not generally applicable to inert gases and liquified gases, these containers were included in the site inspection/data base development included in Volume II. Various cylinder sizes are used, and they are often stored or used in groups.

As indicated in Volume II, some cylinder storage areas are equipped with secondary containment features; however, most are not. Spills (if applicable) in these areas would be contained by the Spill Response Crew.

12.4 Other Containers

Section 12.2 of this chapter mentions an informal waste holding area south of Building 9201-5 where a dumpster is used to hold beryllium oxide waste.

Occasionally, containers such as boxes and 5-gallon metal cans may be present in such areas. These containers may rest on wooden pallets or have plastic covers.

The contents of these areas often change on a day-to-day basis. Thus, the presence of such containers is variable and temporary.

12.5 RCRA Hazardous Waste Container Accumulation Areas

A hazardous waste container accumulation area is an on-site location where containers filled with hazardous wastes may accumulate up to 90 days. The hazardous wastes in these areas are usually contained within drums, overpacks, and portable polytanks. Many of these areas, often characterized by high total volumes of stored hazardous wastes (See Volume II, Section 5, "Containers and Container Storage Areas"), are located within the Y-12 Plant's boundaries. These areas fall under state and federal hazardous waste regulations.

12.6 Container and Container Storage Area Inspections

Hazardous raw materials that come into the Y-12 Plant in containers are checked by personnel in the Finance and Materials Division to ensure that arriving quantities match orders. Leaking containers or those exhibiting an obvious spill potential may be identified at this time. In addition, the Y-12 Plant has a regular, formal inspection process aimed at identifying spills and spill potential of stored containers holding hazardous raw materials. These inspections are performed monthly by representatives of the Environmental Management Department, Clean Water Section.

Portable polytanks are inspected according to bulk storage tank criteria. These inspections are discussed in Chapter 9 of this plan.

Hazardous waste container accumulation areas are inspected on a weekly basis. As is the case with accumulation tanks, they are inspected at the departmental level by the foreman in charge of the area.

The criteria for these inspections and the inspection results are recorded on the "Hazardous Waste Container Accumulation Area Weekly Inspection Form." This form and an accompanying description of record retention practices for hazardous waste container accumulation areas are discussed in Chapter 14. Again, all inspections of hazardous waste storage areas fall under scrutiny of state and federal hazardous waste regulations.

13. PCB ITEMS AND STORAGE FOR DISPOSAL FACILITIES

At the Y-12 Plant, PCB are used in transformers, capacitors, heat transfer systems, and hydraulic systems. PCB and PCB items are also stored for disposal off site. Definitions of PCB and PCB items are provided in 40 CFR 761.

The EPA considers PCB in concentrations greater than or equal to 50 ppm to be highly toxic. Consequently, the use, storage, and disposal of PCB is generally regulated under the Toxic Substances Control Act (TSCA).

40 CFR 761.65 sets specific criteria for short-term (up to one year) storage for disposal facilities. PCB items or drums of PCB waste located in temporary (up to 30 days) storage for disposal areas that do not meet the short-term facility criteria are tracked by the 2109 "Request for Transfer, Storage, or Disposal of Waste" form. Facilities using "oversize" storage for disposal containers [40 CFR 761.65(7)(ii)] for PCB-contaminated liquids must also be covered by an SPCC Plan.

PCB and PCB items, either in service or in storage, are not specifically addressed in 40 CFR 112.7. However, PCB are often a constituent of the dielectric fluids used in PCB electrical equipment, such as transformers and capacitors. Oils in heat transfer systems and hydraulic systems may also contain PCB. Because such equipment presents the potential for oil and hazardous chemical spills, it is covered by this SPCC Plan.

PCB items, such as transformers, are discussed entirely in this chapter. Although discussions of the Z-oil system and hydraulic systems containing PCB-contaminated oil are included in the body of this plan, they are not included in Volume II.

13.1 Martin Marietta Energy Systems, Inc./Y-12 Plant: PCB Standard

Martin Marietta Energy Systems, Inc. has a comprehensive PCB Standard for its facilities. This policy covers the use, storage, and disposal of PCB. Its terms meet, and in many instances exceed, PCB requirements in the Federal regulations. Adherence to the stipulations of this policy is expected to substantially reduce the potential for PCB spills at the Y-12 Plant. A copy of the PCB Standard is provided in Appendix B.

13.2 PCB Transformers

13.2.1 PCB Askarel Transformers

By definition, a PCB transformer contains dielectric fluids (oil) with PCB concentrations of 500 ppm or greater. In 1985, there were eighty-nine large PCB Askarel transformers in service at the Y-12 Plant. These transformers were located throughout the Y-12 Plant site, both inside and outside of buildings. The greatest PCB spill risk was attributed to a number of outdoor transformers located adjacent to the EFPC.

Under a project entitled "Replacement of PCB Transformers," removal and replacement of all outdoor PCB Askarel transformers began in June 1987. All forty-three of the outdoor transformers have since been removed; most have been replaced with dry-type transformers. This effectively ended the direct spill potential posed by large outdoor PCB transformers.

The forty-six remaining PCB Askarel transformers were located inside buildings. Under the Environmental Hazard Elimination Project, these transformers have been replaced with dry-type, or non-PCB liquid-filled, transformers.

13.2.2 PCB Mineral Oil Transformers

The PCB mineral oil transformers at the Y-12 Plant are large indoor, small pad-mounted, and small pole-mounted electrical devices. The small pad-mounted and pole-mounted transformers typically contain 15 to 100 gallons of dielectric fluid. The large pad-mounted transformers contain 100 to 800 gallons of dielectric fluid. This fluid consists of a mineral oil that is contaminated with PCB at concentrations of 500 ppm or greater.

The Y-12 Plant has been actively draining and retrofilling large pad-mounted PCB mineral oil transformers. Presently, all but two known PCB transformers have been retrofilled. Replacement of these transformers is planned. Sixty-seven indoor transformers exist that have not been sampled and are assumed to contain PCB in excess of 500 ppm. Sampling of these transformers has been initiated. Fluids removed from these units during retrofilling are collected, stored, and disposed of in accordance with 40 CFR 761. When retrofilling is finished, the dielectric fluid in these transformers will have PCB concentrations of less than 50 ppm. This will effectively remove them from regulation under TSCA. However, any detectable quantity of PCB or oil discharged to a waterway still constitutes a reportable spill.

Mineral oil spills from these transformers could be initiated by high currents, ground faults, or fires. These threats are addressed by several preventive measures. Fuses, overcurrent and ground relays, and circuit breakers on the secondary sides of the transformers are used as protection from high currents and ground faults. As a measure against fire, these transformers are equipped with sprinkler systems.

The small pad-mounted and pole-mounted mineral oil transformers have not been sampled for PCB contamination. Consequently, no retrofilling program is in effect for them.

None of the transformers discussed in this section are diked. Any mineral oil/PCB spill that might occur would be addressed appropriately through the Y-12 Plant's spill response procedures.

13.3 Capacitors

Capacitors are devices used for accumulating and holding electrical charges. They typically consist of conducting surfaces separated by a dielectric. The dielectric may be made from a variety of substances, including oil.

Capacitors are used at many different locations throughout the Y-12 Plant site. These electrical devices contain varying quantities of oil; in many cases, PCB are

present in the oil. The large capacitors contain approximately 1.3 gallons of oil, whereas very small capacitors may hold as little as 2 grams of oil.

All of the outdoor, PCB-containing capacitors that are part of the Y-12 Plant's power system have been removed from service. With reference to their service locations, these devices are no longer potential sources of PCB spills. Although these capacitors have been replaced with devices containing only oil, there will still be a potential for small oil spills.

Other capacitors containing PCB are still in service. However, many of these are scheduled for removal/replacement during the period covered by this plan.

Unlike liquid-filled transformers, capacitors have no ports for draining and refilling the dielectric fluid. Instead, the fluid chambers are factory sealed against leakage. This provides a measure of protection against spills.

No secondary containment structures or fire protection measures are devoted exclusively to capacitors. Because the quantities of oil in capacitors are rather small, most indoor spills would be locally contained by equipment housings, furnishings, and floors.

13.4 Heat Transfer Systems (Z-Oil System)

An active portion of the Y-12 Plant's Z-oil system, a massive heat transfer system that once connected several buildings, uses mineral oil with detectable levels of PCB as a coolant. The PCB were inadvertently added to this portion of the Z-oil system at some unknown time during past operations.

In 1979, a testing program detected the presence of PCB at an average concentration of 100 ppm by weight. To bring concentrations into compliance with TSCA regulations, the contaminated Z-oil was drained and decontaminated. A portion of the decontaminated oil and a supply of new uncontaminated mineral oil was then put into the system. PCB concentrations in the Z-oil system now average only 12 to 16 ppm, well below the 50 ppm ceiling set by the TSCA regulations. However, any spill involving 1 pound or more of PCB or any detectable spill of PCB into a waterway, such as the EFPC, is reportable.

The Z-oil system is also a potential source of oil spills. It now contains 142,000 gallons of mineral oil. Because the Z-oil system parallels the EFPC at close quarters, the chances of a direct, detectable PCB/oil spill to this waterway are substantial. More information on the Z-oil system and the measures taken to prevent or contain PCB/oil spills from it are presented in Chapter 10, *Facility Transfer Operations, Pumping, and In-Plant Processes*.

13.5 Hydraulic Systems

Hydraulic systems containing oil contaminated with PCB are located in Buildings 9215 and 9998. Building 9215 houses a milling operation, and Building 9998 houses the H-1 foundry operations.

The four pieces of milling equipment in the basement of Building 9215 hold a combined total of 1,250 gallons of oil contaminated with PCB at concentrations below 50 ppm. This equipment is not diked. Oil/PCB spills would probably be contained on the basement floor and addressed by the Y-12 Plant's spill response crew.

Each of the three foundry systems contains 350 gallons of oil contaminated with PCB at concentrations below 50 ppm. The foundry equipment is not diked, but the floor drains in its vicinity have been plugged. Oil/PCB spills from this equipment would probably be contained on the building's floor and addressed through the spill response procedures.

The Y-12 Plant has several thousand hydraulic systems. A sample plan has been initiated to ensure that all PCB levels are less than 50 ppm. Any system found to contain 50 ppm or greater PCB would be drained and refilled per 40 CFR 761 or disposed of per regulations. However, even with systems with less than 50 ppm, any spills involving 1 pound or more of PCB or any detectable spill of PCB into a waterway is reportable.

13.6 Storage for Disposal Facilities

13.6.1 Semi-permanent Facilities (Buildings)

Thirteen semi-permanent facilities at the Y-12 Plant are currently used for the storage for disposal of PCB and PCB items with concentrations of 50 ppm or greater. Such materials may be stored up to one year.

All thirteen facilities meet the spill prevention and secondary containment criteria specified for semi-permanent storage for disposal facilities in the TSCA regulations [40 CFR 761.65(b)]. These criteria are as follows:

1. Adequate roof and walls to prevent rain water from reaching the stored PCB and PCB items.
2. An adequate floor that has continuous curbing with a minimum 6-inch-high curb. The floor and curbing must provide a containment volume equal to at least two times the internal volume of the largest PCB article or PCB container stored therein, or 25% of the total internal volume of all PCB articles or PCB containers stored therein, whichever is greater.
3. No drain valves, floor drains, expansion joints, sewer lines, or other openings that would permit liquids to flow from the curbed area.
4. Floors and curbing constructed of continuous, smooth, and impervious materials, such as Portland cement, concrete, or steel, to prevent or minimize penetration of PCB.
5. Not located at a site that is below the 100-year flood water elevation.

The buildings used as semi-permanent storage for disposal facilities at the Y-12 Plant are identified and briefly described below.

Building 9720-9 (Site #TS-01). The western half of Building 9720-9 has been designated for the storage of mixed (RCRA and TSCA) wastes and PCB wastes. It meets RCRA/TSCA standards, with improved ventilation, dike, sprinkler

system, firewall, and a room designated to store 50 drums of flammable waste. The eastern half of Building 9720-9 has been designated for the storage of PCB wastes. This half of the facility is planned for upgrading to standards equal to the western half.

Building 9404-7 (Site #TS-02). This facility is a TSCA storage facility in which solid PCB-contaminated materials are the only wastes accepted. These wastes may also be contaminated with uranium. Storage of liquid and/or hazardous waste is not permitted. Storage containers must comply with the specifications of 49 CFR 178.8, 178.82, and 178.115. The facility provides for spill containment and has a capacity for 496 drums. Building 9404-7 is located south of Building 9204-1.

Building 9418-9 (Site #TS-15). PCB-contaminated liquids drained from electrical equipment are stored for disposal in this building. They are contained in a 14,000-gallon bulk oil storage tank.

Building 9720-58 (Site #TS-11). This facility is a warehouse utilized to stage and store PCB-contaminated equipment (transformers, capacitors, electrical switchgear, etc.), PCB containers, and nonreactive, nonignitable RCRA waste contaminated with uranium. Waste containers received at Building 9720-58 include 30- and 55-gallon drums, 330- and 660-gallon portable tanks, B-25 boxes, and self-contained PCB equipment.

Several spill prevention and secondary containment measures are used in this facility. A metal roof and plastic walls prevent rain water from reaching the PCB and PCB items. Its floor is concrete, coated with a chemical-resistant sealant. The floor is also covered with a plastic tarp surrounded by a PVC dike. In addition, a concrete outside dike surrounds the structure. Inside the dike, a subgrade trough, situated on either side of the building, drains into a collection sump.

Building 9769, Dock 251 (TS-19). A locked cabinet with a 6-inch dike, located on Dock 251 of Building 9769, is used to store drummed PCB wastes generated at the laboratory. The area could hold up to three drums of waste. Any spill from a container would be contained within the cabinet.

Building 9769, Storage Building (TS-20). The storage building is located west of Building 9769. The building has a roof and walls, and plastic strips for doors. An area in the northeast corner of the building is covered with a 30-mil plastic tarp surrounded by a 6-inch PVC dike. Drums entering this facility contain wastes generated at the laboratory.

Disposal Area Remediation Actions (DARA) Soils Storage Facility (Bear Creek) (Site #TS-13). A 4,000 cubic yard Solid Storage Facility was constructed adjacent to the Liquid Storage Facility. This facility is fully enclosed, with a roof, and has vents in the side walls. The PCB-contaminated

soils and sediments were excavated from the bottom of the ponds and the seep areas and placed in the vault. The material will eventually be transported for disposal in the RCRA/TSCA incinerator at the K-25 Site.

A surface seep collection system was installed at specific locations to collect contaminated leachate originating in the trenches. The leachate will be pumped into two 75,000-gallon tanks after being processed through the oil/water separator. (Refer to TS-24 for description of seep collection system.)

A Groundwater Treatment Facility containing an air stripper and carbon absorption columns was constructed adjacent to the WETF. This facility is roofed and fully enclosed. There is a 4-inch asphalt dike surrounding this facility. It is designed to receive and process contaminated water transported from the Liquid Storage Facility described in TS-24. After processing, the waste water will be discharged through a NPDES discharge point.

DARA Liquid Storage Building (TS-09). An area of this building large enough for three 55-gallon drums has been designated as a TSCA storage area. This area is covered with a 30-mil plastic tarp surrounded by a 6-inch PVC dike. Drums entering this facility contain solids generated by the use of the Liquid Storage Facility described in TS-24.

Building 9995, Dock 13 (TS-18). A locked room with a 6-inch dike is used to store drummed PCB wastes generated at the laboratory. The drain in the room has been sealed. Any spill from a container would be contained within the room.

Building 9201-04, First Floor, North Side (TS-21). A compressor was found to be PCB-contaminated. All piping and duct work associated with this compressor, along with the compressor, is being stored in this TSCA area. The area is covered with a 30-mil plastic tarp surrounded by a 6-inch PVC dike. All materials in the area are solids.

Building 9720-12, Southwest End (TS-22). An area of the southwest end of this building is used to store PCB-contaminated solids also contaminated with enriched uranium. Because of the high uranium concentrations, this material cannot be shipped off site for disposal and must be stored until the uranium can be recovered. This area is also surrounded by a 6-inch PVC pipe covered with a plastic tarp.

Building 9204-03, Basement (TS-23). An area of the basement of 9204-03 is surrounded with a 6-inch concrete dike. All floor drains have been sealed. Several transformers and capacitors, stored for reuse, are located in the area. Drums of PCB solid waste, generated from PCB-contaminated equipment, enter this storage area.

Building 9212, E-Wing Basement (TS-26). This area is utilized for PCB-contaminated material potentially containing high concentrations of enriched uranium. Waste containers must stay within a designated area if the potential exists for high uranium concentrations. This area is utilized as that staging area. The area is surrounded by a 6-inch PVC pipe covered with a plastic tarp.

13.2.2 Semi-permanent Waste Oil/Solvent Storage Facilities

Waste Oil/Solvent Storage Facility (Site #TS-06). The Waste Oil/Solvent Storage Facility (OD-9) is a permitted RCRA/TSCA hazardous waste storage facility. This facility provides for the storage of waste oil from the Y-12 Plant containing PCB and other chlorinated organics with uranium contaminants until the materials can be properly disposed. Combustibles or flammable liquids will not be stored at this facility. It includes a concrete-diked area with pads to support six 40,000-gallon capacity tanks. Five carbon steel tanks with corrosion resistant liners are currently installed. Four of the five tanks hold PCB wastes contaminated with uranium. There is instrumentation and heat-tracing systems to prevent freezing. There is also a diked and covered pad for thirty-five drums. Five centrifugal transfer pumps are provided for loading and unloading from the tanks to tanker trucks at the tanker transfer station, which is part of this facility.

Wastes assigned to this facility for interim (i.e. before off-site disposal) and long-term storage arrive in drums, polytanks, and tank trailers. These wastes, after collection from generating areas of the Y-12 Plant, are first shipped to OD-8 (9811-1 RCRA Storage Facility) for sampling and temporary storage while awaiting analytical results. After identification of contents, wastes that are compatible with the contents of the OD-9 tanks are shipped to the Waste Oil/Solvent Storage Facility for storage. While at OD-9, these wastes are pumped to the assigned tanks either at the drum storage area or at the tanker transfer station. The materials stored here are destined for the TSCA incinerator. Because of the anticipated lack of disposal outlets for uranium-contaminated organic liquids, this permitted facility is planned to be in use until the year 2010.

DARA Liquid Storage Facility (Bear Creek) (Site #TS-24). The DARA project is a subproject of the Environmental Improvements Line Item and includes the following engineering elements:

- Diversion ditches were designed and installed to divert natural flowing surface water away from the oil ponds in the Bear Creek Burial Grounds.
- The impounded water in the ponds was treated and discharged in accordance with the NPDES permit.

- A Liquid Storage Facility was constructed to hold the water from the seep collection system (see TS-13). The water was pumped into two 75,000-gallon tanks and stored until it could be processed and discharged through an NPDES discharge point. Also, this facility is diked and contains an oil/water separator with storage capacity for the contaminated oils.

Flammable Mixed Waste Storage Facility (TS-17). The Flammable Mixed Waste Storage Facility (TS-17) contains four 6,500-gallon and two 3,000-gallon stainless steel tanks for storage of ignitable nonreactive liquids. One 6,500-gallon and one 3,000-gallon tank contain liquids contaminated with PCB and uranium. The facility is capable of segregating various spent solvents for collection and storage. Major solvent waste streams are transferred to tanks until commercial resale, disposal, or incineration at the K-25 Site takes place.

13.6.3 Temporary Storage for Disposal Facilities

Oil Landfarm Soils Storage Pad (Site #TS-12). The Oil Landfarm is located in Bear Creek Valley approximately one mile from the west end of the Y-12 Plant. It operated from 1973 until 1982 for the biodegradation of waste oils and machine coolants from the Y-12 Plant. Wastes were collected in tank trucks, distributed over the surface of the plots, and cultivated into the uppermost 3 inches of soil. The plots were cultivated frequently between application periods. The Oil Landfarm was operated on a seasonal basis from April until October, the period with the most favorable condition for soil microbial activity.

Soils contaminated with PCB in excess of 25 ppm were excavated from the landfarm plots and stored in a vault pending treatment in the TSCA/RCRA incinerator at the K-25 Site. These plots and the adjacent Hazardous Chemical Disposal Area were then covered with engineered caps. The capped area is bordered by a riprapped drainage collection system. Drainage from this system flows to lined catch basins. As of December 31, 1989, the engineered caps were completed and closure certification had been submitted to the TDEC.

13.6.4 30-day Storage Areas

The following PCB items may be stored in an area that does not comply with the semi-permanent facility requirements listed in Section 13.6:

- 1) Non-leaking PCB articles and PCB equipment;
- 2) Leaking PCB articles and PCB equipment if placed in a non-leaking PCB container containing sufficient sorbent materials to absorb any liquid PCB remaining in the PCB items;
- 3) PCB containers containing non-liquid PCB; and

- 4) PCB containers containing liquid PCB between 50 and 500 ppm, provided each container bears a notation that indicates that the liquids in the drum do not exceed 500 ppm PCB.

The Y-12 Plant generates such wastes that are, or could be, stored in PCB 30-day storage areas. Each of these areas is tracked and inspected weekly for container leaks or spills. These areas are not diked; however, all precautionary measures, including procedures, are in place in case of a leak or spill. Any spill that might occur would be addressed appropriately through The Y-12 Plant Guidance for Spill Response and Reporting.

14. INSPECTIONS AND RECORDS

Operations, maintenance, and inspections of the hazardous material/waste storage tanks, dikes, and transfer stations at Y-12 are the responsibility of the division Line Manager of each facility. These inspections and tests are conducted by ET&I of the Product Certification Division.

14.1 Inspection Records on Bulk Storage Tanks

Inspection of tanks, both aboveground and underground, is discussed in Chapter 9 of this plan. Formal tank inspection details can be found in MMES Y-12 Plant Procedure Y50-65-EI-012, "Equipment Testing and Inspection Operating; Inspection of Storage Tanks."

The forms used for all tank inspections are general "ET&I Report" forms. These are accompanied by tags that are attached to equipment upon inspection. These tags contain information such as date inspected, expiration date, tank condition, and other pertinent information. When tanks are installed, a set-up file is started at the time of the initial inspection, and the owner is notified of the condition of the tank. A sketch of the tank is also placed in the file. If an inspection indicates that there might be a problem, it is noted on a "Corrosive Liquid Tank" card or on the "Equipment Card" for boilers and pressure vessels, a report is then filed with the Division Manager. Otherwise, inspections are filed with an "OK" status, and this is noted on the computer card. Examples of inspection logs and equipment tags can be found in The Y-12 Plant Guidance for Spill Response and Reporting.

RCRA hazardous waste accumulation tanks are inspected on either a daily or weekly basis according to regulations. Sample daily and weekly inspection logs can be found in The Y-12 Plant Guidance for Spill Response and Reporting. Each time a daily or weekly inspection log is completed, an "Inspection Cover Sheet" is also completed.

14.2 Inspection Records on Dikes

Dikes are discussed in Chapter 9 of this plan. Details concerning dike inspections can be found in MMES Y-12 Plant Procedure Y50-65-EI-013, "Equipment Testing and Inspection Operating; Inspection of Dikes." Recording of dike inspection information follows the same general pattern used for recording information on bulk storage tanks. Field inspection information is recorded on the Equipment Testing and Inspection Report and on a computer card for dike inspections. See ET&I Procedures located in The Y-12 Plant Guidance for Spill Response and Reporting.

14.3 Inspection Records on Pipelines

Pipeline inspections are discussed in Chapter 10. The results of these inspections are recorded on the "Pipe Test Report" form. See ET&I Procedures located in The Y-12 Plant Guidance for Spill Response and Reporting.

14.4 Inspection Records on Transfer Stations

Predeparture inspections of railroad tank cars and tank trucks are discussed in Chapter 11. The form for inspections of railroad tank cars is used to record the results of tank truck inspections before transporting hazardous waste to an on-site location. Waste Treatment Operations personnel are responsible for this information. The Pre-Trip Checklist form is used by personnel in the Traffic Section of the Finance and Materials Division to record the results of loaded tank truck inspections prior to transporting hazardous waste to off-site locations.

14.5 Inspection Records on Containers and Container Storage Areas

Drums, cylinders, and other containers holding stored raw materials are not subject to regular inspections covering leaks and container integrity. However, drums and portable tanks containing hazardous waste are subject to regular inspections. The results of portable tank inspections are recorded in the same manner as those for bulk storage tanks. Hazardous waste container accumulation areas are inspected on a weekly basis.

14.6 Inspection Record Retention Practices

The Y-12 Plant retains the inspection files on existing, on-site bulk storage tanks, dikes, and pipelines indefinitely. Existing records are purged only when a piece of equipment has left the site and will never return. Computer cards are purged annually. All files on these equipment inspections are kept in file cabinets at Building 9706-1A (ET&I Office Building).

Records of RCRA tank and hazardous waste accumulation area inspections are retained indefinitely. These records are kept at some facility locations and in Waste Treatment Operations (Health, Safety, and Environmental Accountability Division) offices.

Inspection records on tank trucks (off-site destinations) containing hazardous waste are retained for two years in the Traffic Section of the Finance and Materials Division. They are kept in Y-12 Plant Records for five additional years. Inspection records on tank trucks (on-site destinations) containing hazardous waste are kept for approximately two weeks in the Waste Collection, Sampling, and Transportation Section of Waste Treatment Operations.

15. SECURITY

Security measures at the Y-12 Plant are focused on preventing intrusions by unauthorized personnel or livestock. Additional measures have been taken to enhance early spill detection and secure the Y-12 Plant facilities against spills.

15.1 Measures for Preventing Unauthorized Entry into the Y-12 Plant

Security at the Y-12 Plant is stringent for four basic reasons:

1. The intelligence sensitivity of the work performed.
2. The potential danger posed to Y-12 Plant facilities and processes by unauthorized personnel entry.
3. Personal safety concerns for inadvertent intruders.
4. Preventing the removal of sensitive material.

A number of security measures aimed at preventing the unauthorized entry of personnel and livestock are in effect at the Y-12 Plant. Because the Y-12 Plant operates on a 24-hour per day basis throughout the year, it is never unattended or out of production. Throughout each day, the Y-12 Plant's facilities are guarded by a well-trained staff of armed security guards. All security guards are equipped with two-way radios and have direct communications with other security personnel, the PSS, and the Y-12 Plant's Fire Department.

Employees are required to show identification badges when entering all gates. Visitors and contractors entering the Y-12 Plant must obtain badge passes at a gate prior to entry. They are then escorted to their destinations by designated Y-12 Plant personnel. Entry into certain portions of the Y-12 Plant is forbidden to persons not holding special security clearances.

The entire Y-12 Plant site is surrounded by at least one 8-foot-high security fence with all access gates either locked or manned by security guards. All gates and locks are checked around the clock by security guards. These and other measures minimize the likelihood of unauthorized entry.

15.2 Measures for the Prevention and Early Detection of Spills

The risk of tampering-related spills at the Y-12 Plant is quite small. The practice of locking tank valves is precluded by the security measures taken to prevent unauthorized access to the Y-12 Plant and its facilities. The same is true of locking and physically isolating the starter controls on pumps and capping or blank-flanging of loading/unloading connections on pipelines. Vandalism of facilities by outside groups is considered to be essentially impossible.

The Y-12 Plant facilities are well lighted during the night. This lighting is more than adequate to allow for the detection of spills. In addition to discouraging vandalism, this lighting is sufficient to allow the observation of any unusual activity in and around the Y-12 Plant facilities.

16.0 PERSONNEL, TRAINING, AND SPILL PREVENTION PROCEDURES

The Y-12 Plant offers training in spill prevention and spill response for all employees with responsibilities involving hazardous materials. Key Y-12 employees (i.e., Division Training Officers, fire department personnel) will be responsible for selecting, compiling, and scheduling these training programs. Spill prevention and response and occurrence reporting training programs will include off-site seminars, off-site classroom courses, off-site simulated drills, on-site meetings, on-site lectures, and on-site classroom courses.

16.1 Spill Prevention Training

Spill prevention training will be offered to all Y-12 employees who work directly or indirectly with hazardous materials. The spill prevention training program is the responsibility of training officers in the Health, Safety, Environment, and Accountability (HSEA) Division. To stay abreast of current federal and state environmental regulations, these training officers will attend off-site seminars approximately every three years on subjects concerning RCRA, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), SARA, and the CWA. The Plant's Environmental Coordinator and Y-12 Environmental Management personnel may also attend some of these off-site seminars.

The Environmental Officer in each of the twenty divisions at Y-12 Plant will be responsible for instructing and/or offering training courses to line employees in spill prevention and mitigation. These officers will receive routine training to stay abreast of current Federal and state environmental regulations and spill prevention techniques. This off-site training will include seminars on subjects involving the CWA, RCRA, CERCLA, SARA, TSCA, and Waste Minimization. As do training officers in the HSEA Division, the Environmental Officers will attend refresher courses and/or seminars every three years. In addition, Environmental Officers will receive periodic on-site training through lectures, seminars, and classroom courses. On-site training on environmental regulations and policies will be provided during regularly scheduled monthly meetings. Specialized training on environmental topics, particularly RCRA and hazardous material handling, will also be provided.

Employee training will be accomplished through posters and bulletins displayed in individual shops, lectures on spill prevention at safety meetings, video tapes referencing spill prevention techniques, and briefings immediately following a spill. The briefings will be used to review why the spill occurred and ways to prevent the recurrence of such spills. In addition, Environmental Officers will instruct line employees on provisions of the SPCC Plan that are applicable to spill prevention at their respective facilities.

Environmental Officers may recommend spill prevention measures to be used at the facilities owned by his/her division. Some of these preventive measures include wrapping pipes during cold weather and placing portable dikes around aboveground tanks as performed by the Maintenance Division. To prevent the future discharge of hazardous materials, the RCRA Compliance Section ensures that routine inspections of the facilities in their divisions are performed at scheduled intervals.

16.2 Spill Response Training

Training programs are required for personnel at the Y-12 Plant who are responsible for spill response and control. Included in these training programs are classroom training and hands-on training. Three separate groups participate in spill response training. These three groups are the SRC and alternates, the Fire Department and Emergency Squad, and the Waste Transportation, Storage, and Disposal (WTSD) group. Presently, each individual group is responsible for its own training.

The Fire Department and Emergency Squad are responsible for the mitigation of the spill/release. The training this group receives is outlined under 29 CFR 1910.120. Because the primary objective of the fire department is to play an offensive role, the firefighters and Emergency Squad personnel are trained to Hazardous Materials Technician level (40 hours). Training is conducted three days each month. This training includes hazardous materials training as well as firefighting techniques and strategies, incident command, self-contained breathing apparatus training, emergency medical training, and OSHA compliance training.

The WTSD personnel are responsible for the clean-up of the spill/release. Currently, these personnel are trained to Hazardous Materials Operation level (24 hours) and trained in the use of self-contained breathing apparatus and respirators. At this level of training, they are able to operate in a defensive role. Training is conducted once a year to comply with recertification. All personnel training records are kept on file in Building 9704-1, in the WTSD training office.

The SRC is responsible for delivering technical advice to the Incident Commander during a spill/release. For this reason, the SRC receives a training background that includes both emergency response as well as regulatory reporting requirements. The SRC is trained to Hazardous Materials Technician level (40 hours), receives self-contained breathing apparatus and respirator training, asbestos abatement training, confined space training, incident command, and emergency medical training. The SRC is also trained in how to properly take samples and smears for analysis at the lab. To stay current with regulatory reporting requirements, the SRC attends training courses updating local, state, and federal reporting requirements. These training requirements are received both on site and off site. The Spill Response Alternates receive Hazardous Materials Operations level (24 hours) training, self-contained breathing apparatus and respirator training, and hands-on training with the SRC.

The Y-12 Fire Department and Emergency Squad participate in drills, both off site and on site. These drills are hypothetical situations that simulate the actual spill/release of a hazardous material commonly present at Y-12. Training attendance rosters are kept on file with the Fire Department.

Environmental Officers in each of the Y-12 Plant's divisions instruct their employees to report the occurrence of a spill to the PSS and informs those employees on provisions of the SPCC plan that are applicable to their respective facilities. In turn, the PSS contacts the SRC and/or the Fire Department and Emergency Squad. The Fire Department and Emergency Squad function as the immediate responders for mitigating the spill/release, with WTSD responding for the clean-up. Once the

Fire Department has the spill/release mitigated, WTSD personnel will relieve the Fire Department personnel in order to begin clean-up.

16.3 Environmental Officers' Meeting

Spill prevention, control, and countermeasures are discussed regularly at the Environmental Officers' meeting held monthly. Each division at the Y-12 Plant is represented by one or more Environmental Officer(s) who are responsible for disseminating information received during the monthly meeting to all sections of their division. The meetings are held on the first Tuesday of each month and are open to all employees. Spills may be discussed during that part of the agenda called "Lessons Learned." Emphasis is placed on recurrent spills or observances, such as oil sheens or floating solids. In most cases, the Y-12 Plant SRC will present the information regarding spills or water quality violations.

In addition, the Y-12 Plant has formed the NPDES Equals Zero (NEZ) team to focus on those situations in which there are repeat violations (including spills) of the NPDES permit and related water quality regulations. In a similar fashion, ad hoc spill committees are formed when specific problems arise, such as oil sheens or floating solids observed on the creek. The spill committee will include department managers who have the resources and commitment to find the source/cause of a spill and make corrections.

16.4 Pollution Prevention Awareness Program

As a requirement of DOE Order 5400.1, "General Environmental Protection Program," the Y-12 Pollution Prevention Awareness Program (PPAP) Plan was written in April 1990. The purpose of the PPAP is to foster the philosophy that prevention is superior to remediation: that successful pollution prevention must include spill prevention, best available technology, and quality control to minimize emissions from process effluent discharges. It is intended that the success and end result of the program will be the incorporation of pollution prevention into the decision-making process at every level throughout the Y-12 Plant.

The Y-12 Plant PPAP should accomplish the following:

1. Make employees aware of general environmental activities and hazards at the Y-12 Plant,
2. Inform employees of specific environmental issues,
3. Train employees as to their responsibilities in pollution prevention,
4. Recognize employees for efforts to improve environmental conditions through pollution prevention, and
5. Encourage employees to participate in pollution prevention at the Y-12 Plant.

To date, two flyers have been distributed Plant-wide: one in conjunction with Earth Day and one environmental bulletin. A general information poster concerning recycling has also been placed Plant-wide.

16.5 RCRA Compliance

16.5.1 Background

In 1989, the need to begin a major RCRA/TSCA compliance initiative had been identified and efforts were begun to identify and inspect RCRA and TSCA storage and accumulation areas throughout Y-12.

Various divisions throughout the Y-12 Plant supplied support by selecting employees to form an internal inspection team. The team members were familiarized with RCRA storage and accumulation requirements, and checklists for conducting inspections were developed to identify compliance with environmental regulations and Y-12 Plant standards (deficiencies).

RCRA Ninety Day Accumulation Areas, Interim Status Facilities, and TSCA Storage areas were identified and assigned numbers. RCRA Satellite Area locations were identified and numbers were assigned. There are fifty-three RCRA Ninety Day Accumulation Areas, forty Interim Status Facilities, eleven TSCA Storage Areas, and 230 RCRA Satellite Accumulation Areas located within Y-12.

An eight-man inspection team began inspecting hazardous waste storage and accumulation areas in April. The team conducts an average of 250 inspections per week.

16.5.2 Scope of Effort

Daily inspections of hazardous waste storage and accumulation areas are the base of the RCRA Compliance effort. Results of these inspections are recorded in a datafile and incorporated into a larger system of reporting, tracking, developing corrective actions, and solving procedural problems.

Key components of the systems are as follows:

1. **Daily Compliance Report.** This report is distributed daily via Electronic Mail to Y-12 Plant management, environmental officers, the DOE site office, and other involved personnel. This report documents deficiencies noted, giving the responsible operator/phone and division, the location, description of the deficiency, and whether the deficiency is a violation of the Y-12 Plant standard or regulation.

The Daily Compliance Report is also used as a vehicle to provide guidance concerning new or changing regulations, Plant-wide problems, and other issues of concern. Daily communication concerning RCRA has lent a strong force to the effort.

2. **Monthly Corrective Action Report.** This report is part of the monthly environmental activities report. It documents all regulatory violations noted by the inspection team and describes corrective action taken.
3. **RCRA "War Room."** This room, located in the Y-12 PSS office, has boards that graphically reflect the compliance status of the hazardous waste accumulation and storage areas inspected. By using colored "dots" next to each area, a picture of Plant-wide compliance can be easily seen. Green dots signify "IN COMPLIANCE," yellow dots signify "OUT OF COMPLIANCE WITH PLANT STANDARD," and red dots signify "OUT OF COMPLIANCE WITH ENVIRONMENTAL REGULATION." This room is updated using reports generated weekly from the datafile.
4. **Monthly Supervisors' Training.** RCRA "Awareness" sessions are given to Y-12 supervisors on a monthly basis. These sessions run approximately 1 1/2 hours and give supervisors a basic understanding of RCRA.

The immediate goal of the RCRA compliance effort is to maintain daily compliance with environmental regulations and Y-12 Plant standards. The long term goal of the program is to instill changes at the operational level that promote daily compliance and are in keeping with DOE priorities. Some of the milestones in keeping with these objectives are as follows:

1. **Standardized Inspection Logs for Ninety Day Accumulation Areas.** Documented inspections of RCRA Ninety Day Accumulation Areas are required by law. A standardized inspection log has been designed and implemented in all RCRA Ninety Day Accumulation Areas. The inspection log is individualized for each area with the area ID Number and the location of the area preprinted on the outside of the binder and on every inspection sheet within the binder. Instructions are provided that allow operators to delegate the responsibility of performing the inspection without involving training time.
2. **Morning Announcement Program.** A program of fifteen RCRA-related announcements was written for 3 weeks of morning broadcast over the Y-12 Plant PA system. The fifteen announcements covered RCRA requirements and generally enhanced RCRA awareness Plant-wide.
3. **Standardized Inspection Logs for RCRA Satellite Accumulation Areas.** Documented inspections of RCRA Satellite Accumulation Areas are not a legal requirement but have been implemented to help ensure regulatory compliance in these areas. Similar in design to the standardized logs for RCRA Ninety Day Accumulation Areas, these logs provide instructions and a standard format by which to perform an inspection.

APPENDIX A

Requirements for the Storage of Chemicals and Petroleum Based Materials to Maintain Environmental Compliance

OAK RIDGE Y-12 PLANT PROCEDURES

Date 08/30/91

Supersedes 01/21/91

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ADMINISTRATIVE

I. Purpose

To establish a plant policy and assign responsibilities for effective environmental management of the storage of chemicals and petroleum based materials. Standards for Best Management Practices (BMP) such as this procedure are required under the Clean Water Act, 40 CFR 125, subpart K and the Y-12 National Pollutant Discharge Elimination System (NPDES) Permit.

II. Scope

Outlines the responsibilities and requirements to provide a uniform system of storage and environmental management of drums or other containers of chemicals, liquid wastes, petroleum or petroleum-based products in the Y-12 plant area. Other site specific BMPs may be recommended depending on circumstances surrounding the facility. Compliance to this BMP shall be determined by the Environmental Management Department. Contact the Clean Water Program office (phone 6-8044) for further guidance.

III. Definitions

- A. Audit: A planned and documented activity performed to determine by investigation, examination, or evaluation of objective evidence the adequacy of and compliance with established procedures, instructions, drawings, and other applicable documents and the effectiveness of implementation.
- B. Container: Any portable device in which a material is stored, transported, treated, disposed of, or otherwise handled.

This procedure has been reviewed by an Authorized Derivative Classifier and has been determined to be UNCLASSIFIED. This review does not constitute clearance for public release.

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SUBJECT: REQUIREMENTS FOR THE STORAGE OF CHEMICALS AND PETROLEUM BASED MATERIALS TO MAINTAIN ENVIRONMENTAL COMPLIANCE

III. Definitions (continued)

- C. Curb: A small containment structure for materials, which could mean a dike, but does not meet the guidelines defined in III.D. for the construction of dikes.
- D. Dike: An embankment or ridge of either natural or man-made constituents used to prevent the movement of liquids, sludges, solids, or other materials. For this procedure, the term dike will also be used to refer to any approved secondary containment structure which may be used to contain spills and releases but which does not meet the requirements for a dike.
- E. Facility Operator: The individual or organization responsible for operating and maintaining the facility.
- F. Hazardous Materials: (1) Any substance designated pursuant to Section 311(b)(2)(A) of the Federal Water Pollution Control Act; (2) Any element, compound, mixture, solution, or substance designated pursuant to Section 102 of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA); (3) Any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act; (4) Any toxic pollutant listed under Section 307(a) of the Federal Water Pollution Control Act; and (5) Any imminently hazardous chemical substance or mixture set forth in the Toxic Substance Control Act.
- G. Hazardous Waste: See lengthy definition as referenced in 40 CFR 261.3. Consult with the Health, Safety, Environment, and Accountability (HSEA)-Environmental Management Department for technical assistance.
- H. Inspection: Examination or measurement to verify whether an item or activity conforms to specified requirements.
- I. Material: Chemicals, liquids, oils, petroleums or petroleum-based products, including hazardous waste or materials, non-hazardous waste or materials, and toxic waste or materials.

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III. Definitions (continued)

- J. Oil: Oil of any kind or in any form, including, but not limited to petroleum, fuel oil, sludge, oil refuse, and oil mixed with wastes other than dredged spoil.
- K. Primary Containment: The tank (III.M.) or container (III.B.).
- L. Secondary Containment: The containment system that is capable of collecting and holding any spills or leaks (IV.D.).
- M. Poly Tank: Any portable tank designed to contain an accumulation of materials (III.I.), constructed primarily of steel and/or plastic. This includes all non-stationary tanks.
- N. Testing: An element of verification for the determination of the capability of an item to meet specified requirements by subjecting the item to a set of physical, chemical, environmental, or operating conditions.

IV. References

- A. Y/TS-516: Spill Prevention, Control and Countermeasures (SPCC) Plan for the Y-12 Plant
- B. Y/TS-135: Y-12 Plant Best Management Practices (BMP) Plan
- C. Y/TS-104: Design Criteria for Hazardous Material/Wastes Storage Tanks, Dikes and Transfer Stations
- D. Procedure 50-65-PT-821: Inspection and Testing of Containment Dikes
- E. Federal Water Pollution Control Act, Public Law 92-500
- F. Clean Water Act (CWA) of 1977, P.L. 95-217
- G. Resource Conservation and Recovery Act (RCRA) of 1976, P.L. 94-580
- H. Toxic Substances Control Act (TSCA) of 1976, P.L. 94-469

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IV. References (continued)

- I. Comprehensive Environmental Response Compensation and Liability Act (CERCLA) of 1980, P.L. 96-510
- J. Procedure 70-909: Dike Management
- K. RCRA Guidance Manual
- L. RCRA/TSCA Visual Standards for Judgement of Steel Drum Integrity

V. Responsible Individuals and Organizations

- A. Environmental Management Department
- B. Facility Operator

VI. Procedures

A. Environmental Management Department

- 1. Assists facility operators in dike management as outlined in IV.J.
- 2. Audits (III.A.) the storage areas for compliance with procedures, orders, and environmental regulations.
- 3. Conducts regularly scheduled inspections (III.I.) of storage area to ensure proper maintenance.
- 4. Maintains files of inspection and audit records.

B. Facility Operator

- 1. Ensures employment of proper secondary containment structures as required by IV.F. to prevent spilled or released materials from entering the waters of the state.

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VI. Procedures (continued)

- a. Ensures that, as a minimum, one of the following systems shall be used: "Dike, berm, curbing, or retaining wall sufficiently impervious to contain spilled material" and that the containment area has an impermeable floor.

NOTE

Diked areas should be covered by a roof and walls, where practical, to prevent collection of rainwater.

- b. Ensures that the dike is designed to meet criteria for size and construction set forth in IV.C.
- c. Ensures that diked areas are located at least 25 ft from the nearest access to the storm sewer or a Site Specific Spill Prevention Control Counter Measures (SPCC) must be written for the dike. R
- d. Manages diked area as outlined in IV.J.
- e. Assigns a responsible individual for each containment area with responsibility for maintenance, inspection, and housekeeping.
- g. Posts the name and phone number of the individual responsible for the diked area near that area.
- h. Ensures that the discharge of collected rainwater is accomplished according to Procedure 70-909, "Dike Management."

NOTE

As a minimum, collected rainwater must be sampled for pH and conductivity and visually inspected for oil, floating solids, color, evidence of spills, or leaks prior to discharge. Discharges shall be approved by the Environmental Management Department through the use of Appendix C of Procedure 70-909, "Y-12 Plant Contained Water Discharge Request" form. Records of discharges shall be maintained by the responsible party.

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VI. Procedures (continued)

- i. Inspects all valves, pipes, and appurtenances for leaks prior to each discharge of rainwater or every 30 days, whichever comes first.
- j. Maintains the appropriate spill response materials near the dike area, such as sorbent, sand bags, shovel, dust pan, plastic gloves, etc.
- k. Maintains the dike area free from debris, dirt, and vegetation and conducts frequent maintenance inspections similar to those outlined in Procedure 70-909.
- l. Ensures that any rainwater collected in the dike area does not exceed 25 percent of the dike capacity nor is allowed to stand in the dike for prolonged periods of time thereby promoting stagnation, algae growth, etc.
2. Maintains valves and piping to containers in a clean condition, free from items such as rust, grease and dirt that may cause deterioration or prevent proper operation of valves.
3. Ensures that storage areas are located at least 25 ft from any waterway of the state of Tennessee, such as East Fork Poplar Creek (EFPC) and Bear Creek (BC).
4. Identifies nearby accesses to the storm sewer system and prepares a spill prevention procedure to protect these entries in the event of a release from the dike area; i.e., use of plastic sheets and sand bags.
5. Ensures that known contamination, visible oil sheen, discoloration, foam, and/or floating solids are not discharged to the storm sewer, EFPC, or BC.

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VI. Procedures (continued)

6. Clearly marks all containers placed in designated diked areas to indicate the contents of the container.
7. Ensures that valves on discharge lines are kept in the "closed" position except when in use.
8. Maintains containers of RCRA/TSCA wastes according to guidelines set forth in the "RCRA GUIDANCE MANUAL" and the "RCRA/TSCA Visual Standards for Judgement of Steel Drum Integrity" manual published by Y-12 Environmental Management Department.
9. Immediately notifies the PSS in the event of a spill or leak and ensures that the Environmental Management Department is notified of any damage to containment structures, container leaks, accidental discharges, changes in dike/tank custodian, changes in use or material in tanks, or any changes that may affect proper implementation of this procedure. R
10. Variance to the requirements of this procedure will be considered by the Environmental Management Department upon written request.

VII. Appendixes

None.

VIII. Administration

The Environmental Management Department is responsible for the interpretation and administration of this procedure.

Approved by:

APPENDIX B

Management of Polychlorinated Biphenyls (PCBs)

**MARTIN MARIETTA ENERGY SYSTEMS, INC.
STANDARD**

ESS-EP-125
REVISION 1
DATE 07/15/92
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SUBJECT: MANAGEMENT OF POLYCHLORINATED BIPHENYLS (PCBs)

I. PURPOSE

This standard establishes the requirements (see Appendix A) for ensuring compliance with PCB regulations under Title 40 Code of Federal Regulations (CFR) 761, applicable state and local regulations for PCBs, for minimizing the risk of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), and for minimizing civil liabilities.

This standard supersedes ESH-1.0, "Management of PCBs," 04/04/89.

II. REQUIREMENT REFERENCES

- A. Title 15 USC et seq., "The Toxic Substances Control Act," as amended
- B. Section 102 et seq. of "The Comprehensive Environmental Response, Compensation, and Liability Act of 1980"
- C. 33 USC Section 1251 et. seq., "The Clean Water Act of 1972," as amended
- D. Title 40 CFR 761, "Polychlorinated Biphenyls (PCBs) Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions"
- E. Title 49 CFR 173.24, 173.510, and 173.1300, "Transportation Requirements"
- F. Title 40 CFR 268.32, "RCRA Land Ban Restrictions"
- G. Title 401, Kentucky Administrative Regulations, Chapter 47: 30 "Environmental Performance Standards," Section 8. Polychlorinated Biphenyls
- H. DOE Order 5400.1, "General Environmental Protection Program," 11/09/88
- I. *Guidance on Remedial Actions for Superfund Sites with PCB Contamination*, Center for Environmental Research Information, EPA/540/G-90/007, 08/90
- J. *PCB Regulation Manual*, G. Kuntz, Plexus Engineering, Executive Enterprises Publications Co., Inc., 1990
- K. Energy Systems Standard, ESS-EP-101, "Environmental Protection Program," latest issuance
- L. Energy Systems Policy, ES-EH-100, "Energy Systems Environmental, Safety, and Health (ES&H) Policy Statement," latest issuance

III. SCOPE/LIMITATIONS

This standard applies to management of PCBs at facilities managed by Martin Marietta Energy Systems, Inc. It includes the use, storage, handling, transportation, and disposal of PCBs. It is to serve as a supplement to 40 CFR 761 and as the standard for developing site-specific procedures. Where deviation from this standard becomes necessary, approval from Energy Systems Environmental Compliance will be obtained by the designated site personnel.

III. SCOPE/LIMITATIONS (Cont.)

When the rules and regulations do not provide clear direction for ensuring compliance, the Energy Systems Environmental Compliance organization will pursue specific guidance from the Environmental Protection Agency (EPA) and incorporate it into this standard. PCB compliance issues such as the use of gaskets laden with PCBs and the storage and disposal of radioactive PCB waste will be governed by Federal Facilities Compliance Agreements (FFCAs) between the EPA and the Department of Energy (DOE). While FFCAs are pending, identified PCB issues of concern will be tracked and reported by the affected sites Environmental Compliance Offices. This standard will be modified as necessary and implemented consistently with related agreement(s). This standard does not exempt any person from any actions or responsibilities under other policies or standards.

IV. DEFINITIONS

- A. **Clean Soil** - for purposes of implementing the EPA Spill Cleanup Policy, clean soil contains less than 1 part per million (ppm) PCB according to 40 CFR 761.125(b)(ii).
- B. **Commercial Building** - as applies to the PCB Transformer Fire Rules, a building that is not classified as "Industrial" by EPA and is typically accessible to both members of the general public and employees. Commercial buildings include public assembly properties, education properties, institutional properties, residential properties, stores, office buildings, and transportation centers.
- C. **Industrial Building** - as applies to the PCB Transformer Fire Rules, a building that is directly used in manufacturing or in technically productive enterprises. Industrial buildings are generally accessible only to workers and include buildings used directly in the production of power and in the manufacture of wood and paper products, chemicals, plastics, and metals (see EPA-based interpretation of industrial buildings under "Requirements").
- D. **Leak or Leaking** - according to 40 CFR 761.3, any instance in which a PCB article, PCB container, or PCB equipment has any PCBs on any portion of its external surface.
- E. **PCB** - polychlorinated biphenyl. PCBs belong to a broad family of organic chemicals known as chlorinated hydrocarbons, produced by attaching one or more chlorine atoms to a biphenyl molecule. Virtually all PCBs in existence today have been synthetically manufactured under such common trade names as

Aroclor	Elemex
Aroclor B	Eucarel
Asbestol	Hyvol
Adkarel	Inerteen
Askarel*	No-Flamol
Chlorextol	Pyranol
Chlorinol	Pyroclor
Clorphen	Saf-T-Kuhl
Diaclor	Sanotherm
Dykanol	

*Askarel is also the generic name used for nonflammable insulating liquid in transformers and capacitors.

- F. **PCB Annual Document** - the document prepared for meeting the requirements of 40 CFR 761.180, "Records and Monitoring." The PCB Annual Document is prepared and issued to DOE annually by July 1 and covers the previous calendar year (unless otherwise required).

IV. DEFINITIONS (cont.)

- G. **PCB Contaminated Electrical Equipment** - per 40 CFR 761.3, any electrical equipment that contains from 50 ppm to 499 ppm PCB. Mineral oil-filled electrical equipment other than circuit breakers, reclosers, and cable that has not been tested is assumed to be PCB-contaminated.
- H. **PCB-Detectable Item** - by Energy Systems practice and for purposes of this standard, items such as equipment and containers that contain a level of PCBs that is detectable but less than 50 ppm and is not the result of dilution of a source of 50 ppm PCB or greater.
- I. **PCB Detectable Spill** - by Energy Systems practice and for purposes of this standard, a PCB-detectable spill contains detectable levels of PCBs (e.g., 2 ppm in oil) but less than 50 ppm (and is not a result of dilution of 50 ppm PCB or greater.) It is considered a PCB-detectable spill when the PCBs migrate from the surface of the equipment or another source of detectable PCBs. Compare this to the definition of "PCB Spill."
- J. **PCB-Detectable Waste** - by Energy Systems practice and for purposes of this standard, waste containing a level of PCBs that is detectable but is less than 50 ppm and is not a result of dilution of a source of 50 ppm PCB or greater.
- K. **PCB Quantifiable Level/Level of Detection** - the "*quantifiable level*" for PCB according to 40 CFR 761.3 and 761.20(e) is considered 2 ppm (micrograms per gram) in matrices such as oil. The "*levels of detection*" for PCBs are considered less than 2 ppm in such matrices as oil, soil/sediment, and water. Specific limits are dependent upon the matrix and analytical method. (See also EPA document EPA/540/G-90/007.)
- L. **PCB Spill** - according to 40 CFR 761.125, this term applies to spills of 50 ppm PCB or greater and means both intentional and unintentional spills, leaks, and other uncontrolled discharges where the release results in any quantity of PCBs running off or about to run off the external surface of the equipment or other PCB source, as well as the contamination resulting from those releases. The concentration of PCBs spilled is determined by the PCB concentration in the material spilled as opposed to the concentration in the material onto which the PCBs are spilled. When a spill of untested dielectric mineral oil occurs, the oil is presumed to contain greater than 50 ppm but less than 500 ppm PCBs and is subject to the relevant requirements of the EPA PCB Spill Cleanup Policy.
- M. **PCB Transformer** - an electrical transformer that meets one of the following criteria: (1) contains 500 ppm or greater PCB, (2) the nameplate indicates that the transformer contains PCB dielectric fluid, (3) the transformer does not have a nameplate and there is no information (such as sample results) available to classify the transformer otherwise, or (4) PCBs at 500 ppm or greater have been added to the transformer and the transformer has not been reclassified according to the requirements of 40 CFR 761.30(a)(2)(v.).
- N. **PCB Waste(s)** - PCBs and PCB items that are subject to the disposal requirements of subpart D of 40 CFR 761.
- O. **Total Destruction Method of Disposal** - by Energy Systems practice and for purposes of this standard, an approved alternate method of disposal of PCB articles such as transformers that eliminates the need to place waste items such as transformer carcasses in a landfill. This method may include a combination of incineration, dechlorination, decontamination, and smelting to eliminate any residual PCBs.

IV. DEFINITIONS (cont.)

- P. **Toxic Substances Control Act (TSCA) PCB ID Number** - the 12-digit number assigned to a facility by EPA upon notification of PCB waste activity under 40 CFR 761.205 as a generator with an on-site storage facility, commercial storer, transporter, or permitted disposer.

V. REQUIREMENTS

- A. **Antidilution Provisions Under 40 CFR 761.1.** All requirements of the antidilution provision found in 40 CFR 761.1 apply to PCB management. Specifically, no provision specifying a PCB concentration may be avoided as a result of any dilution, unless otherwise specified. Examples of this provision include but are not limited to PCB spill debris, diluted used oil or solvents, material processed to separate PCBs, and PCB flush solvents.
- B. **Use of PCBs and PCB Items**
1. **PCB Light Ballasts**
 - a. By Energy Systems practice, light ballasts not marked "No PCBs" are assumed to contain PCBs.
 - b. By EPA guidance, all leaking PCB light ballasts are fully regulated under 40 CFR 761 for storage and disposal.
 2. **Hydraulic/Heat Transfer Systems per 40 CFR 761.30.** Hydraulic systems and heat transfer systems that have been retrofilled or treated to reduce PCB concentrations below 50 ppm must be retested for PCBs at least 3 months after the most recent retrofilling. Retrofilled systems will be retested at least annually thereafter to ensure that levels have not crept to 50 ppm or higher. As a matter of practice, annual testing may be discontinued when test results are essentially the same as the previous year, i.e., when PCB levels have stabilized at a concentration below 50 ppm. If testing indicates that a system contains 50 ppm PCB or greater, then the system shall be retrofilled, retreated, or removed from service for disposal.
 3. **Used Oil Prohibitions per 40 CFR 761.20.** No fluids such as used oil with any detectable concentrations of PCBs may be placed in a landfill, land farmed, or used as a sealant, coating, or dust control agent. Used oil is assumed to contain detectable PCBs unless analysis or other certification proves otherwise. Only EPA-approved incineration, burning in high efficiency boilers, or other EPA-approved methods of disposal are permitted.

The requirements of 40 CFR 761.60(a)(3)(iii) must be met for burning such fluids in a high efficiency boiler. If sold off-site for burning in a high efficiency boiler, written verification of compliance must be obtained for file.

Used oil burned for energy recovery must meet the requirements of 40 CFR 761.20(e).
 4. **Storage for Reuse: PCB Electrical Equipment.** By Energy Systems practice, PCB and PCB-contaminated electrical equipment such as transformers removed from service for reuse may not be placed in storage for more than 1 year without having a specifically identified and documented future use. Transformers stored for legitimate future use must be afforded the same level of protection as similarly situated, in-use transformers. The intent of this item is to avoid deceptive storage arrangements in which transformers have been removed from service or abandoned and stored unprotected for indefinite periods of time.

V. REQUIREMENTS (cont.)

5. PCB Transformer Fire Rules: Storage of Combustibles. Per EPA guidance on the PCB Fire Rules, the prohibition of storing combustibles within 5 meters of a PCB transformer does not apply to bulk combustible or flammable liquids stored in accordance with applicable fire codes.
6. PCB Transformer Fire Rules: Industrial vs Commercial Buildings. Per EPA guidance for complying with the PCB Transformer Fire Rules, a building in which personnel are primarily engaged in technically productive work should be classified as industrial. If there is office activity in addition to technically productive work, then the building may be classified as industrial if the transformers are in open view and trained electricians are readily available at all times during building use. A building should be classified as commercial if it is staffed primarily by workers not directly engaged in technically productive work. Administrative and clerical personnel fall under the category of "not directly engaged." Buildings with access restricted to the general public such as office buildings and laboratories can still be classified as commercial by EPA if the PCB transformers cannot be easily observed by people working in the area. Because of the varied interpretations by EPA regional offices, the Environmental Compliance staff should be consulted about situations in question.
7. Transformers: Inspections. PCB transformers will be inspected at least once every 3 months according to the requirements of 40 CFR 761.30(a). By Energy Systems practice and for purposes of this standard, additional inspections of PCB-contaminated transformers and transformers with detectable PCBs are required as follows:
 - a. PCB-contaminated transformers (50 to 499 ppm PCB), except pole-mounted units, will be inspected for leaks at least quarterly, with a minimum of 30 days between inspections, and inspections shall be documented. Leaking PCB-contaminated transformers should be repaired or replaced as quickly as practical.
 - b. PCB detectable transformers (2 to 49 ppm PCB) are to be inspected for leaks and documented at least once per year. Any discovery of leaks and resulting corrective actions are also to be documented.
 - c. Pole-mounted, PCB-Contaminated (50-499 ppm PCB) mineral oil transformers are to be inspected and documented for leaks once per year. Pole-mounted transformers may be inspected from the ground. Unless lab analysis is available to show otherwise, all mineral oil transformers including pole-mounted transformers are assumed to be PCB-contaminated (50 to 499 ppm PCB) and must be treated accordingly when spills are identified.
 - d. Spills from PCB transformers and PCB-contaminated transformers are considered PCB spills under 40 CFR 761.125 and must be handled accordingly. Spill cleanup from PCB-detectable transformers (2 to 49 ppm PCB) should begin immediately. Spill containment measures must be implemented for all spills until repairs or replacement can be accomplished.
- C. Marking: The marking requirements found in 40 CFR 761 Subpart C shall apply to all applicable items and include the use of the M_L or M_S marking (see Appendix B). By Energy Systems practice, this standard will also require the marking of tested PCB-contaminated electrical equipment and of PCB-detectable items (PCB levels up to 49 ppm not resulting from dilution of a 50 ppm or greater PCB source).
 1. PCB-contaminated electrical equipment: Use of a standard label (UCN-17274A, green background with white letters) for marking PCB-contaminated (50 to 499 ppm) electrical equipment (see Appendix C). Sites may use personalized versions of this label.

V. REQUIREMENTS (cont.)

2. PCB-detectable item (detectable to 49 ppm): Use of a standard label (UCN-17506, blue background with white letters) for marking items that contain PCB levels up to 49 ppm PCB not resulting from dilution of a source of 50 ppm PCB or greater (see Appendix D). Sites may use personalized version of this label.
3. Per 40 CFR 761.40, PCB Large Low Voltage (<2000 volts) Capacitors may be marked (with the required M_L mark) at the time of removal from use.

Requirements C.1 and C.2 above shall be implemented within 3 months after issuance of this standard. PCB-detectable Waste generated prior to July 1, 1992, may be marked with the PCB Detectable label at the time of removal from storage for disposal.

D. Disposal: In pursuing disposal of PCBs, all sites must in addition to the requirements of 40 CFR 761, comply with applicable local and state disposal requirements and consider the potential CERCLA liabilities.

1. PCB Containers. PCB containers (as defined in 40 CFR 761.3) and certain other articles that have had PCB concentrations of 500 ppm or greater PCB material in direct contact with them shall be disposed of as PCB waste or decontaminated as described in 40 CFR 761.79. By Energy Systems practice, PCB Containers of 500 ppm PCB or greater which has been decontaminated per 40 CFR 761.79, must contain less than 10 micrograms PCB per 100 square centimeters. By Energy Systems practice, containers and certain other articles that have had material with PCB concentrations of less than 500 ppm PCB in direct contact with them must be disposed of by incineration or in a chemical waste landfill, or be decontaminated per 40 CFR 761.79. Resulting waste flush solutions that contain PCBs must be destroyed in an EPA-approved incinerator or high efficiency boiler, or through an approved alternate method of disposal.
2. PCB-Detectable (Less Than 50 ppm) Transformers and Other Articles. By Energy Systems practice, transformers and other articles removed from service for disposal that contain PCBs at concentrations from "detectable" to 49 ppm must be disposed of with careful consideration to both CERCLA and civil liability. Fluid will be drained and by regulation disposed of in an EPA-approved incinerator, a high efficiency boiler, an industrial boiler or furnace approved under the Resource Conservation Recovery Act according to the requirements of 40 CFR 761.20(e), or another EPA-approved alternate method of disposal. The requirements of 40 CFR 761.60(a)(2)(iii) must be met for burning such fluids in a high efficiency boiler. Drained carcasses by Energy Systems practice, should be incinerated, disposed of in an EPA-approved landfill, or disposed of using an approved alternate method of disposal. Special consideration may be given to selling carcasses to certain "reputable" companies for metal reclamation provided that:
 - a. definitive and current PCB concentration data are provided to the buyer and marked on the transformer;
 - b. a legal disclaimer (prepared by General Counsel) is provided on all paperwork. The buyer signs an agreement with DOE or Energy Systems acting as an agent for DOE that he/she acknowledges the PCB concentration in the transformer(s) and understands the risks and recommended practices for ultimate disposal of dielectric fluid and other resulting wastes; and

V. REQUIREMENTS (cont.)

c. the companies are approved by the Legal and the Environmental Compliance staff.

When approvals are present from Energy Systems, the preferred disposal method for PCB-detectable transformers will be total destruction.

3. PCB-Contaminated Transformers and Other Articles (50 to 499 ppm PCB). By Energy Systems practice, Transformers and other articles removed from service for disposal that contained concentrations from 50 ppm to 499 ppm PCB must be incinerated, disposed of by an approved alternate method of disposal, or disposed of in an EPA-approved landfill. Fluid from such transformers and articles is required by regulation to be incinerated, burned in a high efficiency boiler according to 40 CFR 761.60, or disposed of by an EPA-approved alternate method of disposal. When approvals are present from Energy Systems, the preferred disposal method for PCB-contaminated transformers will be total destruction.
4. PCB Transformers. Transformers removed from service for disposal that contained 500 ppm PCB or greater must be disposed of according to 40 CFR 761.60(b)(1) or another EPA-approved method that provides total destruction of the PCBs. When approvals are present from EPA and Energy Systems, the preferred disposal method for PCB transformers will be total destruction.
5. PCB Light Ballasts and PCB Small Capacitors. By Energy Systems practice and EPA recommendation, all PCB light ballasts and PCB small capacitors will be disposed of in an EPA-approved incinerator.
6. Alternate Methods of Disposal. Development of EPA-approved alternate methods of PCB disposal is encouraged by Energy Systems. Research and development of an alternate method of disposal for less than 500 pounds of PCB-contaminated material requires EPA regional approval. Final approval from EPA headquarters is required for use of more than 500 pounds. Requests for these approvals are to be coordinated with the Site Environmental Compliance Office and the Energy Systems Environmental Compliance TSCA Compliance Program Office.

The use of EPA-approved alternate methods of PCB disposal is subject to Environmental Compliance Staff approval and will be considered on a case-by-case basis.

7. Disposal Options: Preferred Method(s). Incineration as approved under the TSCA and other methods of disposal approved by EPA and Energy Systems are preferred over placement of PCB wastes in landfills.

E. Storage For Disposal

1. PCB Wastes. PCB waste as defined in 40 CFR 761.3 must be stored in compliance with 40 CFR 761.65. This includes the requirement to seal floors and curbing that may crack over time to maintain a smooth continuous containment. Synthetic liners may be used if data are obtained to show that the material used is impervious to the PCBs stored within the area. Documented inspections of all PCB waste storage areas, including generator storage areas such as process generator areas and laboratories, will be performed at least once every 30 days. These inspections will check for leaks and should also include facility requirements, container requirements, marking requirements, and dating of container requirements.

V. REQUIREMENTS (cont.)

2. **PCB-Detectable Wastes.** Wastes containing PCBs that are not regulated under Subpart D of 40 CFR 761 (i.e., less than 50 ppm and not from a dilution of 50 ppm or greater), are not required to be stored in a 40 CFR 761.65 facility. However, by Energy Systems practice, best management practices should be used (i.e., waste tracking, packaging, identification, characterization, protection from weather, secondary containment for liquids, and inspections for leaks).
3. **PCB Light Ballasts and PCB Small Capacitors.** By Energy Systems practice and EPA recommendation, PCB light ballasts and other PCB small capacitors stored for disposal will be managed, inventoried, and stored as PCB Waste under 40 CFR 761 Subpart D.

F. Spills

1. **PCB Spill Response.** By regulation, the cleanup of new PCB spills from a source of 50 ppm or greater must begin as quickly as possible and no more than 24 hours from the time of discovery, except that the cleanup of PCB transformers must begin within 48 hours. Any delays in the initiation of cleanup must be justified (e.g., by a civil emergency, adverse weather conditions such as a tornado, or emergency operating conditions) and documented. Any PCB spill that poses an immediate threat to the environment or that has migrated or is about to migrate to waters of the state must receive immediate, continuous attention until the situation is at least stabilized. Once begun, cleanup shall be given priority and is not to be placed "on indefinite hold." However, since sampling and analysis time and other necessary delays are part of the normal cleanup process, it is not always necessary to maintain an uninterrupted cleanup campaign. Spill areas that are inactive during "waiting periods" are to be cordoned off to restrict access and posted with "Caution: PCB Spill Area" signs according to the requirements of 40 CFR 761.125 (see Appendix E).
2. **EPA PCB Spill Cleanup Policy Requirements.** The EPA PCB Spill Cleanup Policy shall be used for cleanup of all spills of 50 ppm PCBs or greater occurring since May 4, 1987. Prior spills and certain other cleanups require consultation with the EPA Regional Administrator for determination of cleanup levels to be attained. In these cases, the Site Environmental Compliance Office and the Energy Systems Environmental Compliance TSCA Compliance Program Office shall be consulted.
3. **Effect of Antidilution Provisions.** The antidilution provisions of 40 CFR 761.1 apply to all PCB spills occurring since February 17, 1978. Therefore, spills occurring on or after that date must be classified and managed according to the PCB concentration of the spill source.
4. **Classification of Pre-TSCA PCB Spills.** Per EPA guidance, spills which occurred before February 17, 1978, may be classified based on spill site characterization.
5. **PCB-Detectable Spill Cleanup.** By Energy Systems practice and applicable local and state requirements, PCB-detectable spills (less than 50 ppm) other than normal process drips contained from the outside environment shall be cleaned up in accordance with the substantive requirements of the EPA PCB Spill Cleanup Policy as described in 40 CFR 761.125(b)(1.). Specifically, spills should be cleaned up promptly, and visible traces should be removed. Cleanup of spills in soil should extend 1 foot in all directions from the perimeter of the spill area, and spills on solid surfaces should be treated with a double wash and rinse. These spill cleanup activities shall be documented.

V. REQUIREMENTS (cont.)

6. Management of Spill Debris From a PCB-Detectable Source. By Energy Systems practice, waste soil, concrete, and other spill cleanup debris with detectable levels of PCBs from sources with less than 50 ppm PCB should be disposed of by incineration or burial in a chemical waste landfill, or through an approved alternate method of disposal. However, on-site burial may be allowed under the conditions described below.
 - a. The concentration of PCB in the soil, concrete, or other debris under consideration must average less than 25 ppm PCB.
 - b. A technical evaluation is performed that considers the waste stream, treatment, and disposal characteristics to ensure a low probability of PCB migration.
 - c. Appropriate written regulatory approval (such as from the state) must be obtained.
 - d. Written Environmental Compliance staff approval must be obtained upon meeting the above conditions.

Other wastes with less than 25 ppm PCB may be considered on a case-by-case basis for on-site burial subject to the conditions above.

G. PCB Waste Disposal Records

1. Manifesting. The PCB Manifesting Rules as written in 40 CFR 761 Subpart K apply to shipments of PCB Wastes. PCB Wastes that are transferred between PCB storage facilities having different TSCA PCB identification numbers shall be manifested when shipped. Examples of this include PCB waste shipments from Oak Ridge National Laboratory, Paducah Gaseous Diffusion Plant, Portsmouth Gaseous Diffusion Plant, or the Y-12 Plant PCB storage facilities to K-25 PCB storage or disposal facilities.

The PCB Manifesting Rules as written in 40 CFR 761 Subpart K do not apply to the transfer of PCB waste from PCB generators to PCB storage facilities with the same TSCA PCB identification. However, this does not nullify any applicable Department of Transportation requirements. Also, per 40 CFR 761.65(e)(9), waste tracking must still be performed. Waste Tracking documentation include examples such as internal manifests (i.e., "Request for Disposal" forms), shipping papers, bills of lading, and other documentation which ensure that the waste can be properly tracked from origin to disposal. An example of this is shipment of PCB waste from the K-25 "Elza Switchyard" located at the Y-12 Plant directly to a K-25 PCB storage facility from the generation location.

2. Exception Reporting. Exception reports for PCB waste disposal will be submitted according to 40 CFR 761.215 and applicable FFCAs. Energy Systems will also submit EPA exception reports to DOE for nonradioactive PCB waste shipped after 9 months of generation and disposed of after 12 months of generation. Exception reports shall be submitted to DOE within 25 days of obtaining the necessary information required by 40 CFR 761.215 for the report. Submission to DOE is to be made within 25 days to allow a timely transmittal to EPA. Exception reporting for radioactive PCB shipped after 9 months of generation and disposed of after 12 months of generation will be submitted as required by applicable FFCAs.

VI. RESPONSIBILITIES

A. Compliance, Evaluations, and Policy organization

Provides for establishment of the Energy Systems PCB Policy and oversight of compliance for the management of PCBs with this standard.

B. Environmental Compliance organization, TSCA (PCB) Compliance Program

1. develops, maintains, and interprets the requirements for the management of PCBs;
2. serves as principal regulatory interface for PCB compliance issues;
3. provides technical assistance to the sites;
4. conducts PCB compliance audits; and
5. immediately notifies Corporate Environmental Management, Vice Presidents, and General Counsel of deficiencies in PCB compliance matters that pose a significant potential liability to the corporation.

C. Site Managers

ensures effective implementation of this standard.

D. Site Environmental Management Organizations, TSCA (PCB) Compliance Programs

1. oversees and ensures that all site applicable requirements of this standard are incorporated into site specific policies, standards, and procedures;
2. oversees and ensures that all site applicable required records are properly developed and maintained at their respective sites; and
3. conducts PCB Compliance audits and inspections.

VII. REQUIRED RECORDS

- A. PCB Annual Document per 40 CFR 761 Subpart J.
- B. PCB Waste Disposal Records and Reports per 40 CFR 761 Subpart K.
- C. PCB Spill Cleanup Records per 40 CFR 761 Subpart G.
- D. PCB Waste Management Records per 40 CFR 761 Subpart D.
- E. PCB FFCA Required Reports such as but not limited to: Monthly and Quarterly Progress Reports and the Annual PCB Compliance Agreement Reports.

VIII. ADMINISTRATION

The Director of Environmental Compliance is responsible for the administration and interpretation of this standard.

IX. APPENDIXES

- A. Performance Objectives
- B. Example of a PCB M_L Marking
- C. Example of a Marking for PCB-Contaminated Electrical Equipment
- D. Example of a Marking for PCB-Detectable Material <50 ppm
- E. Example of a PCB Spill Cleanup Area Caution Sign

Prepared by:
Ricky J. Keeling

Approved by:
Fred R. Mynatt, Vice President
Compliance, Evaluations, and Policy

APPENDIX A

PERFORMANCE OBJECTIVES

Energy Systems Performance Objectives for this procedure are

1. to comply with all federal, state, and local requirements regarding the management of PCBs;
2. to minimize the potential CERCLA and civil liabilities regarding the use, handling, storage, and disposal of PCBs; and
3. to phase out all PCB articles regulated by federal and state law to the maximum extent practicable in as short a time as possible.

APPENDIX B

EXAMPLE OF A
PCB M_L MARKING¹
(Black Letters with Yellow Background)
(6 in. by 6 in.)
(May be personalized by Sites)

¹Also available are versions for the K-25 Site (UCN-17272) and the Y-12 Plant (UCN-17272A).

APPENDIX C

EXAMPLE OF A
MARKING FOR PCB-CONTAMINATED ELECTRICAL EQUIPMENT
(White Lettering with Green Background)
Reference UCN-17274A (12356 5-91)
(May be personalized by Sites)

**PCB CONTAMINATED
ELECTRICAL EQUIPMENT**

THE DIELECTRIC FLUID IN THIS
EQUIPMENT HAS BEEN TESTED TO
DETERMINE THE AMOUNT OF
POLYCHLORINATED BIPHENYL(S)
(PCB CONTENT). WE CERTIFY THAT,
BASED ON THE TEST SAMPLE, THE
FLUID CONTAINED BETWEEN 50 AND
499 PPM OF PCB AND IS THEREFORE
CLASSIFIED AS PCB CONTAMINATED
ELECTRICAL EQUIPMENT AS DEFINED
IN THE AUG. 25, 1982, VOL. 47, NO. 165
OF THE FEDERAL REGISTER.

IN CASE OF A LEAK OR SPILL,
CONTACT: _____
PHONE NO: _____

UCN-17274A (12356 5 91)

APPENDIX D

EXAMPLE OF A
MARKING FOR PCB-DETECTABLE MATERIAL <50 PPM
(White Lettering with Blue Background)
Reference UCN-17506 (12356 5-91)
(May be personalized by Sites)

PCB DETECTABLE
< 50 ppm
POLYCHLORINATED BIPHENYLS

THE CONTENTS OF THIS ITEM HAVE BEEN VERIFIED
TO CONTAIN LESS THAN 50 PARTS PER MILLION PCBs
AND GENERATED FROM A SOURCE OF < 50 ppm PCBs

PCB CONCENTRATION	
SAMPLE ID	
DATE SAMPLED	
CONTACT	PHONE NO.
UCN-17506 (12356 5-91)	

APPENDIX E

EXAMPLE OF AN ACCEPTABLE
PCB SPILL CLEANUP AREA CAUTION SIGN
(Yellow and Black)

CAUTION

PCB SPILL AREA

DO NOT ENTER

**AVOID AREA IN ORDER TO MINIMIZE
SPREAD OF CONTAMINATION
AND POTENTIAL FOR HUMAN EXPOSURE**

APPENDIX C
Spill History Report

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
05/29/92	1530	EFPC OF67	EXCOM	Oil Sheen	Trace	Recurring oil sheen; due to rain, sheen was slightly worse than normal.
05/27/92		EFPC OF67	EXCOM	Oil Sheen	Trace	Very light oil sheen observed.
05/27/92		EFPC OF109	Release	Bubbles	Trace	Trace amount of bubbles were observed.
05/27/92		EFPC N/S P		Bubbles	Trace	Bubbles observed behind grate, not on creek.
05/22/92	1015	9720-7	Spill	Hydraulic Fluid	1 - 2 gal.	Fittings in hydraulic cylinders of a hydraulic press leaked onto floor inside building.
05/22/92	0815	Bear Creek	Spill	Transmission Fluid	1 - 2 qts.	Fluid had leaked from vehicle in parking lot over night.
05/21/92	1530	9769	Spill	Potassium Cyanide	1.2g/500ml	Lab technician dropped a 500 ml. bottle containing potassium cyanide solution. Spill was contained to a 4 ft. area inside building.
05/21/92	1035	Portal 33	Spill	Oil	-1 - 2 oz.	Very small amount of oil spilled on pavement from unknown vehicle.
05/20/92	1620	9204-4	Spill	Ethylene Glycol	3.5 oz.	Radiator hose on guard vehicle blew out. Spill did not exceed reportable quantity.
05/20/92	1230	9211	Spill	Oil	2 gal.	Oil line in AC unit blew out. Oil did not reach storm drain.
05/20/92	0830	EFPC OF109	Release	Soap	< Trace Am	Nothing observed.
05/20/92	0830	EFPC N/S P	Release	Oil and Paper	Unknown	Nothing observed.
05/20/92	0830	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Nothing observed.
05/18/92	0845	9995	Spill	Oil	< 2 oz.	Oil leaking from light ballast.
05/18/92	1100	9201-2	EXCOM	Mercury	4.4 lbs.	Mercury that had been spilled was less than one pound. Remainder of mercury was removed from a small vessel in basement.
05/18/92	1455	Divr Ditch	Release	Oil	1 ml.	Backhoe was excavating creek bottom, grease and oil from backhoe was released into creek.
05/15/92	1350	EFPC N/S P	Release	Muddy Discharge	Unknown	Nothing observed.
05/15/92	0920	Post 28	Spill	Ethylene Glycol	< 1 pint	Vehicle drove through gate leaking anti-freeze.
05/14/92	1040	9201-3	Spill	Oil	< 8 oz.	Light ballast leaking onto workbench.
05/13/92	0850	EFPC OF109	Release	Soapy Discharge	< Trace Am	Traces of soap observed.
05/12/92	0935	EFPC N/S P	Release	Foam	< Trace Am	Foam from natural occurring process.
05/12/92	0935	EFPC OF109	Release	Soapy Discharge	< Trace Am	No soap observed. Accumulation of graphite observed.
05/11/92	0900	EFPC OF109	Release	Gray cloudy discharge	Unknown	Nothing observed.
05/10/92	1800	9712	Spill	Ethylene Glycol	5 gal.	Tractor tire containing antifreeze blew out.
05/08/92	1020	ParkingLot	EXCOM	Oil Sheen	< 1 ml.	Oil sheen in parking lot reported during heavy rains.
05/08/92	1132	9737	Spill	RCRA	< 8 oz.	Waste had eaten through drum allowing waste to spill onto dock. Waste was photographic finisher

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
05/07/92	0900	EFPC OF109	Release	Soapy Discharge	< Trace Am	and developer mixed.
05/07/92	0920	EFPC M/S P	Release	Foam/Oil	Unknown	Light bubbles observed.
05/07/92	0900	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Foam from natural occurring process. Oil part of recurring sheen.
05/07/92	1115	9201-5	Spill	Cooling water	20 gal.	Very light oil sheen observed. May bales changed out.
05/01/92	0930	9201-5W	Spill	Oil	1 1/2 gal.	Cooling water for furnace was being restored to service when pop-off valve went off. Water spilled onto floor and was vacuumed up.
05/01/92	1050	EFPC OF109	Release	Soapy Discharge	> Trace Am	Scrap machinery being loaded onto truck was full of oil, when placed onto truck oil spilled out.
05/01/92	0835	EFPC OF109	Release	Soapy Discharge	< Trace Am	Very large slug of foam observed coming from outfall.
04/29/92	0900	EFPC OF32	Fish Kill		1	Traces of large slug of foam visible. Large deposit of graphite found on creek.
04/29/92	0900	EFPC OF109	Release	Soapy Discharge	< Trace Am	Dead fish reported to ESD personnel.
04/28/92	1030	EFPC OF34	Fish Kill		1	Slight soapy suds observed.
04/28/92	1015	EFPC M/SP	EXCOM	Oil Sheen	< 1 ml.	None found.
04/28/92	1000	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Nothing observed.
04/27/92	1508	9208	Spill	Lacquer Thinner	-1 qt.	Nothing found.
04/27/92	0830	Scaboro Rd	Release	Water	Unknown	Employee dropped can, spilling lacquer.
04/24/92	1340	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Underground water line broke.
04/24/92	1322	Scimmer	Fish Kill		2	No sheen observed.
04/22/92	0845	EFPC OF14	Release	Soapy Discharge	< Trace Am	One dead minnow at scimmer, one at diversion channel.
04/22/92	0845	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No soap observed.
04/22/92	0845	Scimmer	Fish Kill		1	No sheen observed.
04/22/92	1050	Oak Ridge	Spill	Printers Ink	1 gal.	No fish found.
04/21/92	0820	EFPC OF14	Release	Soapy Discharge	< Trace Am	Flat bed truck from stores was delivering ink to townsite, when case slid off truck spilling onto pavement.
04/21/92	0820	EFPC OF109	Release	Soapy Discharge	< Trace Am	Naturally occurring foam observed.
04/21/92	0820	EFPC OF83	Release	Soapy Discharge	< Trace Am	Nothing observed.
04/20/92	0825	EFPC OF83	Release	Soapy Discharge	< Trace Am	No soap observed coming out of outfall. Pocket of foam observed at mouth of outfall.
04/20/92	0825	EFPC OF109	Release	Soapy Discharge	< Trace Am	No soap observed coming out of outfall. Pocket of foam observed at mouth of outfall.
04/20/92	0825	EFPC OF14	Fish Kill		1	No soap observed.
04/20/92	0825	Scimmer	Fish Kill		3	None found.
04/20/92	0825					Only found one dead fish.

COMMENTS

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
04/16/92	1515	9215	Spill	Waste Water	3 - 20 gal	Waste water from elevator shaft containing oil spilled into storm sewer causing sheen on creek.
04/16/92	0840	EFPC OF14	Release	Soapy Discharge	< Trace Am	None observed.
04/16/92	0840	EFPC OF34	Release	Soapy Discharge	< Trace Am	None observed.
04/16/92	0840	EFPC OF83	Release	Soapy Discharge	< Trace Am	Light soap observed.
04/16/92	0840	EFPC OF109	Release	Soapy Discharge	< Trace Am	None observed.
04/16/92	0840	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	None observed.
04/09/92		S 9201-5	Spill		< 8 oz.	Technician turned over drum with rinse water.
04/09/92	1415	9028-6	Spill	Hydraulic Oil	1 gal.	Hydraulic line on fork lift burst.
04/08/92	1100	9995	Spill	Mercury	1 tsp.	Mercury spilled onto floor.
04/08/92	1010	9995	Release	Argon		Glove box released argon into room.
04/08/92	0925	EFPC OF83	Fish Kill	Fish	1	ESD personnel removed.
04/08/92	0925	EFPC OF109	Release	Soapy Discharge	> Trace Am	Large amount of foam observed at this outfall.
04/08/92	0925	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Light oil sheen observed.
04/07/92	1705	9401-1	Spill	Petroleum Product	< 1 tbs.	Small amount of "oil" was reported on pavement.
04/07/92	1230	EFPC OF 67	EXCOM	Oil Sheen	< 1 ml.	Oil was stirred up when hay bales and diapers were changed out.
04/07/92	1115	9215	Release	Smoke		Depleted uranium fire.
04/07/92	0830	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Oil Sheen observed.
04/07/92	0830	EFPC OF14	Fish Kill	Fish	1	ESD personnel removed.
04/07/92	0835	EFPC OF109	Release	Soapy Discharge	< Trace Am	Light soap suds observed.
04/06/92	0815	EFPC	Release	Soapy Discharge		Build-up of foam over week-end caught at booms.
04/06/92	0900	EFPC OF	Fish Kill	Fish	1	ESD personnel removed.
04/03/92	1215	Cent. Post	Spill	Ethylene Glycol	1 1/2 gal.	Private Vehicle (XPM-144). Broken water pump.
04/03/92	0915	EFPC OF34	Fish Kill	Frog	1	ESD personnel removed frog.
04/03/92	0915	EFPC OF14	Fish Kill	Fish	1	ESD personnel removed fish.
04/03/92	0915	EFPC OF 67	EXCOM	Oil Sheen	< 1 ml.	No sheen observed.
04/03/92	0915	EFPC M/S P	Release	Soapy Discharge	< Trace Am	Soap suds observed.
04/03/92	0805	EFPC OF109	Release	Soap Suds	> Trace Am	Large amount of suds observed coming through outfall.
04/01/92	0945	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No sheen observed.
04/01/92	1400	9204-2	Spill	Lithium Dust	< 100 g	Loading dust into bag and flang blew out. Dust was contained inside building.
04/01/92	0945	EFPC OF109	Release	Soapy Discharge	< Trace Am	Light soap observed.
03/31/92	0830	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No sheen observed.
03/31/92	0810	EFPC OF109	Release	Soapy Discharge	< Trace Am	Light suds observed.
03/31/92	1445	SE 9201-5	EXCOM	Mercury	4 oz.	Found Mercury in storm drain.
03/31/92	0930	EFPC OF61	Spill	Oil	1 tsp.	Outfall 61 was being taken out of service. Plug came out of pipe spraying oil onto creek.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
03/30/92	0825	EFPC OF109	Release	Soapy Discharge	< Trace Am	Slight soapy observed.
03/30/92	0825	EFPC OF14	Release	Soapy Discharge	< Trace Am	Slight soap observed.
03/30/92	1455	9737	Spill	Hydraulic Oil	10 gal.	Hydraulic line broke on vehicle spilling oil onto ground.
03/30/92	0825	EFPC OF83	Release	Soapy Discharge	< Trace Am	Slight soap observed.
03/30/92	1830	EFPC OF109	Release	Oil Sheen	< 1 ml.	Oil believed to be coming from parking lot runoff.
03/30/92	0825	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Light oil sheen observed.
03/27/92	1350	EFPC OF109	Release	Foam	Trace Amt.	Pocket of foam caught at boom.
03/27/92	0805	EFPC OF109	Release	Brown Frothy Foam	> Trace Am	Brown, frothy, stringy, foam observed at boom. Samples found to have cellulose, protein, fatty ester oil, and dead bug bodies. It is believed this is a natural occurring residue.
03/26/92	0850	EFPC OF83	Release	Soapy Discharge	< Trace Am	No soap observed.
03/26/92	1430	EFPC OF60	Spill	PCB Oil	15 gal.	Outfall 60 was being taken out of service. Terra cotta pipe broke, spilling oil into ditch. Spill was contained in ditch.
03/26/92	0850	EFPC N/SP	Release	Soapy Discharge	< Trace Am	Slight soap observed. Foam slightly oil from old oil being stirred up by workers.
03/26/92	1055	9215 Hwing	Spill	Oil	5 oz.	Light ballast leaking onto floor.
03/26/92	1000	Well #683	Spill	Groundwater	80 gal.	Contaminated groundwater spilled onto soil.
03/26/92	0850	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Slight oil sheen observed.
03/26/92	0850	EFPC OF109	Release	Soapy Discharge	< Trace Am	Light soap observed. Believed to be from M/S Pipes.
03/25/92	1330	EFPC N/SP	EXCOM	Oil Sheen	< 1 ml.	Workers installing dechlorinator stirred up "old" oil trapped in pipes.
03/25/92		Cent. Port	Spill	Gasoline	1/2 gal.	Private vehicle had hole in bottom of gas tank. Gasoline leaked onto pavement.
03/25/92	0900	EFPC N/SP	Release	Soapy Discharge	Trace Amt.	Light soap observed coming through M/S pipes.
03/24/92	1310	EFPC N/SP	Release	Soapy Discharge	< Trace Am	No soap observed.
03/24/92	0840	EFPC OF14	Release	Soapy Discharge	< Trace Am	No soapy discharge observed.
03/24/92	0840	EFPC OF109	Release	Soapy Discharge	< Trace Am	No soap observed.
03/19/92	1055	9201-1	Spill	Hydraulic Oil	< 10 gal.	Hydraulic line on truck 9300 broke and sprayed oil onto pavement.
03/19/92	0840	EFPC N/SP	Release	Foam	< Trace Am	No foam observed.
03/19/92	0840	EFPC OF109	Release	Foam	Trace Amt.	Foam observed.
03/19/92	0840	EFPC OF67	EXCOM	Oil Sheen	< 1 oz.	No sheen verified.
03/19/92	0835	EFPC OF99	Release	Foam	< Trace Am	No foam observed.
03/19/92	0835	EFPC OF83	Release	Foam	Trace Amt.	Foam observed.
03/19/92	0830	EFPC OF34	Release	Foam	< Trace Am	No foam observed at time of arrival.
03/19/92	0830	EFPC OF14	Release	Foam	< Trace Am	Light foam observed.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
03/13/92	0945	EFPC OF67	EXCOM	Oil Sheen	< measurab	Slight intermittent oil sheen observed.
03/13/92	0955	EFPC N/SP	Release	Foam		No foam was observed.
03/13/92	1000	9204-4	Release	Water	< 8 oz.	Fire Department flushing out trucks.
03/13/92	1200	9422-2	Spill	Anti-freeze		Air compressor leaking anti-freeze onto pavement.
						Spill contained
03/12/92	0925	EFPC OF109	Release	Soapy Discharge	> trace am	Large amount of suds observed coming out of Outfall 109.
03/12/92	0820	EFPC OF109	EXCOM	Oil Sheen	< 1 ml.	Oil sheen was trapped in eddy just above Outfall 109. It is believed this oil sheen is from the W/S pipes.
03/12/92	0820	EFPC N/SP	Release	Soapy Discharge	Trace Amt.	Small amount of suds observed.
03/12/92	0808	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Light oil sheen observed.
03/10/92	0915hr	EFPC N/SP	Release	Soapy Discharge	Trace Amt.	Suds were observed coming out of the W/S pipes.
03/10/92	0915hr	EFPC OF67	Release	Soap and oil	Trace Amt.	Oil and soap were observed coming out of the outfall.
03/10/92	1320	E Post 8	Spill	Hydraulic Oil	6 oz.	Hydraulic oil spilled onto asphalt. Source unknown.
03/10/92	0915hr	EFPC OF109	Release	Soapy Discharge	Trace Amt.	Soap suds observed.
03/10/92	0915hr	EFPC OF14	Release	Soapy Discharge	Trace Amt.	Pocket of foam found at boom.
03/09/92	0905hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No oil observed.
03/09/92	1040hr	Post 7	Spill	Gasoline	4 oz.	Gasoline leaked from vehicle onto pavement.
03/06/92	1300hr	EFPC N/SP	EXCOM	Oil Sheen	< 1 ml.	No oil sheen observed.
03/06/92	1300hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No oil sheen observed.
03/06/92	1300hr	EFPC OF83	Release	Soapy Discharge	Trace Amt.	Foam pocket observed.
03/06/92	1300hr	EFPC OF109	Release	Soapy Discharge	Trace Amt.	Small amount of suds observed.
03/06/92	1300hr	EFPC OF13	Release	Soap and oil	Trace amt.	No oil observed. Small pocket of foam caught in boom.
03/05/92	0830hr	EFPC N/SP	Release	Soapy Discharge	< trace	No soap observed.
03/05/92	1400hr	M 9720-24	Spill	Oil and Water	< 5 gal.	Stainless steel vat in contaminated area, filled with rainwater and oil overflowed onto ground.
03/03/92		EFPC OF67	EXCOM	Oil Sheen		Very slight oil sheen observed.
03/02/92	1150hr	9215	Spill	Water	2 oz.	Small amount of water was spilled in doorway.
03/01/92	1120hr	ME Post 33	Spill	Oil	90 gal.	Water was mopped up and disposed of.
02/27/92	0856hr	EFPC N/SP	Release	Mud		Metal box containing oil was overturned with bulldozer, spilling oil onto ground. Samples showed < 2 mcg/g PCB.
02/27/92	0856hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No muddy discharge was observed. Light soap was observed.
02/27/92	0856hr	EFPC OF109	Release	Soapy Discharge	< trace	Very light oil sheen observed.
						No soap observed.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
02/26/92	1345hr	Post 9	Other	Oil on road		Oil from vehicles had accumulated on road in front of post making road slick during rain. Absorbol was applied and removed.
02/26/92	1152hr	N 9709	Other	5 gal. gas can		5 gal. gas can had been overturned. Can was empty and lying in puddle of water. It was returned to its proper storage area.
02/25/92	1330hr	EFPC N/SP	Release	Oil Sheen	< 1 ml.	No oil sheen observed.
02/25/92	1330hr	EFPC OF109	Release	Soapy Discharge	Trace Amt.	Light soapy observed.
02/25/92	1300hr	EFPC N/SP	Release	Oil Sheen	< 1 ml.	No oil sheen observed.
02/21/92	1115hr	EFPC OF4	Release	Oil Sheen	< 1 ml.	No oil observed.
02/21/92	1110hr	EFPC N/SP	Fish Kill		1	One dead fish found at this location.
02/21/92	1055hr	EFPC N/SP	EXCOM	Oily foam	< 1 ml.	It is believed to be part of incident on 2-16-92. Residual oil is still in underground pipes and slowly moving through system.
02/21/92	0830hr	EFPC OF63	Fish Kill		1	One dead fish found at this location.
02/21/92	0830hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	Very light oil sheen observed.
02/20/92	0850hr	EFPC OF55	Fish Kill		2	One dead minnow was found just above this outfall and one just below it.
02/20/92	0850hr	EFPC OF109	Release	Soapy Discharge	< trace	A few light bubbles observed.
02/19/92	0900hr	EFPC M/S P	Fish Kill		1	One dead minnow found at this location.
02/19/92	0900hr	EFPC OF71	Fish Kill		1	One dead minnow found at this location.
02/19/92	0900hr	EFPC OF42	Fish Kill		1	One dead minnow found at this location.
02/19/92	0900hr	EFPC OF41	Fish Kill		1	One dead minnow found at this location.
02/19/92	0900hr	EFPC M/S P	EXCOM	Oil Sheen	< 1 ml.	No sheen observed.
02/19/92	0900hr	EFPC OF109	Release	Soapy Discharge	< trace	No soap observed.
02/19/92	0900hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No sheen observed.
02/18/92	0805hr	EFPC OF121	Fish Kill		1	One dead fish found at this outfall.
02/18/92	0805hr	EFPC OF109	Release	Soapy Discharge	< trace	No soap observed.
02/18/92	0805hr	EFPC M/S P	EXCOM	Oil Sheen	< 20 gal.	From incident occurring 2-16-92.
02/16/92	1230hr	EFPC N/SP	Spill	Oil		Pool of oil was found in the West End Salvage yard coming from crushed machinery in yard. Oil was entering storm sewer and subsequently EFPC.
02/16/92	1230	EFPC N/SP	Spill	Oil (PCB)	< 20 gal.	Pool of oil found in West End Salvage Yard. Oil was entering storm drain.
02/14/92	0925hr	EFPC OF109	Release	Foam	< trace	Minute amount of soap observed.
02/14/92	0925hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml	Slight oil sheen observed.
02/12/92	1630hr	N 9111	Spill	Sprinkler Sys Water	2 gal.	Sprinkler system malfunctioned draining water onto floor.
02/12/92	1505hr	9114	Observation	Unknown	Unknown	Creek near 9114 was reported to discolored. No discoloration was observed.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
02/12/92	1500hr	E 9995	Spill	Gasoline	> 1 gal.	Above ground tank was filled to full, contents expanded spilling product onto ground.
02/11/92	1250hr	9737	Spill	Battery Acid	< 1 cup	Cracked battery leaked small amount of acid onto asphalt.
02/11/92	1015hr	EFPC N/SP	Release	White particles		Existing condition.
02/11/92	1015hr	EFPC OF109	Release	Soapy Discharge	< trace	Very slight existing oil sheen.
02/11/92	1015hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml	Very slight oil sheen.
02/10/92	0835hr	SE 9720-8	Spill	Trimsol and water	20 gal.	Coolant water was spilled onto floor inside building. Product did not reach environment.
02/08/92		EFPC OF135	Release	Soapy Discharge	< trace	PSS, Earl Mannis, observed soap coming from this outfall. He advised it was < trace amounts and the SRC did not need to respond from home.
02/07/92	1240hr	EFPC N/SP	Release	White Particles	Unknown	White particles observed. Have been analysed at lab and found to be a protein substance. Source is undetermined and under investigation.
02/05/92	0925hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml	No oil sheen observed
02/05/92	0925hr	EFPC OF109	Release	Soapy Discharge	< trace	Light bubbles observed
02/04/92	1045hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml	Slight oil sheen observed
02/04/92	1730hr	EFPC OF109	Release	Soapy Discharge	Trace Amt	Was not visible when SRC arrived. No source was identified.
02/04/92	1045hr	EFPC OF109	Release	Soapy Discharge	< trace	No soap observed
02/03/92	0840hr	EFPC OF109	Release	Soapy Discharge	< trace	Soap suds were trapped in eddy just above Outfall 109. Source is undetermined.
02/02/92	0850hr	EFPC OF109	Fish Kill		3	Three dead minnows were found at this location.
02/02/92	0850hr	EFPC OF67	EXCOM	Oil Sheen	< 1 ml.	No oil sheen was observed.
02/02/92	0850hr	EFPC N/S P	Fish Kill		1	One dead minnow was found at this location.
02/02/92	1030hr	SE 9720-6	Spill	Oil	1 qt.	Outside vendor had cracked gasket on line from power steering pump. Oil was spilled onto ground.
02/02/92	1300hr	9201-1	Spill	Trimsol	10 gal.	Trimsol was leaking out of graphite machine, through hole in floor, onto concrete pad in basement. Spill was contained inside building.
02/02/92	1100hr	Lake Real	EXCOM	Oil	< 1 ml.	No oil was observed.
01/30/92	1050	EFPC OF67	EXCOM	OIL SHEEN	< 1 ml	LIGHT OIL SHEEN OBSERVED. HAY BALES AND SAND BAGS REMOVED FROM IN FRONT OF OUTFALL.
01/30/92	1325hr	EFPC N/SP	EXCOM	HIGH CHLORINE LEVEL	.31	CHLORINE LEVEL WAS REPORTED TO BE .31, HIGHER THAN NORMAL
01/29/92		EFPC OF67	EXCOM	OIL SHEEN	< 1 ml	SLIGHT OIL SHEEN OBSERVED
01/29/92		EFPC OF109	RELEASE	SOAPY DISCHARGE	< TRACE	NO SOAP OBSERVED
01/29/92	1040	EFPC OF21	RELEASE	SOAPY DISCHARGE	1-2 gal.	SOAP OBSERVED COMING THROUGH MANHOLE IN BIOLOGY AND TRACED TO OUTFALL 21

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
01/29/92	1400	EFPC N/SP	EXCON	HIGH CHLORINE LEVEL	.35	CHLORINE LEVELS FOUND TO BE SLIGHTLY HIGHER THAN NORMAL
01/28/92	AM950	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AND OBSERVED OIL SHEEN.
01/28/92	PM600	9212	SPILL	FREON	1 QT.	END RESPONDED PM600. SPILL CONTAINED TO SMALL AREA AND ABSORBOL APPLIED.
01/28/92	NOTIME	N/SP	RELEASE, EXCON	CHLORINE		SAMPLES TAKEN. LEVELS NORMAL FOR THIS AREA.
01/28/92	PM425	9706-1	SPILL	ETHYLENE GLYCOL	0.5 GAL	END RESPONDED PM425. ANTI-FREEZE LEAKED OUT OF RADIATOR. ABSORBOL APPLIED.
01/28/92	AM950	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM950 AND OBSERVED LESS THAN TRACE AMOUNTS.
01/27/92	AM825	EFPC OF72	FISH KILL			SEE FISK FILL NOTEBOOK FOR THIS DATE.
01/27/92	AM825	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM825, BUT OBSERVED NO FOAM.
01/27/92	AM825	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM825, BUT OBSERVED NO OILY SHEEN.
01/24/92		9212	RELEASE	HYDROGEN FLUORIDE	600 LBS.	FAULTY VALVE ON HF SYSTEM. NINE PERSONNEL OBSERVED FOR EXPOSURE.
01/23/92	AM850	EFPC OF128	RELEASE	FOAM		END RESPONDED AM900, BUT OBSERVED NO FOAM.
01/23/92	AM850	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM900 AND OBSERVED OILY SHEEN.
01/23/92	AM850	EFPC OF109	RELEASE	FOAM		END RESPONDED AM900 AND OBSERVED LESS THAN TRACE AMOUNTS.
01/22/92	AM915	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM915 AND OBSERVED OILY SHEEN.
01/22/92	AM850	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM905, BUT OBSERVED NO DISCHARGE.
01/17/92	PM105	EFPC N/SP	RELEASE	COLLING TOWER WATER		END RESPONDED PM105.
01/16/92	PM120	9215	SPILL	CHILLER WATER	1000 GALS.	END RESPONDE PM120 AND MANAGED CLEANUP.
01/16/92	AM850	EFPC OF109	RELEASE	FOAM		END RESPONDED AM850, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/16/92	PM142	EFPC N/SP	RELEASE	CHLORINE		END DID NOT RESPOND IN PERSON. SPRINKLER HEAD TRIPPED POSSIBLY CAUSING HIGH CHLORINE READINGS IN EFPC.
01/16/92	AM850	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM850 AND OBSERVED OILY SHEEN.
01/15/92	PM110	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED PM110 AND OBSERVED OILY SHEEN.
01/15/92	PM110	EFPC N/SP	RELEASE	CHLORINE		END RESPONDED PM110. SAMPLES TAKEN AND FOUND TO BE NORMAL FOR THIS LOCATION.
01/15/92	PM1230	9725	SPILL	OIL	3 OZ.	END RESPONDED PM1230 AND MANAGED CLEANUP.
01/14/92	PM900	EFPC	SPILL	MLKY DISCH	10-20 GALS	END RESPONDED PM900. LAKE REALITY CLOSED.
01/14/92	PM120	EFPC N/SP	RELEASE	CHLORINE		END RESPONDED PM120. SAMPLES WERE TAKEN.
01/14/92	AM920	EFPC OF109	RELEASE	FOAM		END RESPONDED AM920, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/14/92	AM920	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM920 AND OBSERVED SHEEN.
01/13/92	AM1035	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1035, BUT DID NOT OBSERVE SHEEN.
01/10/92	PM145	EFPC N/SP	RELEASE	CHLORINE		END RESPONDED PM145. SAMPLING TECHS CALLED TO

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
VERIFY CHLORINE LEVELS. LEVELS NORMAL FOR THIS LOCATION.						
01/10/92	AM1115	MTN 9208	SPILL	ETHYLENE GLYCOL	8 OZ.	END RESPONDED AM1115 AND MANAGED CLEANUP.
01/10/92	AM830	EFPC OF109	RELEASE	FOAM		END RESPONDED AM830, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/10/92	AM830	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM830 AND OBSERVED SHEEN.
01/09/92	AM845	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM845 AND OBSERVED OILY SHEEN.
01/09/92	AM845	EFPC OF109	RELEASE	FOAM		END RESPONDED AM845, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/08/92	PM230	9201-3	SPILL	OIL	2 OZ.	END RESPONDED PM230 AND MANAGED CLEANUP.
01/08/92	PM142	EFPC OF47	RELEASE	FOAM		END RESPONDED PM145, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/08/92	PM145	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED PM145 AND OBSERVED OILY SHEEN.
01/08/92	AM930	EFPC W/SP	RELEASE, EXCON	UNT PRICL		END RESPONDED AM930 AND OBSERVED PARTICLES.
01/08/92	AM930	EFPC OF109	RELEASE	FOAM		END RESPONDED AM930, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/07/92	AM930	EFPC OF109	RELEASE	FOAM		END RESPONDED, BUT OBSERVED LESS THAN TRACE AMOUNTS.
01/07/92	AM930	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM930 AND OBSERVED OILY SHEEN.
01/06/92	PM150	9754-2	SPILL	GASOLINE	15 GALS.	END RESPONDED PM150 AND MANAGED CLEANUP.
01/06/92	PM130	9720-2	RELEASE	BELGIARD 550	55 GALS.	END RESPONDED PM130 AND FOUND DRUM COLLAPSED AND LEAKING.
12/23/91	PM155	EFPC OF67	SPILL	OILY SHEEN		END RESPONDED PM155 AND MANAGED CLEANUP.
12/20/91	PM250	EFPC OF128	RELEASE	FOAM		END RESPONDED PM300, BUT OBSERVED NO FOAM.
12/20/91	PM1215	EFPC OF21	RELEASE	FOAM		END RESPONDED PM1215 AND OBSERVED FOAM.
12/20/91	PM1200	EFPC OF109	RELEASE	MUD	80 GALS.	END RESPONDED PM1200.
12/18/91	AM800	9720-2	SPILL	HYDROGEN PEROXIDE		END RESPONDED AM800 AND MANAGED CLEANUP.
12/17/91	AM935	W 9201-1	SPILL	OIL	300 ml	END RESPONDED AM940 AND MANAGED CLEANUP.
12/16/91	AM1125	9769	SPILL	METHYLENE CHLORIDE		A GLASS TUBING BROKE WHILE STORM WATER WAS BEING TESTED WITH METHYLENE CHLORIDE.
12/16/91	AM1050	9706-1	SPILL	GREASE		END RESPONDED AM1050 AND OBSERVED GREASE SMEARED ON DOOR HANDLE AND LARGE AMOUNT OF GREASE ON PAVEMENT. SD CLEANED UP.
12/13/91	PM125	EFPC OF83	RELEASE	FOAM		END RESPONDED PM145 AND OBSERVED FOAM.
12/13/91	PM1235	CHSTMT RDG	SPILL	ETHYLENE GLYCOL	2-3 GALS	END RESPONDED PM1245. HEAVY EQUIPMENT COOLING SYSTEM FAILURE. ABSORBENT APPLIED AND PLACED IN 55 GALLON DRUM.
12/13/91	NOTIME	EFPC OF109	RELEASE	MILKY DISCH		THIS SIGHTING OF MILKY DISCHARGE IS RELATED TO THAT NOTED ON 12-10-91 IN THAT IT RESULTED FROM THE MC FERGUSON CONSTRUCTION ACTIVITIES ON BEAR

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
12/10/91	PM227	EFPC OF 109	RELEASE	MILKY DISCH		CREEK RD. END RESPONDED PM227. MILKY DISCHARGE WAS DETERMINED TO BE FROM A CONSTRUCTION JOB ON BEAR CREEK RD. SILT IN THE GROUND WATER WAS ENTERING STORM DRAIN.
12/09/91	AM900	9201-5W	SPILL	OIL		END RESPONDED AM945, BUT COULD NOT LOCATED REPORTED OIL.
12/09/91	AM915	9215	EXCOM	OIL		END OBSERVED IN FOLLOWUP WORK THAT DURING A RAIN EVENT THERE WAS A SHEEN COMING FROM DOWNSPOUT ON ROOF OF BUILDING 9215 AND OILY WATER WAS ENTERING THE STORM DRAIN. PLASTIC AND SANDBAGS PUT IN PLACE.
12/09/91	AM940	S 9720-6	SPILL	OIL		END RESPONDED AM1100, BUT COULD NOT LOCATE OIL.
12/05/91	PM355	EFPC OF 121	RELEASE	FOAM		END RESPONDED PM358 AND OBSERVED LESS THAN TRACE AMOUNTS OF FOAM. THIS SITING RESULTED FROM FOAM DRIFTING DOWNSTREAM FROM THE BOOM PLACED JUST BELOW OF 135 ON 12/4/91.
12/04/91	AM845	9720-5	SPILL	SPRINKLER WATER	<400 GALS	END RESPONDED AM910 AND OBSERVED WATER DISCHARGING FROM SPRINKLER HEAD ONTO FLOOR. WATER HAD ENTERED STORM DRAIN. HEALTH PHYSICS CHECKED WATER FOR CONTAMINATION, BUT NONE FOUND.
12/04/91	AM845	EFPC OF 135	RELEASE	FOAM		END RESPONDED AM1000 AND OBSERVED > TRACE AMOUNT OF FOAM. A BOOM WAS PLACED ACROSS EFPC JUST BELOW THIS OUTFALL.
12/02/91	PM230	EFPC N/SP	RELEASE	OILY SHEEN	< 1 GAL	END RESPONDED PM245 AND OBSERVED HEAVY SHEEN AT THE NORTH/SOUTH PIPES.
11/27/91	PM100	NE 9212	SPILL	HYDRAULIC OIL	~100 GALS	END RESPONDED PM115. OIL SPILLED ON ROOF OF 9212 AND FLOWED TO ROOF DRAIN. NONE ENTERED STORM SYSTEM.
11/22/91	AM1005	9204-2E	SPILL	HYDRAULIC OIL	~ 2 GALS	END RESPONDED AM 1020. ABSORBALL SPREAD AND CLEANED UP.
11/18/91	AM805	EFPC N/SP	RELEASE, EXCOM	WMT PRCL		END RESPONDED AM815 AND OBSERVED WHITE PARTICLES.
11/18/91	AM805	EFPC OF 67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM815 AND OBSERVED VERY LIGHT OILY SHEEN.
11/14/91	AM1000	EFPC N/SP	RELEASE, EXCOM	WMT PRCL		END RESPONDED AND VERIFIED WHITE PARTICLES.
11/14/91	AM1000	EFPC OF 67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
11/14/91	AM1000	EFPC OF 14	RELEASE	SOAPY		END RESPONDED, BUT COULD NOT VERIFY SOAPY DISCHARGE.
11/12/91	AM915	EFPC N/SP	RELEASE, EXCOM	WMT PRCL		END RESPONDED AM920 AND VERIFIED WHITE PARTICLES.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
11/12/91	AM915	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM920 AND VERIFIED OILY SHEEN.
11/05/91	AM900	EFPC N/SP	RELEASE, EXCOM	UNT PRCL		END RESPONDED AND OBSERVED LITGHT DISCHARGE OF WHITE PARTICLES.
11/05/91	AM900	EFPC OF14	RELEASE	SOAPY		END RESPONDED, BUT OBSERVED NO FOAM.
11/04/91	AM945	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM945, BUT OBSERVED NO SOAPY DISCHARGE.
11/04/91	AM945	EFPC OF14	RELEASE	SOAPY		END RESPONDED AM945, BUT OBSERVED NO SOAPY DISCHARGE.
11/01/91	AM905	EFPC OF109	RELEASE	SOAPY		END RESPONDED, BUT OBSERVED NO SOAPY DISCHARGE.
11/01/91	AM905	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED, BUT OBSERVED NO OILY SHEEN.
10/31/91	AM1000	EFPC N/SP	RELEASE, EXCOM	UNT PRCL		
10/31/91	AM1000	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		
10/30/91	PM330	S 9201-3	SPILL	2-OIL	8 oz	
10/29/91	PM240	W 9212	SPILL	GASOLINE		
10/28/91	AM900	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		
10/28/91	AM900	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		
10/28/91	AM900	EFPC OF99	RELEASE	FOAM		
10/24/91	PM1213	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH1250, BUT VERIFIED NO SHEEN.
10/24/91	PM1213	EFPC OF109	RELEASE	FOAM		END RESPONDED PH1250, BUT DID NOT VERIFY FOAM.
10/24/91	PM1213	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH1250 AND VERIFIED SHEEN.
10/24/91	PM140	SE 9201-2	SPILL	HYDRAULIC FLUID	8 oz	END RESPONDED PH1250, BUT DID NOT VERIFY FOAM.
10/23/91	AM1030	SE 9623	SPILL	HYDRAULIC FLUID	1 gal	END RESPONDED AM1030. HYDRAULIC FLUID LEAKED ONTO PAVEMENT.
10/23/91	AM825	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM840 AND VERIFIED OILY SHEEN.
10/23/91	AM825	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM840, BUT COULD NOT VERIFY SHEEN.
10/22/91	AM925	EFPC OF109	RELEASE	FOAM		END RESPONDED AND VERIFIED FOAM.
10/22/91	AM925	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
10/22/91	AM925	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
10/18/91	AM850	EFPC OF109	RELEASE	SOAPY		END RESPONDED, BUT DID NOT VERIFY SOAPY DISCHARGE.
10/18/91	AM850	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
10/15/91	PM125	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH210 AND VERIFIED OILY SHEEN.
10/15/91	PM125	EFPC OF109	RELEASE	SOAPY		END RESPONDED PH210, BUT COULD NOT VERIFY SOAPY DISCHARGE.
10/15/91	PM125	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH210 AND VERIFIED OILY SHEEN.
10/14/91	PM230	9769	SPILL	HAZARDOUS WASTE	100 GALS	
10/14/91	AM930	EFPC N/SP	RELEASE, EXCOM	FOAM		END RESPONDED AM945 AND VERIFIED FOAM.
10/10/91	PM430	9201-5	RELEASE	PROCESS WATER		
10/09/91	PM215	9201-5	RELEASE	TRIMSOL	< 1 oz	END RESPONDED PH230. TANKER TRUCK LEAKING.
10/03/91	PM255	EFPC OF14	RELEASE	FOAM		END RESPONDED PH305, BUT OBSERVED NO FOAM.
10/03/91	PM255	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH305 AND OBSERVED LIGHT OILY SHEEN.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
10/03/91	PM255	EFPC OF135	RELEASE			END RESPONDED PM305.
10/02/91	AM830	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, WMT PRICL		END RESPONDED AM850 AND VERIFIED OILY SHEEN.
10/01/91	PM230	EFPC N/SP	RELEASE	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
10/01/91	AM947	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, WMT PRICL		END RESPONDED AM1015 AND VERIFIED OILY SHEEN AND WHITE PARTICLES.
10/01/91	AM947	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1015 AND VERIFIED OILY SHEEN.
10/01/91	AM947	EFPC OF14	RELEASE	FOAM		END RESPONDED AM1015, BUT VERIFIED NO FOAM.
10/30/91	PM215	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AND VERIFIED OILY SHEEN.
10/30/91	AM1010	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END DID NOT RESPOND.
10/30/91	AM915	EFPC OF14	RELEASE	FOAM		END RESPONDED AND OBSERVED FOAM COMING FROM OUTFALL.
10/30/91	AM915	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AND OBSERVED SLIGHT SHEEN.
10/30/91	PM215	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, WMT PRICL		END RESPONDED PM215 AND VERIFIED WHITE PARTICLES AND OILY SHEEN.
10/28/91	PM433	KERR H Q	SPILL	DI ETHYLENE GLYCOL	40 gals	END RESPONDED PM435. SAMPLES REQUESTED.
10/26/91	AM900	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1025, BUT OBSERVED NO OILY SHEEN.
10/26/91	AM900	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1025 AND OBSERVED SHEEN AT OUTFALL.
10/26/91	AM900	EFPC OF109	RELEASE	FOAM		END RESPONDED AM1025, BUT OBSERVED NO FOAM.
10/26/91	AM900	EFPC OF14	RELEASE	FOAM		END RESPONDED AM1025, BUT OBSERVED NO SIGNS OF FOAM.
10/25/91	AM1008	EFPC OF14	RELEASE	SOAPY SUDS		END RESPONDED AM1130 AND VERIFIED SOAPY SUDS.
10/25/91	PM300	EFPC OF128	RELEASE	FOAM		END RESPONDED PM310 AND OBSERVED FROTH IN ROCKS AROUND OUTFALL 128.
10/25/91	AM1008	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1130. NO OILY SHEEN VERIFIED.
10/25/91	AM1008	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM1130. VERIFIED ONLY TRACE AMOUNTS OF BUBBLES.
10/25/91	AM1008	EFPC OF67	RELEASE, EXCON	OILY SHEEN, MUD		END RESPONDED AM1130 AND VERIFIED OILY SHEEN, BUT NO MUD.
10/23/91	PM225	EFPC OF14	RELEASE	SOAPY SUDS		END RESPONDED PM BUT OBSERVED NO FOAM.
10/23/91	AM1030	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1035 AND OBSERVED SLIGHT OIL SHEEN.
10/20/91	AM930	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM947 AND VERIFIED VERY SLIGHT SHEEN.
10/20/91	AM930	EFPC OF109	RELEASE	SOAPY		END RESPONDED AM938, BUT COULD NOT VERIFY SOAPY CONDITION.
10/19/91	AM830	EFPC OF108	RELEASE	FOAM		END RESPONDED AM915 AND OBSERVED NO FOAM.
10/19/91	AM830	EFPC OF14	RELEASE	FOAM		END RESPONDED AM915 AND OBSERVED NO FOAM.
10/19/91	AM830	EFPC OF 67	RELEASE EXCON	OILY SHEEN		END RESPONDED AM915 AND VERIFIED OILY SHEEN.
10/17/91	AM1130	9720-B	SPILL	PVC CEMENT	< 1 oz	END RESPONDED AM1140. CLEANUP BY WTSO.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
09/17/91	PM300	EFPC OF71	RELEASE	FOAM		END RESPONDED PH310 AND OBSERVED ONLY TRACE AMOUNTS OF FOAM ON GRASS AROUND OUTFALL.
09/17/91	AM910	E POST 17	SPILL	HYDRAULIC OIL	5 gal	END RESPONDED AM915. HYDRAULIC LINE ON STREET SWEEPER RUPTURED AND LEAKED ONTO PAVEMENT.
09/17/91	PM145	9202	SPILL	DEPLETED U238 POWDER	few oz	END RESPONDED PH150.
09/16/91	AM1110	9720-8	SPILL	LITHIUM CHLORIDE	1 oz	END RESPONDED AM1120. TWO PLASTIC BOTTLES OF LITHIUM CHLORIDE RUPTURED BECAUSE OF OLD AGE.
09/13/91	AM900	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH155 AND VERIFIED OILY SHEEN.
09/13/91	AM900	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN, WHT PRCL		END RESPONDED PH155 AND VERIFIED OILY SHEEN AND WHITE PARTICLES.
09/12/91	PM1215	9204-4	SPILL	COPPER SULFATE SOL	70 gals	END RESPONDED PH1230.
09/12/91	AM943	EFPC N/SP	RELEASE, EXCOM	WHT PRCL		END RESPONDED AM952 AND VERIFIED WHITE PARTICLES SCATTERED AT N/S PIPES.
09/12/91	PM130	9204-4	SPILL	COPPER SULFATE SOL	-100 gals	END RESPONDED PH135 AND WTSO REMOVED CONTAMINATED SOIL WITH SHOVELS.
09/12/91	AM943	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM952 AND VERIFIED HEAVY SHEEN.
09/12/91	PM115	EFPC N/SP	RELEASE, EXCOM	WHT PRCL		END RESPONDED PH125 AND VERIFIED WHITE PARTICLES.
09/11/91	AM1110	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN, WHT PRCL		END RESPONDED PH1245 AND VERIFIED OILY SHEEN AND WHITE PARTICLES.
09/11/91	AM1110	EFPC OF113	RELEASE	WHT PRCL	1 pint	END RESPONDED PH1245 AND VERIFIED WHITE PARTICLES.
09/11/91	AM1159	NTH 9720-8	SPILL	OIL		END RESPONDED PH1215. CUSHMAN LEAKED OIL AND WTSO CALLED TO APPLY ABSORBENT MATERIAL.
09/11/91	AM1110	EFPC OF67	RELEASE, EXCOM	OILY SHEEN	1 pint	END RESPONDED PH1245 AND VERIFIED SHEEN.
09/11/91	PM100	NTH 9404-3	EXCOM	CREOSOTE		END RESPONDED PH100. CREOSOTE SEEPING OUT OF OLD SAVED OFF TELEPHONE POLE. WTSO APPLIED ABSORBOL.
09/10/91	AM900	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END DID NOT RESPOND TO VERIFY SHEEN.
09/10/91	AM900	EFPC OF113	RELEASE	WHT PRCL		END DID NOT RESPOND TO VERIFY WHITE PARTICLES.
09/10/91	AM900	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END DID NOT RESPOND TO VERIFY SHEEN.
09/09/91	AM1030	W 9720-8	SPILL	PCB OIL (24PPM)	2 gals	END RESPONDED AM1032.
09/09/91	AM1030	W 9720-8	SPILL	PCB OIL/WATER ()	< 1 gal	END RESPONDED AM1032. VALVE FAILURE ON POLYTANK CAUSED INCIDENT.
09/09/91	PM1245	EFPC OF109	RELEASE	RHODAMINE DYE		END DID NOT RESPOND. RED DYE WAS FLOWING OUT OF OF109. PSS HAD NOT BEEN CONTACTED.
09/07/91	AM245	NE 9767-1	SPILL	OIL	6-8 gals	END RESPONDED ON SATURDAY MORNING, 9/7/91, AT AM1150 TO AN UNRELATED INCIDENT AND CHECKED ON THE PROGRESS OF THIS SPILL.
09/07/91	AM1030	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED ON SATURDAY MORNING, 9/7/91, BUT COULD NOT VERIFY OILY SHEEN.
09/06/91	PM1240	N 9201-5	EXCOM	MERCURY	13 lbs	END RESPONDED PH1245. WASTE MANAGEMENT DIVISION REMOVED MERCURY. TENA, NRC, TDHE, LEPC NOTIFIED.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
09/06/91	PM105	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		THIS WAS ORIGINALLY OBSERVED ON 8/29/91.
09/06/91	PM105	EFPC N/SP	RELEASE, EXCOM	WHT PRCL		END RESPONDED PH130 AND OBSERVED OILY SHEEN.
09/06/91	PM105	EFPC OF14	RELEASE	FOAM		END RESPONDED PH130 AND VERIFIED WHITE PARTICLES.
09/06/91	AM030	EFPC OF109	RELEASE	FOAM		END RESPONDED PH130. DID NOT VERIFY SUDS.
09/05/91	AM030					END RESPONDED AM045 AND VERIFIED MODERATE AMOUNT OF SUDS. NO SAMPLE REQUESTED.
09/05/91	AM030	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM045 AND VERIFIED OILY SHEEN.
09/05/91	PM200	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END DID NOT RESPOND.
09/05/91	AM030	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM045 AND VERIFIED OILY SHEEN.
09/05/91	PM200	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END DID NOT RESPOND.
09/04/91	PM1230	9203 RM 42	EXCOM	MERCURY	< 1 lb	END RESPONDED PH1235 AND VERIFIED PRESENCE OF MERCURY.
09/04/91	PM1230	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH1245 AND VERIFIED EXTREMELY LIGHT SHEEN.
09/04/91	PM215	STH 9720-8	EXCOM	RED POWDER		END RESPONDED PH225 AND VERIFIED PRESENCE OF POWDER.
09/03/91	PM1220	EFPC OF14	RELEASE	FOAM		END RESPONDED PH1230 BUT WAS UNABLE TO VERIFY FOAM DISCHARGE.
09/03/91	AM030	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM035 AND OBSERVED VERY, VERY, VERY SLIGHT SHEEN.
09/03/91	AM030	EFPC OF128	RELEASE	FOAM		END RESPONDED AM 935 AND OBSERVED NO FOAM.
09/03/91	PM1220	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PH1230 BUT WAS UNABLE TO VERIFY OILY SHEEN.
08/29/91	PM100	N 9201-5	EXCOM	MERCURY	unknown	END RESPONDED PH115 AND OBSERVED MERCURY IN STORM SEWER. SEE ENTRY ON 9/6/91 FOR R0 DETERMINATION.
08/28/91	AM034	EFPC OF14	RELEASE	FOAM		END RESPONDED AM050 AND OBSERVED LESS THAN TRACE AMOUNT OF SUDS.
08/28/91	AM034	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM050 AND VERIFIED OILY SHEEN.
08/27/91	AM030	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM045 AND OBSERVED OILY SHEEN. UTILITIES CONTACTED TO REMOVE ALL HAY FROM THE OUTFALL AND SURROUNDING AREA.
08/26/91	AM005	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM 820 AND OBSERVED SLIGHT OILY SHEEN. BELIEVED TO ORIGINATE FROM EXISTING HAY BALE. HAY BALE WILL BE CHANGED OUT.
08/26/91	AM005	EFPC OF135	RELEASE	SOAPY		END RESPONDED AM020 AND OBSERVED SUDS. HOWEVER, NOT DETERMINED WHETHER DUE TO AERATION OR SOAPY DISCHARGE.
08/26/91	AM005	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN, WHT PRCL		END RESPONDED AM020 AND CONFIRMED OILY SHEEN.
08/23/91	PM305	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN, WHT PRCL		END RESPONDED PH330 AND OBSERVED OILY SHEEN AND WHITE PARTICLES. SAMPLE REQUESTED.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
08/22/91	PM145	EFPC OF71	RELEASE	FOAM		END RESPONDED PM240 AND OBSERVED HEAVY HEAD OF FOAM AROUND OF71. HOWEVER, NO FOAM BEING DISCHARGED.
08/22/91	PM145	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, WMT PARTCL		END RESPONDED PM240. OILY SHEEN NOT OBSERVED, BUT PARTICLES EVIDENT.
08/21/91	AM750	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END INITIATED OBSERVATION WITHOUT NOTIFICATION BY PSS.
08/20/91	PM310	SE 9206	RELEASE	RAINWATER		END RESPONDED PM320. LEAK FROM TEMPORARY DIKE.
08/19/91	PM130	EFPC ST17	RELEASE	FOAM		END RESPONDED PM145 AND OBSERVED LESS THAN TRACE AMOUNTS. PH READING OF 8.7 TAKEN AT SITE CONFIRMED BY LAB.
08/19/91	AM907	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1020 AND VERIFIED OILY SHEEN. OILY SHEEN MAY NOT BE ORIGINATING FROM SOURCE AS PREVIOUSLY IDENTIFIED ON OIL SHEEN REPORT OF 8/13/91.
08/19/91	AM907	EFPC N/SP	RELEASE, EXCON	WMT PARTCL		END RESPONDED AM1020 AND CONFIRMED OILY SHEEN AND WHITE PARTICLES. OIL "SPLOTCHES" APPEARED TO BE COMING FROM THE WHITE PARTICLES.
08/16/91	AM850	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM900. VERY SLIGHT SHEEN NOTICED.
08/16/91	PM330	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED PM345. OILY SHEEN VERIFIED.
08/16/91	PM330	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED PM345. OIL SHEEN VERIFIED.
08/16/91	AM850	EFPC OF109	RELEASE	MILKY DISCH		END RESPONDED AM905. MILKY DISCHARGE COULD NOT BE CONFIRMED.
08/15/91		EFPC N/SP	RELEASE, EXCON	OILY SHEEN		E-MAIL FROM GARY WHEELER TO END ON 8/15/91. NO CONFIRMATION.
08/15/91		EFPC OF67	RELEASE, EXCON	OILY SHEEN		E-MAIL FROM GARY WHEELER ON 8/15/91 TO END. NO CONFIRMATION.
08/14/91	AM945	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1005 AND VERIFIED SHEEN.
08/14/91	AM945	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1005 AND VERIFIED OILY SHEEN.
08/13/91	AM945	ME 9211	RELEASE	SEALANT	< 1 gal	END RESPONDED AM1000 AND VERIFIED THAT SEALANT WAS CONTINUING TO LEAK AS FIRST REPORTED ON 8/7/91.
08/12/91	AM857	EFPC OF109	RELEASE	FOAM		END RESPONDED AM937 AND OBSERVED NO FOAM.
08/09/91	AM948	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM1010 AND VERIFIED OILY SHEEN. PART OF CONTINUING RELEASE.
08/09/91	PM150	9720-9	SPILL	ANTIFREEZE		END RESPONDED PM205. ANTIFREEZE LEAKED FROM TRUCK. ABSORBOL USED TO ABSORB MATERIAL.
08/08/91	AM845	EFPC OF55	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM 925 AND VERIFIED OILY SHEEN WHICH WAS A CONTINUATION OF A PREVIOUSLY EXISTING RELEASE.
08/08/91	AM845	EFPC OF67	RELEASE, EXCON	OILY SHEEN		END RESPONDED AM930 AND VERIFIED OILY SHEEN.

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
08/01/91	AM845	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM935 AND VERIFIED OILY SHEEN.
08/01/91	AM845	DIVR CHAN	RELEASE	OILY SHEEN		END RESPONDED AM940 AND VERIFIED OILY SHEEN. UTSD /UTILITIES NOTIFIED TO CLEAN OUT O/M SEPARATOR.
08/01/91	AM830	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM1015 AND VERIFIED OILY SHEEN.
08/01/91	AM830	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM1015 AND VERIFIED OILY SHEEN.
08/07/91	AM850	EFPC OF55	RELEASE	OILY SHEEN		END RESPONDED AM900 AND VERIFIED OILY SHEEN.
08/07/91	AM1105	WE 9211	EXCOM	SEALANT	< 1 quart	END RESPONDED AM1115. PUTTY TYPE SEALANT LEAKED DOWN CONDUIT ON SIDE OF PHONE POLE ONTO PAVEMENT. UTSD RESPONDED WITH SPRAY DETERGENT AND ABSORBENT DIAPERS. SAMPLE REQUESTED.
08/06/91	PM100	E 9201-3	SPILL	HYDRAULIC FLUID	1 gal	END RESPONDED PM100. HYDRAULIC LINE ON DUMPSTER TRUCK RUPTURED AND SPILLED FLUID TO PAVEMENT. ABSORBENT POWDER ON SPILL AREA AND SHOVELED UP.
08/06/91	AM830	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN, WHT PRCL		END RESPONDED AM845 AND OBSERVED OIL SHEEN VISIBLE ALONG WITH WHITE FLOATING PARTICLES. SAMPLES WERE REQUESTED AND SENT TO NORMA WILLIAMS.
08/01/91	PM255	9723-18	SPILL	HYDRAULIC OIL	.5 pint	END RESPONDED OVER TELEPHONE. SPILL OCCURRED NORTH OF 9723-18. 1/2 PINT TRANSMISSION OIL LEAKED OUT OF BACKHOE. OIL SOAKED SOIL WAS SHOVELED UP AND DISPOSED OF BY UTSD.
08/01/91	AM	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		CONTINUATION OF PREVIOUSLY IDENTIFIED OIL SHEEN.
07/31/91	AM820	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED AM850. SHEEN STILL EVIDENT-CONTINUATION OF YESTERDAY'S SHEEN. SAMPLES REQUESTED, TEST TO INCLUDE BTX AND VOLATILES.
07/31/91	AM820	EFPC OF49	RELEASE	FOAM		END RESPONDED AM850. NO FOAM WAS OBSERVED.
07/31/91	PM225	EFPC N/SP	RELEASE, EXCOM	OILY SHEEN		END RESPONDED PM235. LIGHT OIL SHEEN BEING DISCHARGED.
07/30/91	AM1047	EFPC OF67	RELEASE, EXCOM	OILY SHEEN		END RESPONDED TO NOTIFICATION AM1117. OIL OBSERVED AND CONFIRMED.
07/30/91	AM1047	EFPC N/SP	RELEASE, EXCOM	WHT PRCL		END RESPONDED TO NOTIFICATION AM1100. WHITE PARTICLES VERIFIED.
07/29/91	AM822	EFPC N/SP	RELEASE, EXCOM	WHT PRCL		END RESPONDED TO NOTIFICATION AM835. NO SIGNIFICANT AMOUNT OF WHITE PARTICLES WERE NOTED.
07/26/91	AM245	STN 9720-6	RELEASE	LATEX PAINT	puddle	END RESPONDED TO NOTIFICATION PM300. RED PAINT IN DUMPSTER MIXED WITH RAIN AND RAN OUT THROUGH WEEPHOLE IN BOTTOM. NONE ENTERED STORM SEWER.
07/26/91	AM1110	EFPC OF71	RELEASE	SOAPY DISCH		END RESPONDED TO NOTIFICATION AM1125. NO SOAP SLUDS CONFIRMED.

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07/26/91	AM1110	EFPC N/SP	RELEASE, EXCON	UNIT PRICL		END RESPONDED TO NOTIFICATION AM1125. SLIGHT DISCHARGE OF WHITE PARTICLES WAS CONFIRMED.
07/26/91	AM946	EFPC N/SP	RELEASE, EXCON	FOAM, UNIT PRICL		END RESPONDED TO NOTIFICATION AM1000. ONLY WHITE PARTICLES CONFIRMED.
07/23/91	AM1032	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, UNIT PRICL		END RESPONDED TO NOTIFICATION AM1045. WHITE FLOATING PARTICLES DISCHARGED. SLIGHT OIL SHEEN ALSO OBSERVED.
07/22/91	AM950	EFPC OF55	RELEASE	OILY SHEEN		END RESPONDED TO PSS CALL AT AM1015. SHEEN EMANATING PERIODICALLY FROM OUTFALL. OUTFALL IS ASSOCIATED WITH BLDG 9201-3. CATEGORIZED AS CATEGORY 11 OCCURRENCE. WTSO NOTIFIED BY PSS TO INSTALL BOOM AND DIAPERS. NRC AND TEMA NOTIFIED.
07/18/91	PM130	EFPC OF109	RELEASE	FOAM		END OBSERVED LESS THAN TRACE AMOUNT OF BUBBLES BEING DISCHARGED AT TIME OF RESPONSE PM130.
07/18/91	PM130	EFPC OF14	RELEASE	FOAM		END OBSERVED LESS THAN TRACE AMOUNT OF FOAM DISCHARGED FROM OUTFALL.
07/18/91	PM130	EFPC OF67	RELEASE, EXCON	FOAM		END OBSERVED LESS THAN TRACE AMOUNT OF FOAM BEING DISCHARGED FROM OUTFALL.
07/17/91	AM1130	EFPC OF109	RELEASE	FOAM		END OBSERVED NO FOAM AT TIME OF RESPONSE AM1145.
07/17/91	AM820	EFPC 9767	RELEASE, EXCON	OILY SHEEN		THE CONTINUING OIL SHEEN OCCURRING NORTH OF BUILDING 9767-8 WAS OBSERVED WHILE RESPONDING TO FOAM OBSERVATION AT OF71.
07/17/91	AM820	EFPC OF71	RELEASE	FOAM		END DID NOT OBSERVE FOAM AT TIME OF RESPONSE AM820. SINCE EMO TECHNICIAN OBSERVED FOAM, THIS WAS REPORTED AS AN HPDES VIOLATION.
07/17/91	AM1130	EFPC N/SP	RELEASE, EXCON	OILY SHEEN		END OBSERVED NO OIL SHEEN AT TIME OF RESPONSE AM1145.
07/17/91	AM1130	EFPC OF71	RELEASE	FOAM		END OBSERVED NO FOAM AT TIME OF RESPONSE AM1145.
07/12/91	PM215	E 9215	SPILL	WASTE OIL QUINTOLUBR	8 fl oz	END RESPONDED PM215. 4 DRUMS RCRA WASTE OIL BEING TRANSPORTED. NO CONTAMINATION TO SURROUNDING ENVIRONMENT OTHER THAN PAVEMENT.
07/11/91	AM945	EFPC N/SP	RELEASE, EXCON	OILY SHEEN, UNIT PRICL		END DID NOT OBSERVE OIL AT TIME OF RESPONSE.
07/10/91	AM845	E 9616-7	SPILL	METHYL ETHYL KETONE	< 1 gal	END RESPONDED AM900. TRUCK WITH 600 GALS RCRA D035 WASTEWATER IN POLYTANK PARKED ON SLOPED. < 1 GAL LEAKED OUT.
07/10/91	AM955	WITH 9720-8	SPILL	DIESEL FUEL	.5 gal	END RESPONDED AT AM955. TRUCK PARKED ON SLOPED PAVEMENT SPILLED FUEL FROM FUEL TANK.
07/10/91	AM1030	EFPC N/SP	RELEASE, EXCON	UNIT PRICL		END OBSERVED NO ACTIVE DISCHARGE AT TIME OF RESPONSE. LAB ANALYSIS TAKEN ON 7/1/91 PENDING.
07/03/91	AM825	EFPC OF109	RELEASE	SOAPY, MILKY DSCMG		END DID NOT OBSERVE DISCHARGE AT TIME OF RESPONSE

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
07/01/91	PM200	EFPC OF 109	RELEASE	MILKY DSCNG		AM835. END DID NOT OBSERVE DISCHARGE AT TIME OF RESPONSE PM210.
07/01/91	1210	SOUTH OF BUILDING 9711-5	SPILL	SODIUM HYPOCHLORITE	1 1/2 GALLONS	
07/01/91	PM1210	EFPC N/SP	RELEASE, EXCON	UNIT PRTCL		PARTICULATE MATTER SAMPLED.
07/01/91	PM1210	STN 9711-5	SPILL	SODIUM HYPOCHLORITE		SPILL OCCURRED IN BACK OF TRUCK. NO HARM TO ENVIRONMENT.
06/28/91	1110	WEST OF BUILDING 9206	SPILL	GASOLINE	8 OUNCES	
06/27/91	1000	WEST OF BUILDING 9404-5	SPILL	OIL-BASED PAINT	1 GALLON	
06/27/91	0755	BUILDING 9201-5 EAST SHOP	SPILL	FLUID FROM LIGHT BALLAST (390,000 PPM PCB)	1 OUNCE	
06/27/91	1250	BUILDING 9720-8	SPILL	DRY BATTERY ACID	1/4 POUND	
06/21/91	1700	OD-9 WASTE OIL/SOLVENT STORAGE FACILITY	SPILL	RCRA LISTED WASTE (F-006)	10 POUNDS	
06/18/91	1400	WEST OF BUILDING 9720-6	SPILL	HYDRAULIC OIL	1 GALLON	
06/14/91	1330	BUILDING 9712 (Y-12 GARAGE)	SPILL	HYDRAULIC OIL	1/2 GALLON	
06/13/91	1430	BUILDING 9212 - E-WING	SPILL	VACUUM PUMP OIL	15-20 GALLONS	
06/11/91	1155	EAST END OF PLANT NEAR FIRING RANGE	SPILL	POTABLE WATER	200 GALLONS	
06/10/91	1510	Y-12 GASOLINE STATION	SPILL	TRANSMISSION FLUID	1/2 GALLON	
06/06/91	0945	BUILDING 9712	RELEASE	POTABLE WATER AND MUD	5 GALLONS	
06/03/91	1330	BUILDING 9201-5	RELEASE	RAINWATER	25 GALLONS	
05/31/91	0825	BUILDING 9711-5	SPILL	DIESEL FUEL	2 GALLONS	
05/31/91	0750	BUILDING 9202 ROOM 182	SPILL	MERCURY	<1 OUNCE	
05/30/91	1545	CHESTNUT RIDGE REPEATER STATION	RELEASE	GASOLINE	<1 QUART	
05/30/91	0920	BUILDING 9720-1	SPILL	HYDRAULIC OIL	1/2 GALLON	
05/29/91	1025	BUILDING 9212	SPILL	LIQUID FROM RAD-CONTAMINATED DUMPSTER	1 PINT	
05/27/91	0720	BUILDING 9204-3 HIGH BAY AREA	SPILL	NITRIC ACID	1 PINT	
05/27/91	0330	BUILDING 9204-4	SPILL	CHILLED WATER	275 GALLONS	
05/24/91	1020	Y-12 SALVAGE YARD	SPILL	HYDRAULIC OIL	1 PINT	
05/23/91	0900	WEST OF BUILDING 9616-7	SPILL	KEROSENE	50 GALLONS	
05/23/91	1110	WEST END LAYDOWN YARD	RELEASE	PROPANE	100 POUNDS	
05/23/91	1605	BUILDING 9720-5	SPILL	RAW SEWAGE	20 GALLONS	
05/22/91	0835	EAST OF BUILDING 9201-1	SPILL	HYDRAULIC OIL	1 GALLON	
05/20/91	0800	NPDES OUTFALL 34	RELEASE	OIL	<1 GALLON	
05/17/91	0950	EAST OF BUILDING 9710-2	SPILL	PROPYLENE GLYCOL	20 GALLONS	
05/17/91	1015	BUILDING 9206	RELEASE	COOLING WATER	2000 GALLONS	
05/15/91	1620	NORTH OF BUILDING 9720-8	SPILL	MOPWATER AND FLOOR WAX	2-3 GALLONS	

COMMENTS

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
05/16/91	1500	BUILDING 9709	SPILL	MERCURY	<1 OUNCE	
05/10/91	1030	BUILDING 9767-1	RELEASE	FREON 11 (TRICHLOROFLUOROMETHANE)	1300 POUNDS	
05/08/91	0910	SOUTH OF BUILDING 9720-3	SPILL	URANIUM OXIDE	<1 OUNCE	
05/07/91	1145	BUILDING 9201-5 DOCK 169	SPILL	XYLENE	1 PINT	
05/06/91	0900	BUILDING 9720-6 ROOM 110	RELEASE	NITRIC ACID	250 ML	
05/06/91	1525	CARPENTER SHOP SOUTH OF BUILDING 9202	SPILL	OIL USED IN THE MANUFACTURE OF SWEEPING COMPOUNDS	1 PINT	
05/01/91	1245	SOUTH OF BUILDING 9401-2	SPILL	STEAM CONDENSATE CONTAMINATED WITH METALS	-20 GALLONS	
04/26/91	1050	NORTH OF BUILDING 9207 - DOCK 78	SPILL	MERCURY	200-300 GRAMS	
04/25/91	0930	BUILDING 9720-8 RECEIVING AREA	SPILL	SURGICAL SOAP (28-33% ALCOHOL)	1 OUNCE	
04/25/91	1155	NORTH OF BUILDING 9202 - PORTAL 6	SPILL	OIL (RESEMBLED LIGHT MACHINE OIL)	8 OUNCES	
04/24/91	1510	EAST OF BUILDING 9725	RELEASE	OIL	1/2 GALLON	
04/22/91	1345	BUILDING 9204-2E - MPLE AREA	SPILL	FLOOR WAX	2 GALLONS	
04/22/91	0745	BUILDING 9202 - WELD TEST SHOP	SPILL	TOWER WATER	10-20 GALLONS	
04/19/91	1415	WEST OF BUILDING 9737	SPILL	DIESEL FUEL	2 GALLONS	
04/15/91	1515	NORTH OF BUILDING 9720-6	SPILL	ANTIFREEZE	1/2 GALLON	
04/13/91	1230	MPDES OUTFALL 58	RELEASE	OIL	UNKNOWN	
04/10/91	1005	BUILDING 9720-8	SPILL	ECOLITE (USED IN SCINTILLATION OF TRITIUM)	1 OUNCE	
04/10/91		NORTHEAST OF BUILDING 9204-2	SPILL	FLOOR WAX	<1 GALLON	
04/08/91	0900	NORTH PORTAL PARKING LOT	SPILL	ANTIFREEZE	1/2 GALLON	
04/08/91	0845	EAST OF BUILDING 9207 - STATION 179	SPILL	TRANSFORMER OIL	15 GALLONS	
04/04/91	0915	NORTH OF BUILDING 9206	SPILL	MOTOR OIL	2 QUARTS	
04/03/91	1430	EAST OF BUILDING 9711-5	SPILL	HYDRAULIC OIL	1 GALLON	
04/01/91	1400	EAST OF BUILDING 9207 - STATION 177	SPILL	TRANSFORMER OIL	12 GALLONS	
04/01/91	1210	BUILDING 9202	SPILL	PROCESS WATER	40-50 GALLONS	
03/29/91	1555	SOUTH OF BUILDING 9204-2	SPILL	SODIUM HYPOCHLORITE	100 GALLONS	
03/27/91	1100	BUILDING 9731	SPILL	MERCURY	<1 OUNCE	
03/26/91	1830	SOUTH OF BUILDING 9720-8	SPILL	OIL	1 GALLON	
03/26/91	1530	BUILDING 9816	SPILL	WATER FROM SEVERED DRAIN LINE	5 GALLONS	
03/26/91	1830	SOUTH OF BUILDING 9720-8	SPILL	HYDRAULIC OIL	1 GALLON	
03/26/91	1400	EFPC	EXISTING	MERCURY	<1 OUNCE	
03/26/91	1830	SALVAGE YARD	SPILL	OIL FROM HEAT EXCHANGER (NO PCBS)	10 GALLONS	

COMMENTS

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
03/25/91	1550	BUILDING 9727-4	SPILL	OIL FROM A COMPRESSOR	<1 GALLON	
03/25/91	1500	PORTAL 13	SPILL	HYDRAULIC OIL	1 QUART	
03/25/91	1530	BUILDING 9206	SPILL	URANYL NITRATE	1 PINT	
03/22/91	1445	EAST OF PORTAL 13	SPILL	POTABLE WATER	>100 GALLONS	
03/21/91	1330	BUILDING 9720-8	SPILL	PAINT	<1/2 GALLON	
03/21/91	1030	BUILDING 9208, ROOM 120	SPILL	PCB FLUID FROM LIGHT BALLAST (13000 PPM PCB)	1 TEASPOON	
03/20/91	1455	WEST OF BUILDING 9737	SPILL	DIESEL FUEL	2-3 GALLONS	
03/18/91	0800	BUILDING 9202	SPILL	BEO CONTAMINATED WATER	UNKNOWN	
03/18/91	1000	PORTAL 9	SPILL	ANTIFREEZE	2 GALLONS	
03/18/91	1440	PORTAL 9	SPILL	ANTIFREEZE	2 GALLONS	
03/14/91	0705	BUILDING 9998 N-1 FOUNDRY	SPILL	HYDRAULIC OIL	10 GALLONS	
03/12/91	0810	NORTHEAST OF BUILDING 9103	SPILL	ANTIFREEZE	1 GALLON	
03/12/91	1015	SOUTH OF PORTAL 33	SPILL	HYDRAULIC OIL	30 GALLONS	
03/12/91	1000	COOLING TOWER 9409-26	RELEASE	COOLING WATER	126,000 GAL	
03/12/91	1035	BUILDING 9202	SPILL	WATER FROM HEATER UNIT	100-200 GAL	
03/08/91	1230	KERR HOLLOW QUARRY	RELEASE	UNKNOWN - BELIEVED TO BE A WATER REACTIVE METAL	UNKNOWN	
03/03/91	1230	KERR HOLLOW QUARRY	RELEASE	CHLORINE	50 POUNDS	
02/27/91	1015	BUILDING 9401-4	SPILL	HYDRAULIC OIL	2 GALLONS	
02/21/91	1505	BUILDING 9404-7	SPILL	2-OIL (14 PPM PCB)	1/2 PINT	
02/18/91	0835	BUILDING 9418-4	SPILL	2-OIL (14 PPM PCB)	15 GALLONS	
02/06/91	1510	BUILDING 9204-2	SPILL	LITHIUM CHLORIDE SOLUTION	40 GALLONS	
01/31/91	1000	BUILDING 9215 O-WING AREA	SPILL	HYDRAULIC OIL	50 GAL	
01/30/91		BUILDING 9201-5 EAST SHOP	SPILL	BATTERY ACID	2 PINTS	
01/30/91	0940	BUILDING 9204-1 ROOM 102	SPILL	MERCURY	<1 OUNCE	
01/24/91	1800	STEAM PLANT	RELEASE	BOTTOM ASH CONTAINING AS, P, NA, AND CL	UNKNOWN	
01/23/91	0530	WATER LINE NEAR BUILDING 9404-9	SPILL	WATER FROM SPRINKLER SYSTEM	UNKNOWN	
01/21/91	1515	BUILDING 9201-5 EAST SHOP	SPILL	BATTERY ACID	2 QUARTS	
01/19/91	0926	KERR HOLLOW QUARRY	RELEASE	OIL	<1 GAL	
01/19/91	1640	BUILDING 9204-2	SPILL	LITHIUM CHLORIDE	25 GAL	
01/13/91	1325	KERR HOLLOW QUARRY	SPILL	HYDRAULIC OIL	1 GAL	
01/11/91	0905	BUILDING 9113	SPILL	BATTERY ACID	2 TABLESPOONS	
01/10/91	1330	SOUTH OF BUILDING 9710-3	SPILL	MOTOR OIL	1 QUART	
01/09/91	1210	SOUTH OF FLY ASH HANDLING FACILITY	SPILL	GEAR OIL	2 QUARTS	
01/02/91	1300	WEST OF BUILDING 9818	SPILL	RINSEWATER	1 GAL	
12/31/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
12/28/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/27/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/26/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/21/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/20/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/19/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/18/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/17/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/15/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/13/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/12/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/12/90	0715	SOUTH OF BUILDING 9204-1	SPILL	MOTOR OIL	4 QUARTS	
12/11/90	1520	NORTH OF BUILDING 9720-6	RELEASE	RAW SEWAGE	<10 GAL	
12/11/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/10/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/07/90		UEFPC (N/S PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
12/06/90	1900	BUILDING 9201-5W	SPILL	ISOPROPYL ALCOHOL	5 GAL	
12/04/90	1645	BUILDING 9204-1	SPILL	CALCIUM-MAGNESIUM ACETATE	2 GAL	
11/28/90	1455	SOUTH OF BUILDING 9204-3	SPILL	MINERAL OIL FROM TRANSFORMER (<10 PPM PCB)	<2 GAL	
11/20/90	00000	BUILDING 9733-3 ROOM 318	SPILL	OIL FROM LIGHT BALLAST (780,000 PPM PCB)	<8 OUNCES	
11/16/90	1215	WEST OF BUILDING 9720-6	SPILL	HYDRAULIC OIL	16 OUNCES	
11/15/90	1315	UEFPC (NPDES OUTFALL 71)	RELEASE	FOAM	<1 CUBIC FOOT	
11/15/90	1110	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
11/15/90	1230	NORTH PORTAL PARKING LOT	SPILL	GASOLINE	1 GAL	
11/15/90	0930	WEST OF BUILDING 9723-25	SPILL	GASOLINE	1 GAL	
11/14/90	1650	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
11/14/90	0830	NORTHEAST CORNER OF BUILDING 9206	SPILL	DEPLETED URANYL NITRATE	2 GAL	
11/13/90	1530	BUILDING 9204-3 BASEMENT	SPILL	WATER FROM FIRE SPRINKLER SYSTEM	200-300 GAL	
11/12/90	1545	LINE YARD EAST OF BUILDING 9204-1	SPILL	ARALDITE HARDENER	1/2 PINT	
11/12/90	1500	EAST OF BUILDING 9204-1	SPILL	EPOXY HARDENER	8 OUNCES	
11/12/90	1520	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
11/09/90	1425	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
11/05/90	0900	EAST OF BUILDING 9204-2	SPILL	HYDRAULIC OIL	<1/2 GAL	
11/01/90	1800	SOIL PILE ON NEAR WEST PATROL ROAD	RELEASE	MERCURY	200-300 LBS	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
10/23/90	1000	BEAR CREEK BURIAL GROUNDS - TRIBUTARY 8	RELEASE	UNKNOWN - CREATED A FLOWING RUNOFF IN CAPPED AREA	<1 CUBIC FOOT	
10/19/90	1100	BUILDING 9201-1	SPILL	GASOLINE	1 PINT	
10/16/90	1100	BUILDING 9201-1	SPILL	HYDRAULIC OIL	5 QUARTS	
10/10/90	1130	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
10/10/90	0945	EAST OF BUILDING 9204-2	SPILL	OILY RESIDUE FROM SWEEPING COMPOUND	3 GAL	
10/04/90	1020	UEFPC (OUTFALL 67)	RELEASE	GASOLINE (CREATED A SHEEN ON UEFPC)	<1 ML	
10/04/90	1945	KERR HOLLOW QUARRY	SPILL	HYDRAULIC OIL	5 GAL	
10/04/90	1250	NE OF BUILDING 9720-6	SPILL	HYDRAULIC OIL	3 GAL	
10/04/90	1315	WEST OF BUILDING 9703-15	SPILL	CONCRETE SEALER (SONNEBORN)	30 GAL	
10/02/90	1430	KERR HOLLOW QUARRY	SPILL	HYDRAULIC OIL	5.5 GAL	
09/25/90	1350	KERR HOLLOW QUARRY	SPILL	HYDRAULIC OIL	15 GAL	
09/21/90	0930	UEFPC	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 ML	
09/18/90	1740	BUILDING 9201-1 EAST DOCK	SPILL	HYDRAULIC OIL	1 GAL	
09/14/90	0830	BUILDING 9212 E-WING SHOP	SPILL	VACUUM PUMP OIL	1 GAL	
09/13/90	1425	BUILDING 9201-3 LIQUID METAL STORAGE	EXISTING	NaK (SODIUM-POTASSIUM METAL)	<1 POUND	
09/12/90	1000	BUILDING 9204-1	SPILL	MERCURY	<8 OZ	
09/12/90	1125	SE CORNER OF BUILDING 9201-5	RELEASE	MERCURY	38.2 POUNDS	
09/11/90	1700	SECOND STREET FROM PORTAL 12 TO 9720-6	SPILL	OIL	<2 GAL	
09/10/90	1615	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 GAL	
09/06/90	0820	EAST OF BUILDING 9206	SPILL	FLUID FROM CAPACITOR (490000 PPM PCB)	8 OZ	
09/05/90	1115	EAST OF BUILDING 9201-1	SPILL	HYDRAULIC OIL	2 GAL	
09/05/90	1940	UEFPC (NORTH/SOUTH PIPES)	RELEASE	OIL (CREATED A SHEEN ON UEFPC)	<1 GAL	
08/31/90	1200	SE CORNER 9201-5 AND SE CORNER OF 9201-4	EXISTING	MERCURY	<1 POUND	
08/28/90	1800	BUILDING 9811 DIKE 9500-0001	SPILL	NITRIC ACID (15% SOLUTION)	20 GAL	
08/24/90	1500	SOUTHEAST CORNER OF BUILDING 9201-4	EXISTING	MERCURY	2.2 POUNDS	
08/23/90	800	WEST OF BUILDING 9204-2	SPILL	MOTOR OIL	-1 PINT	
08/22/90	1530	BUILDING 9204-1 LINE YARD	SPILL	OIL FROM D-MAGNETS 15, 29, AND 37 (<10 PPM PCB)	-1 GAL	
08/21/90	1000	BUILDING 9201-1 EAST DOCK	SPILL	HYDRAULIC OIL	-1 GAL	
08/20/90	1255	BUILDING 9201-1 EAST DOCK	SPILL	HYDRAULIC OIL	-2 GAL	
08/20/90	1230	BUILDING 9720-8 CHEMICAL STORES	SPILL	DIESEL FUEL/COAL OIL MIXTURE	1/2 GAL	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
08/16/90	945	BUILDING 9995 DOCK 12	SPILL	DEPLETED URANIUM ACID SOLUTION	1 PINT	
08/14/90	1500	SE CORNER OF BUILDING 9201-5	PROCESS	MERCURY	89.6 POUNDS	
08/13/90	1515	BUILDING 9201-5W 4TH FLOOR	SPILL	CONDENSATE FROM AIR	25 GAL	
		STORAGE AREA		CONDITIONING UNIT		
08/13/90	900	NW CORNER OF 9706-2	SPILL	GASOLINE	<1 GAL	
08/07/90	735	EAST OF 9720-6 AND NORTH OF 9720-6	SPILL	MOTOR OIL	<5 GAL	
08/07/90	1400	SOUTH OF 9103	SPILL	RAW SEWAGE	80-100 GAL	
08/07/90	1400	SOUTH OF BUILDING 9103	SPILL	RAW SEWAGE	80-100 GAL	
08/02/90	900	BUILDING 9811	SPILL	HYDRAULIC OIL	2-3 GAL	
07/24/90	1500	MONITORING WELL GW-615 S-3	SPILL	PURGE WATER	10-15 GAL.	
		PONDS AREA				
07/24/90	1445	UEFPC	RELEASE	FOAM	<5 LBS.	
07/20/90	900	N. OF BUILDING 9215	SPILL	DIESEL FUEL	1 GAL.	
07/20/90	630	S.E. CORNER OF 9201-2	SPILL	DEMNERIALIZED WATER	1500-2000 GAL.	
07/19/90	1415	THIRD STREET NEAR PORTAL 28	SPILL	EMULSIFIER	-5 GAL.	
07/17/90	1330	BLDG. 9767-8	RELEASE	FREON R-12 (DICHLORODIFLUOROMETHANE)	<50 LBS.	
07/13/90	1230	THIRD STREET EAST OF WEIGH STATION	SPILL	POLYVINYL ACETATE EMULSION	1/2 GAL.	
07/10/90	2200	BLDG. 9404-4	SPILL	DEMNERIALIZED WATER	-10 GAL.	
07/09/90	1330	SECOND STREET S. OF 9204-4	SPILL	WATER PUMPED FROM DIKE	5-10 GAL.	
07/09/90	850	BLDG. 9202 ROOM 130	SPILL	AIR CONDITIONING CONDENSATE	2 GAL.	
07/03/90	1400	S.E. CORNER OF 9201-5	RELEASE	MERCURY	<1 LB.	
06/28/90	1015	UEFPC	RELEASE	UNKNOWN - CREATED AN OILY SHEEN	<1 GAL.	
06/26/90	1105	BLDG. 9720-8 CHEMICAL STORES AREA	SPILL	SODIUM SILICATE SOLUTION	16 FLUID OZ.	
06/26/90	2030	TANKER DIKE S. OF 9808	SPILL	SODIUM HYPOCHLORITE	20-30 GAL.	
06/25/90	1515	N.W. CORNER OF 9215	SPILL	NON-HAZARDOUS SLUDGE	<10 GAL.	
06/25/90	700	BLDG 9711-5 ROOM 108	SPILL	WATER FROM STEAM POTS IN CAFETERIA	-20 GAL.	
06/20/90	1150	BLDG. 9423	SPILL	HYDRAULIC FLUID	1 PINT	
06/15/90	1045	S. OF 9201-4	SPILL	SULFURIC ACID (95% CONCENTRATION)	8-10 GAL.	
06/14/90	1400	UEFPC	RELEASE	FOAM	<5 LBS.	
06/13/90	1730	UEFPC	RELEASE	FOAM	<5 LBS.	
06/08/90	800	BLDG. 9204-2 DOCK 47	SPILL	GASOLINE	1/2 GAL.	
06/08/90	1130	UEFPC	RELEASE	FOAM	-5 LBS.	
06/06/90	2200	N.E. CORNER OF 9204-4	SPILL	PLATING RINSE WATER	<5 GAL.	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
06/04/90	910	H. OF 9706-2	SPILL	ASPHALT TAR	15-20 GAL.	
05/31/90	715	S.E. CORNER OF 9623	SPILL	DIESEL FUEL	1/2 GAL.	
05/31/90	1300	S.E. CORNER OF 9206	SPILL	OIL CONTAMINATED WITH URANIUM AND PCB	1.5 GAL.	
05/31/90	30	S. OF 9201-5	SPILL	URANIUM CONTAMINATED WATER (ABRASIVE SAW COOLANT)	250 GAL.	
05/29/90	745	N.E. CORNER OF 9112	SPILL	ANTIFREEZE	-1 GAL.	
05/28/90	200	BLDG. 9998 N-1 FOUNDRY	SPILL	TOWER WATER	1000 GAL.	
05/26/90	1245	UEFPC	RELEASE	FOAM	-5 LBS.	
05/25/90	1030	UEFPC	RELEASE	FOAM	-5 LBS.	
05/24/90	1320	OUTFALL 501 AT CPCF	RELEASE	FOAM	-5 LBS.	
05/23/90	1400	OUTFALL 83 ON UEFPC	RELEASE	UNKNOWN - CREATED AN OIL SHEEN	SHEEN	
05/17/90	1300	EAST PORTAL PARKING LOT	SPILL	GASOLINE	-2 GAL.	
05/17/90	1045	BLDG. 9201-4	SPILL	ASBESTOS	3 LBS.	
05/15/90	600	N.E. CORNER OF 9204-4 DIKE 9500-0106	SPILL	NITRIC ACID (70% CONCENTRATION)	-1 GAL.	
05/15/90	1215	ALLEY BETWEEN 9212 AND 9995	SPILL	GASOLINE	2-3 GAL.	
05/14/90	1430	S. OF 9401-2	RELEASE	STEAM CONDENSATE	UNKNOWN	
05/10/90	1300	RAILROAD TRACKS S. OF 9811	SPILL	MOTOR OIL	-5 GAL.	
05/09/90	0	BASEMENT OF 9201-2	RELEASE	HYDROCARBON OIL AND WATER	<20 GAL.	
05/04/90	1700	OUTFALL 67 ON UEFPC	RELEASE	GASOLINE (SUSPECTED)	SHEEN	
05/03/90	900	OUTFALL 58 ON UEFPC	RELEASE	MERCURY	10 OZ.	
05/01/90	930	BASEMENT OF BUILDING 9201-1	RELEASE	WATER	-16,500 GAL.	
04/26/90	1100	BUILDING 9201-2	SPILL	TRANSFORMER OIL (<2 PPM PCB)	-40 GAL.	
04/25/90	1500	WEST CHESTNUT RIDGE	RELEASE	SEWAGE SLUDGE FROM CITY OF OAK RIDGE	-1000 GAL.	
04/24/90	1200	S.E. CORNER OF 9204-1 AT ROLLUP DOOR	SPILL	FLOOR WAX AND/OR CONCRETE SEALER AND WATER	20 GAL.	
04/20/90	1530	BASEMENT OF 9204-3	SPILL	VACUUM PUMP OIL	-20 GAL.	
04/05/90	1300	9754-2 GASOLINE STATION	SPILL	GASOLINE	-1/2 GAL.	
04/03/90	1100	BUILDING 9998 N-1 FOUNDRY	SPILL	HYDRAULIC OIL	-200 GAL.	
03/27/90	1200	S.E. CORNER OF 9206	SPILL	HYDRAULIC OIL	-5 GAL.	
03/22/90	0	BRIDGE OVER UEFPC LOCATED S. OF 9201-2	SPILL	MOTOR OIL	4 FLUID OZ.	
03/20/90	1740	UEFPC	UNKNOWN	OIL (SHEEN)	UNKNOWN	
03/17/90	1920	TANK F-316 AT NORTHEAST CORNER OF 9201-4	SPILL	MERCURY	-1/2 LBS.	
03/14/90	2035	PUMP ROOM IN 9998	SPILL	WATER	60 GAL.	
03/12/90	1700	TRANSFORMER 303 N.E. OF STEAM PLANT	SPILL	TRANSFORMER OIL (11 PPM PCB)	-10 GAL.	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
03/12/90	1310	STORAGE TANK F-1171, S. OF 9201-5	SPILL	SODIUM HYDROXIDE & WATER	-1 GAL.	
03/07/90	740	S.E. CORNER OF 9204-1 AT ROLLUP DOOR	SPILL	MINERAL OIL WITH RED DYE	-10 GAL.	
02/23/90	1010	LINE YARD EAST OF 9204-1	SPILL	OIL FROM ELECTRICAL EQUIPMENT (7 PPM PCB)	-2 GAL.	
02/15/90	1210	N. OF 9401-3 STEAM PLANT	RELEASE	BOILER BLOW DOWN WATER (POSSIBLY H2SO4 ALSO)	-450 GAL.	
02/14/90	1210	9754-2 GASOLINE STATION	SPILL	ANTI FREEZE	1/2 GAL.	
02/09/90	1200	UEFPC, OUTFALL 60	SPILL	OIL	UNKNOWN	
02/09/90	940	E. OF 9401-1 (OLD STEAM PLANT)	SPILL	GASOLINE	1/2 GAL.	
02/08/90	1530	N. SHOULDER OF BEAR CREEK ROAD	SPILL	KEROSENE	-1 GAL.	
02/08/90	1400	HAUL ROAD AT BC86	SPILL	DIESEL FUEL	1 GAL.	
02/08/90	1000	WEST OF 9201-1	SPILL	COOLANT (WASTEWATER AND TRINSOL)	-30-40 gal.	
02/06/90	1230	9735 ROOM 18	SPILL	MERCURY	4.2 OZ.	
02/05/90	1240	TRANSFORMER STORAGE AREA EAST OF 9204-1	SPILL	TRANSFORMER OIL (<5 PPM PCB)	-50 GAL.	
01/31/90	1130	9115 PARKING LOT	SPILL	GASOLINE	-4 FLUID OZ.	
01/29/90	925	9998 PLENUM AREA	SPILL	HYDRAULIC OIL	10 GAL.	
01/24/90	915	S.W. CORNER OF 9766	SPILL	MOTOR OIL	4 FLUID OZ.	
01/24/90	1020	9754-2 (EAST GASOLINE STATION)	SPILL	DIESEL FUEL	90 GAL.	
01/24/90	1445	9754-2 (EAST GASOLINE STATION)	SPILL	DIESEL FUEL	UNKNOWN	
01/23/90	1200	INTERSECTION OF BEAR CREEK ROAD/SCARBORO	SPILL	WHITE PAINT (OIL BASE)	-5 GAL.	
01/19/90	2105	BEAR CREEK BURIAL GROUNDS NEAR GW-625	SPILL	DRILLING FLUIDS (POSSIBLY PCB CONTAMINATED)	UNKNOWN	
01/16/90	850	S.E. CORNER OF 9204-4 DOCK 214	SPILL	PLATING RINSEWATER	-4 GAL.	
01/09/90	1030	S.E. CORNER OF 9103	SPILL	SANITARY SEWAGE	<10 GAL.	
01/04/90	0	GROUNDWATER MONITORING WELL GW-625	SPILL	PCB CONTAMINATED SLUDGE & WATER FROM WELL CUTTINGS	-16 FLUID OZ.	
01/04/90	1250	BUILDING 9215 DOCK 18	SPILL	THOUGHT TO BE 1,1,1-TRICHLOROETHANE	-4 FLUID OZ.	
01/02/90	1355	N. SIDE 9204-2	SPILL	HYDROCHLORIC ACID	<2 GAL.	
12/27/89	100	BUILDING 9720-28	SPILL	TAP WATER	-4000 GAL	
12/24/89	1245	BETWEEN 9204-1 AND 9204-3	SPILL	RAW SEWAGE	-100-300 GAL	
12/21/89	1630	RUST GARAGE AREA NORTH OF BLDG 9831	SPILL	DIESEL FUEL AND SLUDGE FROM UNDERGROUND TANK	-25-30 GAL	
12/21/89	840	NE CORNER OF 9704-1	SPILL	HYDROCARBON OIL (POSSIBLY HYDRAULIC OIL)	-5 GAL	

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
12/20/89	1000	OUTFALL 502 (CATCH BASIN AT WETP)	SPILL	TREATED WASTEWATER	200-300 GAL	
12/16/89	1000	9720-16	SPILL	WATER FROM FIRE SPRINKLER SYSTEM	-50 GAL	
12/16/89	1100	CHESTNUT RIDGE	SPILL	ASH SLUDGE WATER FROM THE STEAM PLANT	-25 GAL	
12/14/89	1300	9998 PLENUM AREA	SPILL	HYDRAULIC OIL (QUINTOLUBRIC)	40 GAL	
12/11/89	1400	9201-2 BASEMENT	SPILL	DEMINEALIZED WATER	-250 GAL	
12/07/89	1000	UEFPC, OUTFALL 48	RELEASE	UNKNOWN; MILKY WHITE LIQUID	UNKNOWN	
12/01/89	820	EAST OF 9723-8	SPILL	DIESEL FUEL	1/8 GAL	
11/30/89	1615	ALLEY BETWEEN 9212 AND 9995	SPILL	WASTE OIL	25 GAL	
11/22/89	0	9204-2E DOCK 13	SPILL	2- BUTANONE & 2- ETHOXYETHYL ACETATE	16 OZ OF EACH	
11/17/89	815	PORTAL 17	SPILL	GASOLINE	1 GAL	
11/17/89	1045	NW CORNER OF 9404-18	SPILL	SULFURIC ACID	-5 GAL	
11/16/89	1015	CHESTNUT RIDGE - ACCESS ROAD TO 9983-17	SPILL	PRAMITOL 25E AND WATER (HERBICIDE)	UNKNOWN	
11/14/89	800	PORTAL 17	SPILL	DIESEL FUEL	-2 GAL	
11/01/89	1330	NW CORNER OF 9824-4	SPILL	HYDRAULIC OIL	5 GAL	
10/13/89	1315	SW CORNER OF 9204-4	SPILL	HYDRAULIC OIL	8 OZ	
09/26/89	1445	NW CORNER OF 9204-4 TO SECOND STREET	SPILL	HYDRAULIC OIL	40 GAL	
09/26/89	1500	MOUNT VERNON ROAD TO PORTAL 14	SPILL	DIESEL FUEL	20 GAL	
09/16/89	800	UEFPC, OUTFALL 67	RELEASE	UNKNOWN - OILY DISCHARGE	UNKNOWN	
09/15/89	1230	9204-4	SPILL	BRINE (30% METHANOL, 70% WATER)	100 GAL	
09/13/89	800	NORTH OF 9720-5	SPILL	RAW SEWAGE	50 GAL	
09/11/89	1100	EAST OF 9204-2	SPILL	BRINE (36% METHANOL, 64% WATER)	75-100 GAL	
09/07/89	800	SE CORNER OF OIL POND #1	SPILL	OIL SEEP WATER AND GROUNDWATER FROM POLYTANK P-25	175 GAL	
08/29/89	1230	UEFPC - OUTFALLS 47 & 48	SPILL	MINERAL OIL (65 PPM PCB)	-10 GAL	
08/28/89	800	9201-2 SECOND FLOOR EAST OF COLUMN K-18	SPILL	TRANSFORMER OIL	<50 GAL	
08/24/89	1400	N. OF 9201-5 UNDER RAMP	SPILL	WATER	UNKNOWN	
08/22/89	1000	N. OF 9204-4	SPILL	GASOLINE	UNKNOWN	
08/14/89	1015	STACK 11, ROOF OF 9215	RELEASE	CONTAMINATED WATER	4 GAL	
08/10/89	1600	GASOLINE TANKER ADJACENT TO 9754-2	SPILL	GASOLINE	<1/4 GAL	
08/09/89	745	NORTH SIDE OF THIRD STREET	SPILL	WASTE OIL	10 GAL	

COMMENTS

DATE	TIME	LOCATION	TYPE	MATERIAL SPILLED	QUANTITY SPILLED	COMMENTS
		NEAR 9404-9				
08/04/89	745	BUILDING 9204-1 ROOM 113	SPILL	MERCURY	<1 LB	
08/03/89	1315	BEAR CREEK BURIAL GROUNDS	SPILL	URANIUM CHIPS AND COOLANT (WATER AND TRINSOL)	200-300 LBS	
08/02/89	1900	CONSTRUCTION AREA SOUTH OF 9113	SPILL	RAW SEWAGE	UNKNOWN	
07/31/89	1600	BUILDING 9720-5 AREA	SPILL	RAW SEWAGE	3000 GAL	
07/24/89	1000	SOUTH OF 9105	SPILL	ANTIFREEZE	3 GAL	
07/19/89	0	EAST OF RUBBER SHOP (9404-9)	SPILL	OIL	16 OZ	
07/13/89	2030	BEAR CREEK ROAD	SPILL	OIL (90 WEIGHT)	30 GAL	
06/30/89	1500	9409-5 DIKE	SPILL	WASTE SOLVENT	<100 GAL	
06/27/89	1100	9754-2 (EAST GASOLINE STATION)	SPILL	WATER WITH SMALL AMOUNT OF GASOLINE	-5 GAL	
06/27/89	1015	BUILDING 9998, DOCK 17	SPILL	HYDRAULIC OIL (CODE BE)	-20-30 GAL	
06/26/89	103	SOUTH SIDE OF PORTAL 27	SPILL	MURIATIC ACID (HYDROCHLORIC ACID)	2 GAL	
06/22/89	1730	EAST OF 9201-1 AND EAST OF POST 28	SPILL	WASTE OIL	5 GAL	
06/21/89	945	SOUTH OF 9720-8	SPILL	WATER	1000 GAL	
06/21/89	1330	EAST OF 9204-2	SPILL	HYDRAULIC OIL	1 GAL	
06/13/89	1430	TEST SIDE OF 9401-2	SPILL	HYDROCHLORIC ACID	1 GAL	
06/13/89	1030	9767-4, CHILLER AR 103	RELEASE	FREON	UNKNOWN	
06/10/89	830	STORM SEWER BOX W. OF 9754-2 GAS STATION	RELEASE	GASOLINE	UNKNOWN	
06/09/89	1030	STORM SEWER BOX W. OF 9754-2 GAS STATION	RELEASE	GASOLINE AND DIESEL FUEL	UNKNOWN	
06/02/89	1330	WEST SIDE OF 9201-1	SPILL	CONTAMINE CONCRETE SEALER	<1 GAL	
05/29/89	1230	CENTRAL SANITARY LANDFILL II	SPILL	DIESEL FUEL	10 GAL	
05/26/89	1000	BUILDING 9202 ROOM 100	SPILL	WATER	10 GAL	
05/23/89	900	UEFPC, OUTFALL 135	RELEASE	UNKNOWN	UNKNOWN	
05/22/89	1230	SW SIDE OF 9723-25	SPILL	LUBE OIL (CODE AX)	6 OZ	
05/16/89	1430	INTERIM DRUM STORAGE YARD S. OF 9720-33	SPILL	CHROMIC ACID	-20 GAL	
04/28/89	1300	9714 (TRANSPORTATION SAFE GUARDS GARAGE)	SPILL	DIESEL FUEL	10 GAL	
04/27/89	1500	BEAR CREEK BURIAL GROUNDS D-PIT	FIRE	COMBUSTION PRODUCTS FROM BURNING URANIUM CHIPS	UNKNOWN	
04/27/89	1545	9409-23	SPILL	HYDRAULIC OIL	0.5 GAL	
04/26/89	830	EAST OF 9204-2	SPILL	HYDRAULIC OIL	0.5 GAL	
04/18/89	0	STORM SEWER OUTFALL 181 SW OF	RELEASE	UNKNOWN (WHITE, SLIMY FLOC)	UNKNOWN	

APPENDIX D

Site Maps

OAK RIDGE Y-12 PLANT

Operated by

MARTIN MARIETTA

MARTIN MARIETTA ENERGY SYSTEMS, INC.

for the
Department of Energy

3

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9733-1	C-9	Engineering Offices
9733-2	C-8	Engineering Offices
9733-3	C-8	Engineering Offices
9733-4	C-8	Engineering Offices
9734	C-9	Maintenance/ORNL Analytical Chemistry
9735	C-9	ORNL Analytical Chemistry
9736	C-9	Engineering Offices
9737	C-5	Electrical Maintenance/ Standards Laboratory
9738	B-4	Production
9739	C-9	Engineering Offices/ Reproduction
9743-2	D-6	ORNL Biology
9744	B-10	Utilities

Development/
Physics Lab.
Technology

AIM

Association for Information and Image Management

1100 Wayne Avenue, Suite 1100
Silver Spring, Maryland 20910
301/587-8202

Centimeter

Inches

MANUFACTURED TO AIM STANDARDS
BY APPLIED IMAGE, INC.

3 of 3

9720-1	B-9	Stores
9720-2	C-4	Stores
9720-3	C-11	Packing & Shipping
9720-4	B-3	Storage
9720-5	B-14	Warehouse
9720-6	B-3	Maintenance Offices
9720-7	B-3	Stores
9720-8	B-4	Shipping & Receiving/Stores
9720-9	B-12	Storage
9720-10	B-12	Storage
9720-12	B-15	Storage
9720-13	B-15	Storage
9720-14	B-15	Storage
9720-15	C-17	Rust Engineering
9720-16	C-15	Rust Engineering
9720-17	C-10	Process Storage
9720-18	B-15	Rust Engineering
9720-19	C-11	Production
9720-20	C-6	Development
9720-21	B-4	Stores
9720-22	C-15	Storage
9720-23	B-4	Bulk Chemical Staging
9720-24	C-15	Storage
9720-25	B-16	Storage
9720-26	B-16	Storage
9720-27	A-17	Storage
9720-28	B-17	Waste Disposal

9720-29	B-11	Storage
9720-30	C-10	Storage
9720-31	B-16	Mixed Storage
9720-32	B-15	Storage
9720-33	B-15	Storage
9720-34	C-6	Storage
9720-36	A-17	Storage
9720-38	B-12	Storage
9720-39	B-6	ORNL Storage
9720-40	B-8	Storage
9720-44	A-8	Sludge Handling Facility
9720-46	C-12	Storage
9720-48	C-5	Utilities
9720-49	B-2	Storage
9720-50	B-3	Storage
9720-52	B-3	Storage
9720-53	C-15	Storage
9721	D-11	Waste Processing
9722	B-16	Waste Processing
9722-2	C-8	Utilities
9722-3	C-5	Utilities
9723-1	C-8	Changehouse
9723-4	C-6	Changehouse
9723-8	C-4	Changehouse

9723-10	C-10	Offices
9723-11A	C-10	Quality Division Offices
9723-14	C-11	Product Certification Offices
9723-16	D-12	Engineering/Maint. Offices
9723-18	D-12	Changehouse
9723-19	D-13	Changehouse
9723-21	D-13	Utilities
9723-24	C-6	Development
9723-25	D-11	Metal Prep./Maintenance/ Development/Fabrication
9723-27	C-4	Changehouse
9725	B-3	Storage
9727-3	B-12	Utilities
9727-4	B-12	Utilities
9728	C-5	Laundry
9729	B-5	Stores
9731	C-9	Classification/Development/ Color Photography Lab.
9732-3	B-6	ORNL Engr. Technology

KEY

Function

Process Storage
Process Storage
2a-1 Switchyard Controls
Storage
RNL Engineering Technology
RNL Engineering Technology
Central Computing Facility
RNL Engineering Technology
RNL Engineering Technology
RNL Engineering Technology
RNL Fusion Energy
General Offices
DOE Offices
RNL Engineering Technology
Employee Relations
Production Staff Offices
Engineering Offices
Engineering Offices
Office Building
US/DOE Offices
SE&A Offices
SE&A Offices
Computing Facility
General Shops
RNL Fusion Energy
RNL Engineering Technology
Production
Production
Production
Production
Development
Development
Development
Production
Production
Production
RNL Isotopes Separation
Production
Development
Production
Maintenance

9208	D-6	Engineering
9210	D-6	ORNL Biology
9211	D-6	ORNL Biology
9212	D-10	Production
9213	A-14	Security
9215	D-11	Production
9217	B-8	General Shops
9217-1	B-8	Filter House
9219	D-4	Garage
9220	D-6	ORNL Biology
9224	D-6	ORNL Biology
9401-1	C-6	ORNL Energy
9401-2	B-12	Production
9401-3	B-12	Steam Plant
9401-4	B-17	Waste Processing
9401-5	B-16	Waste Processing
9401-6	A-16	Waste Processing
9404-1	B-8	Warehouse
9404-2	B-8	Utilities
9404-3	B-7	Utilities
9404-4	B-7	Utilities
9404-5	A-6	Paint Shop
9404-6	C-9	Utilities
9404-7	A-10	ORNL Storage
9404-8	A-9	Weld Test Shop
9404-9	C-11	Rubber Shop
9404-10	C-11	Utilities
9404-11	C-12	Utilities
9404-12	C-12	Utilities
9404-13	C-12	Utilities
9404-16	C-15	Utilities
9404-17	C-12	Utilities
9404-18	C-12	Utilities
9404-20	C-14	Utilities
9404-21	A-11	Utilities
9409-2	B-8	Cooling Tower
9409-6	C-9	Cooling Tower
9409-10	C-11	Cooling Tower
9409-11	B-12	Cooling Tower
9409-12	B-12	Cooling Tower
9409-13	B-13	Cooling Tower

9409-15	A-10	Cooling Tower
9409-16	A-11	Cooling Tower
9409-17	C-10	Cooling Tower
9409-18	C-7	Cooling Tower
9409-19	D-6	Cooling Tower
9409-20	C-14	Cooling Tower
9409-21	C-14	Cooling Tower
9409-22	D-11	Cooling Tower
9409-23	D-10	Cooling Tower
9409-24	D-11	Cooling Tower
9409-26	D-12	Cooling Tower
9409-28	D-5	Cooling Tower
9409-29	D-5	Cooling Tower
9409-30	C-5	Cooling Tower
9409-31	C-7	Cooling Tower
9409-32	D-5	Cooling Tower
9409-33	D-10	Cooling Tower
9416-2	A-7	Water Treatment
9416-9	A-11	Water Treatment
9416-10	C-14	Water Treatment
9416-16	B-11	Water Treatment
9416-24	A-13	Water Storage
9418-1	B-10	Utilities
9418-5	B-7	Utilities
9418-6	B-6	Utilities
9418-9	B-9	Utilities
9419-1	B-6	ORNL Engineering Technology
9419-2	B-10	Utilities
9420	C-17	Rust Engineering
9420-1	D-17	Rust Engineering
9422	B-10	ORNL Fusion Energy
9423	D-10	Storage
9510-2	B-10	Storage
9610	B-4	Storage

9611-2	B-10	Sewer
9616-3	C-7	Chem
9616-4	C-10	Chem
9616-5	B-2	Storage
9616-6	C-18	Waste
9616-7	C-19	Waste
9616-8	C-19	Filter
9616-9	B-13	Steam
9620-2	B-5	Utilities
9623	B-11	Central
9624	A-19	Tanker
9626	D-17	Rust
9627	D-17	Rust
9701-5	C-3	East
9701-6	C-3	East
9701-7	D-3	Pine
9701-8	D-14	Bear
9702	D-7	Utilities
9703-11	D-11	West
9703-15	B-17	Rust
9704-1	D-7	Maint
9704-2	D-9	Admin
9706-1	C-7	Time
9706-1A	C-7	Mech
9706-2	C-8	Health
9709	C-5	PC Tr
9710-2	C-10	Fire
9710-3	C-8	Guard
9711-1	C-7	Librar
9711-5	C-10	Cafete
9712	D-3	Garage

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6

EAST PATROL ROAD

EAST FORK POPLAR CREEK

9626-7

9626-2

9720-3

KEY

Building Location Function

81-10	B-11	Process Storage
81-22	B-15	Process Storage
1501-1	D-5	Elze-1 Switchyard Controls
1502-2	B-14	Storage
9102-1	B-6	ORNL Engineering Technology
9102-2	B-6	ORNL Engineering Technology
9103	D-13	Central Computing Facility
9104-1	B-6	ORNL Engineering Technology
9104-2	B-6	ORNL Engineering Technology
9104-3	B-6	ORNL Engineering Technology
9105	B-7	ORNL Fusion Energy
9106	D-7	General Offices
9107	D-14	DOE Offices
9108	B-6	ORNL Engineering Technology
9109	D-7	Employee Relations
9110	C-11	Production Staff Offices
9111	D-12	Engineering Offices
9112	D-12	Engineering Offices
9113	D-12	Office Building
9114	D-16	Rust/DOE Offices
9115	D-8	HSE&A Offices
9116	D-8	HSE&A Offices
9117	D-13	Computing Facility
9201-1	B-8	General Shops
9201-2	B-7	ORNL Fusion Energy
9201-3	B-6	ORNL Engineering Technology
9201-4	C-12	Production
9201-5	C-13	Production
9201-5E	C-13	Production
9201-5W	C-14	Production
9201-5N	D-14	Production
9202	C-7	Development
9203	C-6	Development
9203A	C-6	Development
9204-1	C-12	Production
9204-2	C-11	Production
9204-3	B-10	ORNL Isotopes Separation
9204-4	C-14	Production
9205	C-6	Development
9206	C-10	Production
9207	D-6	Maintenance

9208	D-6	Engineering
9210	D-6	ORNL Biology
9211	D-6	ORNL Biology
9212	D-10	Production
9213	A-14	Security
9215	D-11	Production
9217	B-8	General Shops
9217-1	B-8	Filter House
9219	D-4	Garage
9220	D-6	ORNL Biology
9224	D-6	ORNL Biology
9401-1	C-6	ORNL Energy
9401-2	B-12	Production
9401-3	B-12	Steam Plant
9401-4	B-17	Waste Processing
9401-5	B-16	Waste Processing
9401-6	A-16	Waste Processing
9404-1	B-8	Warehouse
9404-2	B-8	Utilities
9404-3	B-7	Utilities
9404-4	B-7	Utilities
9404-5	A-6	Paint Shop
9404-6	C-9	Utilities
9404-7	A-10	ORNL Storage
9404-8	A-9	Weld Test Shop
9404-9	C-11	Rubber Shop
9404-10	C-11	Utilities
9404-11	C-12	Utilities
9404-12	C-12	Utilities
9404-13	C-12	Utilities
9404-16	C-15	Utilities
9404-17	C-12	Utilities
9404-18	C-12	Utilities
9404-20	C-14	Utilities
9404-21	A-11	Utilities
9409-2	B-6	Cooling Tower
9409-6	C-9	Cooling Tower
9409-10	C-11	Cooling Tower
9409-11	B-12	Cooling Tower
9409-12	B-12	Cooling Tower
9409-13	B-13	Cooling Tower

9409-15	A-10	Cooling Tower
9409-16	A-11	Cooling Tower
9409-17	C-10	Cooling Tower
9409-18	C-7	Cooling Tower
9409-19	D-6	Cooling Tower
9409-20	C-14	Cooling Tower
9409-21	C-14	Cooling Tower
9409-22	D-11	Cooling Tower
9409-23	D-10	Cooling Tower
9409-24	D-11	Cooling Tower
9409-26	D-12	Cooling Tower
9409-28	D-5	Cooling Tower
9409-29	D-5	Cooling Tower
9409-30	C-5	Cooling Tower
9409-31	C-7	Cooling Tower
9409-32	D-5	Cooling Tower
9409-33	D-10	Cooling Tower
9416-2	A-7	Water Treatme
9416-9	A-11	Water Treatme
9416-10	C-14	Water Treatme
9416-16	B-11	Water Treatme
9416-24	A-13	Water Storage
9418-1	B-10	Utilities
9418-5	B-7	Utilities
9418-6	B-6	Utilities
9418-9	B-9	Utilities
9419-1	B-6	ORNL Engineer Technology
9419-2	B-10	Utilities
9420	C-17	Rust Engineer
9420-1	D-17	Rust Engineer
9422	B-10	ORNL Fusion
9423	D-10	Storage
9510-2	B-10	Storage
9610	B-4	Storage

2

3

5

EAST PATROL ROAD

EAST FORK POPULAR CREEK

Source: Comprehensive Sampling Program for East Fork
Pollution Assessment and Control Plan, Oak R.
57431C/1DRAFT, March 1987, p. 3-1.

reek Area Source
Plant (Y/SUB/87-

2. Drainage pipe network and subbasins of the Y-12 Plc

VDEX

LEGEND

SELLER'S WORK AREA

SELLER'S STORAGE AREA

SELLER'S ACCESS ROUTE

PARKING AREA

<p>UNLESS OTHERWISE SPECIFIED</p> <p>FRACTIONS 1/16, 1/8, 1/4, 1/2, 3/4, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100</p> <p>DATE 12-22-78</p>										<p>DESIGNED BY G.W. ACKERMAN 7/27/77</p> <p>DRAWN BY G.W. ACKERMAN 7/24/78</p>		<p>MARTIN MARIETTA ENERGY SYSTEMS, INC.</p> <p>ORDERED BY THE DEPARTMENT OF ENERGY under U.S. GOVERNMENT CONTRACT DE AC-66-540821-000 and DE</p> <p>44th St., Tennessee • Production Summary</p>	
<p>EMERGENCY SANDBAG AND SPILL RESPONSE EQUIPMENT LOCATIONS</p>										<p>3 2 2 2 7-72 2 2</p>			
<p>SCALE 1" = 100'</p>										<p>C2E-</p>			
<p>REVISIONS</p>										<p>DATE</p>			

SITE ACCESS PLAN

DRAWING INDEX

[illegible]

9201-5N SE, Absorbant, Gloves,
Shovel, Brooms, Sandbags

-9720-9, Two
Tra.

9201-5 NE, S
S

LOCATION PLAN

Map showing the location of the Y-12 Centralized Sanitary Landfill II. The map includes the following features:

- Y-12 CENTRALIZED SANITARY LANDFILL II** (Central area)
- TURNPIKE** (North of landfill)
- CANYON COUNTY** (North of landfill)
- TOWN HWY. 61** (East of landfill)
- CITY OF OGDEN** (East of landfill)
- BETHUNE VALLEY ROAD** (South of landfill)
- SOLAR ROAD** (South of landfill)
- GALLAGHER BRIDGE** (West of landfill)
- INTERSTATE** (West of landfill)
- OAK RIDGE** (North of landfill)
- BEAR CREEK** (East of landfill)
- Y-12 PLANT** (East of landfill)
- WHITE OAK BRIDGE** (South of landfill)
- HAWKINS LAKE** (South of landfill)
- PEARL ANDERSON** (South of landfill)

[illegible][illegible]

Sandbags

DEX

LEGEND

9201-5 SW, Sandbags, Shovel, Absorbant

BEAR CREEK PORTAL

PINE RIDGE PORTAL

WEST PORTAL

9720-37

9420

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[illegible][illegible][illegible][illegible] [illegible][illegible][illegible][illegible][illegible][illegible]

LOCATION PLAN

POWDERHORN AREA

SAGEHEN CREEK

RIDGE

TANAPAH

V-8 PLANT

CLARK COUNTY

ANDERSON

ROAD

Distribution

D. I. Allen
M. R. Anderson
R. D. Bagguley
E. J. Barnett
J. O. Bennett
D. E. Bohrman
G. W. Bowman
T. R. Butz
G. L. Calvert
F. F. Carringer
T. R. Christman
G. D. Coppenger
M. S. Craze
R. C. Crowe
C. D. Davis
K. D. Delius
K. M. Dixon
C. A. Druit
S. D. Easterling
J. M. Eaton
D. B. Elkins
C. Y. Ellis
R. T. Ford
C. M. Frazier
C. H. Fritts
J. Z. Gore
J. W. Hanna
J. E. Heiskell, Jr.
C. C. Hill
R. M. Hill
R. A. Hummel
I. W. Jeter
J. R. Keene
S. L. Kennedy
G. W. Kerley
R. M. Keyser
J. W. Lay
A. K. Lee/DOE-OSTI (3)
N. E. Lee
D. M. Maguire
G. D. Marlow
B. A. Maupin
J. B. McGhee
L. W. McMahon
W. G. McMillan, DOE-OR

G. N. McRae
A. B. Merrill
R. C. Merwin
C. O. Miller, III
T. R. Miller
M. E. Mitchell
M. K. Morrow
R. E. Mulkey
J. D. Noblit
M. M. Osborne
W. R. Pedigo
J. E. Powell
W. J. Redmond
W. D. Rideout
R. C. Riepe
R. G. Robinson
R. L. Sampsel
R. S. Sampson, II
M. E. Sriver
J. L. Seagraves
R. W. Sellars
W. E. Shoopman
J. M. Skinner
M. T. Smith
P. W. Standifer
J. D. Stout
T. C. Surrat
W. H. Thompson Jr.
J. G. Tracy
H. E. Trammel
L. L. Triplett
S. M. Trotter
L. O. Vaughan
P. R. Wasilko
S. H. Welch
M. C. Wiest, Jr.
M. C. Wiginton
J. A. Wilker
L. H. Wright
L. W. Xiques
B. A. Zerr
Y-12 Central Files
Y-12 ER Document Management
File - EMD - RC
Water Compliance Section Library

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9/15/93

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