U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 0
DRAFT FICTIONAL MULTIMEDIA INSPECTION REPORT

TO: Enforcement Chief

FROM: Wolf J. Flywheel, Environmental Engineer

SUBJ: 2000 RCRA Multimedia Inspection of Lilliput University

I. GENERAL INFORMATION

Facility Name:
Lilliput University
500 Triptych Avenue
Lower Sackbutt, Lilliput

Responsible Official:
Mr. Xavier I. Piffle III, Director
Department of Safety & Risk Management
12 Ambience Way

Date of Inspection:
November 1, 2000

Purpose of Inspection:
Multi-Media Inspection
Public Agency Team.

Persons Participating in the Inspection:
Wolf J. Flywheel, U.S. EPA (RCRA)
John Jones U.S. EPA (CWA)
Steven Smith U.S. EPA (CAA)
Ty Law U.S. EPA (EPCRA)
Rufus T. Firefly State Department of Environmental Management(DEM)
Orlando Offal, University's Department of Safety & Risk Management

General Facility Description

Lilliput University operates numerous colleges at this campus. Along with the traditional academic curricula, the University is involved in extensive research activities in a variety of areas. Additionally, a large maintenance department supports all the University's activities.

From a RCRA perspective, waste is generated from numerous sources throughout the University, including: automotive maintenance, building and grounds maintenance, research and laboratory activities and shop operations. Primary wastes stored at the University include corrosives, oxidizers, flammables, poisons, acute hazardous wastes, reactives, waste solvents, compressed gas cylinders, waste paint, and other laboratory chemical wastes. Wastes generated from the building maintenance department and the vehicle maintenance facility include waste thinner, waste paint, used oil, used batteries, fluorescent light tubes, and fuel. The art department also generates waste paints and thinners. Facility representatives stated that it is currently a Large Quantity Generator. The University submitted a Notification of Hazardous Waste Activity to the U.S. Environmental Protection Agency (EPA) on June 28, 1980 as a Generator of hazardous wastes. The facility currently retains EPA I.D. No. 000 000 000. On November 19, 1980, the University also filed a Part A permit application for the on-site treatment and storage of hazardous waste. However, a treatment and storage permit was not issued.

The University employs ten in their EHS staff. The campus is home to 17,000 students and 280 faculty. According to facility representatives, there are approximately 100-300 research facilities on the campus, which collectively generate approximately 170-300 kg. of hazardous waste per month. EPA's Biennial Reporting System (BRS) shows that the University shipped 1.3 tons (~2600 lbs.) of RCRA-regulated waste in 1995. Types of wastes shipped off-site for disposal in 1995 included acute hazardous wastes, ignitables, mercury, and spent solvents. The University utilizes a contractor for the management and ultimate disposition of RCRA and non-RCRA hazardous waste.

Pursuant to the Clean Water Act (CWA), the University discharges approximately 200,000 gallons per day (gpd) of process and other wastewater through a National Pollutant Discharge Elimination System (NPDES Permit No. 001234) outfall to the Tiny River (Exhibit 1). This total includes at least 39,500 gallons per day of non-contact cooling water, groundwater and storm water. John Jones, the Region's CWA inspector, reviewed the University's system and Discharge Monitoring Reports. He also reviewed the areas where the University's pretreatment permit controlled discharges. His trip report is attached as Exhibit 2.

Finally, under the Clean Air Act (CAA), the University operates at least eighteen boilers installed in its various dormitories, classrooms and laboratories on-site. The CAA report is included in this document.

RCRA Reporting/Information Requirements

Facility Identification Number: Lilliput 000
Type of Operation: Generator (Large Quantity Generator)
Date of Notification: January 28, 1981
Type of Notification: Generator (Large Quantity Generator)

RCRA Inspection - General Observations

The inspection included a tour and review of several areas identified by the University's escort, Mr. Orlando Offal, as generation and storage locations. At the time of the inspection, Lilliput identified and managed one area (Smith Waste Depot) as a less-than-90-day container storage area. However, inspectors observed numerous containers of hazardous waste also being stored at at least three other locations including the substorage area, an outdoor paint storage area and the paint shop.

The inspection began at the automotive maintenance building. The University operates approximately 350 vehicles. General maintenance is performed on most of these vehicles at this location. The site included a small concrete locker containing two 275-gallon waste oil tanks. A separate inspection was conducted on university vehicles.[1] See photos attached as Exhibit 3.[2]

The inspection moved to the paint shop. Inspectors observed that the building's loading dock was being used to store waste containers of photo fixer and developer. Both Mr. Offal and an employee working within the shop identified the containers as containing waste. The waste containers included approximately ten 1-gallon; twenty-five 2-gallon; and, one 5-gallon polyethylene (poly) containers. All the containers were marked solely with product labels. No waste labeling, waste marking or dates were observed on any of these containers. The containers were stacked up to four tiers high on top of each other in the corner of the dock area between

[1] See Section 203(a)(3) of the Clean Air Act (the "Act"), 42 U.S.C. § 7522(a)(3). Section 203(a)(3)(A) of the Act prohibits any person from removing or rendering inoperative any emission control device or element of design installed on or in a motor vehicle. Section 203(a)(3)(B) prohibits the manufacture or sale, or offering for sale, or installation of any part or component intended for use with, or as a part of, any motor vehicle or motor vehicle engine, where a principal effect of the part or component is to bypass, defeat, or render inoperative any emission control device or element of design installed on or in a motor vehicle. This law also prohibits anyone from causing such acts. Section 205 of the Act, 42 U.S.C. § 7524, subjects persons other than manufacturers and new car dealers to a maximum civil penalty of $2,500 for each violation of section 203(a)(3) of the Act.

[2]State inspectors may independently inspect the waste oil storage areas; this is a hazardous waste under the authorized state regulations.

two sets of doors. Mr. Offal stated that these waste containers had been stored on the loading dock for approximately one month. See photos included as Exhibit 4.

The inspection proceeded to the maintenance division storage area; a general storage area located in the back of the division's parking lot. Included among the numerous items in this area was a small polyethylene containment unit. The unit was open and contained two 55-gallon drums. The EPA inspector observed that one drum was empty and one drum was approximately 1/3 full. Mr. Offal stated that the second drum contained flammable waste paints and thinners generated by the nearby paint shop. The drum was unlabeled and undated.

Directly adjacent to the secondary containment unit were numerous rusted metal containers and plastic containers. Original product labels attached to these containers identified the contents as paint related material. Residues were observed on their inside bottoms. The containers had been placed directly on sandy ground and were stacked up to two tiers high on top of each other. By handling and general observation, the EPA inspector determined that a majority of these containers were at least half full. Mr. Offal and a shop employee inside the paint shop stated that they did not know who generated the wastes in these containers. Product labels attached to some of the old paint cans indicated that the containers originally held oil-based paint. The containers included the following unlabeled and undated items:

1. approximately 25 badly rusted 1-gallon paint cans;
2. approximately 8 1-gallon containers of paint related waste; and,
3. approximately 11 5-gallon metal and poly containers of paint related waste.

Inside the maintenance department's paint shop, the EPA inspector observed two 5-gallon poly containers with funnels positioned in the tops of their respective covers. Both containers contained waste material. The shop attendant stated that all types of waste paint and thinners were disposed of in these containers. When full, they were emptied into the 55-gallon drum in the lot (i.e., the general storage area located in the back of the maintenance division's parking lot.) Both containers were unlabeled. Other shops noted inside the main maintenance building were HVAC, plumbing, electrical, locksmith, and general stores. See photos included as Exhibit 5.

The inspection then moved to the Smith Waste Depot hazardous waste storage area. The facility is located behind a locked fence on which is affixed a "hazardous waste storage" sign. Several unlabeled and undated containers were located directly in front of the doorway. The containers included four 55-gallon drums and two 20-gallon containers. Mr. Offal stated that four of the six containers held spill absorbent materials used to remediate a recent tractor turn-over. Mr. Offal could not identify the contents of the other two 55-gallon drums. As the inspectors proceeded, Mr. Offal stated that all the materials stored within this area were waste. The area contained numerous containers. Aisle space of approximately three feet was maintained. However, the University did not segregate incompatible materials. Several fire extinguishers were noted and the inspector noted that they had been inspected within the last twelve months. The majority of the waste containers were stored on wooden pallets. Some containers were

stored on the concrete floor. Boxes containing glass bottles of hazardous waste were stored up to four tiers high. The University stated that it performed weekly inspections of this storage area. However, the University's inspection checklist did not include a space to check off the existence of properly labeled/dated containers. See photos included as Exhibit 6.

The following items were being stored in the facility on the date of the inspection. (Photos are included as Exhibits 7-10):

Containers along the Right wall starting from the pallet furthest from the door

The first pallet held five 5-gallon metal containers and two boxes of 1-gallon glass containers. The boxes were stacked on top of one another. All seven items were labeled; none were dated. The containers were labeled and/or marked as one of the following: waste organic solvent; organic halogenated waste; organic nonhalogenated; and, halogenated chemicals & hydrocarbon waste. The outside of the two boxes were marked “waste organic”. Mr. Offal opened the cardboard boxes. Each box contained four 1-gallon glass bottles. The labels attached to the bottles were original product labels[3].

The next pallet contained seven unlabeled cardboard boxes. The boxes were stacked up to three high. The open boxes contained 1-gallon glass bottles with original product labels. Two waste bottles in an open box were open. None of the containers were dated.

The last pallet along the right wall contained one 5-gallon metal container labeled waste acetone. The label included a date of 2/2/96. Three cardboard boxes were also located on this pallet. Two of the pallets were stacked on top of each other. These boxes were unlabeled and in poor (crushed) condition. The third box was open. It contained six small containers. None of the boxes or the containers within the open box were dated. Adjacent to the last pallet were two 15-gallon plastic carboys and three plastic containers of approximately one gallon capacity. One of the 15-gallon carboys was labeled with its original product label, which included a "corrosive" placard.

The inspectors proceeded to the Putrid Chemistry Area (Area); this is actually a separate building. The Area is located in the center of the University’s campus. The building was being used as a central staging area to collect waste materials removed from numerous chemistry labs. Waste types included acids; alcohols and glycols; caustics; combustible and flammable materials; and, a myriad of solvents and metals. Mr. Offal stated that the University did not perform any formal inspections at this storage area.

According to Mr. Offal, the original product labels on laboratory-generated waste bottles do not necessarily represent the specific chemical composition of the waste within the bottle. Mr. Offal also stated that the University’s waste handlers assume that these bottles contain the same class of waste as the original product (e.g., solvent bottles contain solvents, acid containers contain acids). It is unclear whether this is, in fact, the case.

Within the Area, waste containers were observed being stored on the floor and on lab benches. According to the laboratory supervisor, the individual labs had already declared the majority of the materials to be waste. As the inspectors entered the room, containers of waste were immediately noted on the floor adjacent to the doorway. Most of the waste materials were located on the left side of the room, although some 1-gallon glass containers were also on the floor in the rear. There was no segregation of incompatible materials, and no labeling or dating of containers. Several small laboratory containers, including those containing liquids, were open. The majority of the containers had product labels, although many containers were completely unlabeled. Some containers were marked with chemical descriptions and/or symbols.

Inspectors witnessed waste materials being transported to the building on a three tier 4-wheel cart. The three shelves on this transport cart were full of small laboratory containers. The people moving these materials stated that they were 'all waste laboratory chemicals'. The waste was being moved by a professor and student aide (lab assistant). The lab assistant was wearing shorts and open-toed sandals.

The final areas inspected included several classrooms and research laboratories. In a pharmacy department lab (identified as "graduate lab A"), two of three 1-gallon glass waste containers located in a fume hood were open (i.e., with funnels inserted). One open container was labeled "halogenated waste solvent", the other was labeled with its product label (methanol). No one was working under this hood at the time of the inspection.

We then walked to a bioinorganic laboratory. Professor Kerouac was identified as in charge of this area. We asked her to identify the types of wastes generated at this laboratory. She stated that this laboratory generated primarily waste acetone and methanol. We inspected this laboratory and observed one 500-ml glass satellite container that was marked and accumulated 4,7 diphenyl 1,10 phentholic 1,3,5 triazine; one 500-ml satellite container that was marked and accumulated phenol waste; and, one full plastic 2-gallon container with a University hazardous chemical disposal tag marked acetone, hexane, and methanol. We did not observe a fill date marked on the tag. We also observed one 2-gallon container with a white tag marked acetone (45%), methylene chloride (35%), n-hexane (25%) and water (10%) and one 1-gallon container marked as hexane. Professor Kerouac stated that the hexane waste included acetone, methylene chloride and water.

We observed one 2-gallon container with a white tag marked acetone (45%), methylene chloride (35%), n-hexane (25%) and water (10%), and one 16-ounce container marked "waste" with no other words that identified the contents. We asked the professor what type of waste was stored in this container. She stated that she could not identify it. We asked her who was responsible for the waste in this laboratory. She stated that she did not know.

We inspected a second fume hood in this laboratory and observed one 2-gallon plastic satellite container marked as hexane. This container was approximately ½ full. Professor Kerouac stated that the waste was a combination of hexane and acetone. We observed one 500-ml marked

satellite container accumulating cyclohexane, one satellite container accumulating vinyl chloride and one satellite container accumulating benzene. The benzene container was not sealed and had an open funnel in the fill cap. We observed one satellite container accumulating dichloromethane. This container also had an open funnel. We observed one satellite container visually determined to be approximately ½ full. This satellite container was accumulating tetrahydrofuran (according to markings on this container and one 4-liter container marked "waste"). These were also stored with an open glass funnel. We asked the professor to identify this waste. She replied that the waste was acetone. She also stated that the laboratory wastes were usually picked up for removal every Wednesday morning.

In the research lab 23, the inspection team observed one four litre container marked “waste methanol”. The inspector asked the professor where this waste had been generated. She replied that it was generated in research lab 52, which is located one floor down.

Records/Training

Lilliput did not maintain any documents or records identifying: the job title and written job description for each position at the facility related to hazardous waste management; the name of the employee filling each job; a written description of the type and amount of both introductory and continuing training given to each position; or, records documenting that training or job experience requirements for each position related to hazardous waste management have been provided. On the second day of the inspection, the EPA inspector asked Mr. Offal to describe the facility’s RCRA training program. Mr. Offal confirmed the above observations and stated that no formal training had been provided to Lilliput personnel since 1993. He remarked that budget cuts and work loads were the cause.

Also, Mr. Offal stated that contractors from Acme Waste Removal who are managing hazardous waste on-site (i.e., conducting weekly inspections and managing 90 day accumulation areas) are not trained on procedures specific to the University’s hazardous waste program.

Inspections

According to Mr. Offal, Lilliput conducts weekly inspections solely at the Smith Depot container storage facility. No inspections were performed at the three other less-than-90-day container storage areas on campus. Additionally, a review of the inspection logs at the Smith Area indicates that during the current year, several weekly inspections were not performed there (the weeks of June 5; July 8 and October 10.)

Contingency Plan

The contingency plan identified the Smith Depot as the only central hazardous waste storage area at Lilliput. However, as stated above, EPA personnel observed at least three other container storage areas in use on November 1, 2000. The plan did not include any emergency response procedures. No descriptions were included for the most basic assessment and emergency

response actions necessary in the event of an imminent or actual emergency situation. No provisions for responding to spills, fires, or explosions existed, beyond recognition and notification. The plan stated that "In the event that a problem or incident did develop at the `Facility', immediate clean up steps would be taken and the contract handler would be notified immediately to respond to campus to remove the waste." Additionally, the capabilities of the listed emergency response equipment and personnel protection equipment were not addressed. This is especially important, given the myriad wastes managed at Lilliput. The plan did not provide any evacuation procedures. The plan stated that "because of the complexity of the University and the number of buildings involved, it is impossible to include the requirements of § 265.52(f) Evacuation Plan for personnel."

Waste Determinations

Lilliput's hazardous waste management program generates many "unknown" wastes. The majority of these wastes are generated by laboratory operations. On November 1, 2000, thousands of containers of solid waste were observed by EPA personnel being stored at the Smith Waste Depot storage facility and other areas. The composition of many of these wastes were unknown. The containers were being stored with no means of control to ensure they were segregated from potential incompatible wastes and materials. Many of the hazardous waste containers whose contents could be identified held acutely hazardous waste. These wastes were co-stored with the containers holding unknown wastes. Additionally, approximately 40 containers of unknown waste were stored at the maintenance department's outdoor paint storage area.

On November 1, 2000, none of the above-mentioned waste containers were labeled in accordance with the applicable regulations governing Hazardous Waste Management. The University relied on its removal contractor to characterize these wastes as part of its waste removal services. In addition, labels attached to many other containers stored at these storage areas were original product labels. Mr. Offal stated that these labels did not necessarily represent the specific chemical composition of the waste within the container. According to the University's waste contractor, Mr. Thaddeus D'Eleterioso of Cy & Ottic Environmental, Inc., waste characterizations for laboratory-generated waste bottles and cans were based on the original product labels, unless containers were otherwise marked.

Based on field observations made by the inspectors on November 1, 2000, conversations with Mr. Offal and Mr. D'Eleterioso, and a review of manifesting documents (e.g., shipping papers and hazard characterization sheets) submitted by Lilliput in its response to the EPA's Request for Information, hundreds of "unknown" solid waste containers were present at the facility. The facility failed to make proper waste determinations for the wastes in these containers. Many of these wastes may have been listed wastes (e.g., discarded commercial chemical products) or hazardous waste from non-specific sources (e.g., solvent mixtures), and/or may have possessed a toxicity characteristic (e.g., chromium, mercury) not evaluated for during the contractor's "spot testing" of unknown wastes. In addition, waste determinations for hundreds of other containers were based on the attached original product labels. These wastes were predominantly generated

in research and/or teaching laboratories. See Exhibit 11.

Manifests and LDR Forms

A review of Lilliput's manifests and corresponding shipping papers for lab pack waste revealed that the University transported several lab packs containing chemically incompatible waste materials; i.e., of different Department of Transportation (DOT) hazard class designations. Hazardous wastes of different hazard classes were packaged in the same lab pack container in violation of US DOT regulation 49 CFR § 173.12(b)(1). For example, lab pack waste manifested as Class 3 [flammable liquids] materials contained waste materials identified as Class 6.1 [poisonous materials] and Class 9 [miscellaneous] (as identified in 49 CFR §172.101 Hazardous Materials Table) in addition to the Class 3 material. Additionally, materials specifically identified as prohibited from being packaged or described as a lab pack material were consolidated and lab packed.[4]

Laboratory Issues

EPA inspectors attempted to determine how the lab wastes stored throughout the University were generated, and who determined whether they should be sent to less than 90 day storage areas. EPA thus interviewed employees and/or researchers at the following departments: Biochemistry; Biomedical Research Center; Chemistry; Oceanography; and, Zoology. The interview notes are included as Exhibit 12. The following observations are based on these interviews.

The University's laboratory operations generate chemicals that fall into the following broad categories: used and/or contaminated chemicals; chemicals that are no longer suitable for research purposes due to unknown purity or history; and, excess, off-specification and/or unneeded chemicals.

Research personnel determine when their chemicals are spent or no longer usable. Contaminated chemicals are wastes according to the University's Hazardous Materials Form, which states: For this purpose, waste is material which has been used or contaminated with other material. Information gathered by EPA inspectors demonstrates that the University stored listed wastes (spent solvents) per 40 CFR § 261.3(1) including carbon tetrachloride (F001); trichloroethane (F002); xylene (F003); and, toluene (F005). Additionally, the University stored listed hazardous wastes (used chemicals and reagents) per 40 CFR § 261.33, which included potassium cyanide (P098); sodium azide (P105); and, osmium tetroxide (P087). Further, according to information gathered by inspectors, the school stored characteristic wastes, per 40 CFR § 261 Subpart C, including: waste flammable solvents (D001); chloroform (D022); and, dichloroethane (D028). Lastly, chemicals noted in less than 90 day storage areas included wastes that should have carried EPA waste codes (D002; acids and bases); (D003; reactives); (D004; toxics); and, other

[4] See 49 CFR § 173.12(b)(3).

characteristic pesticide wastes.

Several researchers commented that significant quantities of waste chemicals are abandoned by each successive wave of departing researchers. These wastes usually remain in the laboratory until it is assigned to another researcher At that time, the new researcher should determine if the orphan chemicals can be used. Open containers are treated as contaminated chemicals. (In determining what might constitute an adequate correction to these procedures, it is significant to note that several students stated that no researcher would ever use chemicals in containers where the seals had been broken. These student researchers also stated that no one would even use chemicals in sealed containers found in the lab. They stated that researchers take this position because exposure to heat and light over time affect a chemical's usability. Thus, it is likely that all product left in university labs ((open or sealed)) will, in effect, be "abandoned.") It is left to research personnel to determine when unused chemicals are no longer usable in their lab. Researchers made these determinations based on reasons including left-over chemicals no longer necessary for current experiments; reagents that have exceeded their shelf life or were replaced by fresher chemicals; and, chemicals of unknown purity. If laboratory personnel determine that they cannot utilize these chemicals, they stated that they contact Environmental Health Services (EHS) to arrange for its removal. They also stated that this is the same procedure that lab personnel use for disposal of off-specification, abandoned, used, contaminated, impure, unknown, and/or other wastes.

Many researchers stated that they do not make any determination on chemical products found in their labs. They state that when this happens, these materials remain on the shelves indefinitely. EHS has no established protocol identifying each university generator (i.e., lab) sending chemicals to storage areas and when such items were received.

Clean Air Act Report

EPA inspectors reviewed the University's activities under Section 113(b) of the Clean Air Act, 42 U.S.C. § 7413(b), as amended by the Clean Air Act Amendments of 1990.[5] Inspectors detected conditions that may violate the federally-enforceable State Implementation Plan (SIP).

The University apparently violated the SIP by failing to obtain a permit to construct temporary boilers pursuant to the applicable state regulation ("minor source permit"). The regulation requires a source to obtain a preconstruction permit prior to constructing, installing or modifying fuel burning equipment designed to burn liquid fuels, other than residual oil having a heat input capacity of 5,000,000 Btu/hour or more.[6]

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[5] Pub. L. No. 101-549, 104 Stat. 2399. The Clean Air Act (the "Act") is codified at 42 U.S.C. § 7401 et seq.

[6] In its response to the Region's information request letter, the University supplied data proving that all temporary boilers operate at levels above the permit threshold. Specifically, boiler No.l generates 12.553 mmbtu/hr; boiler No. 2 generates 20.992 mmbtu/hr; and, boilers

The State has adopted an applicable implementation plan (the SIP) within the meaning of Sections 110 and 302 of the Act, 42 U.S.C. §§ 7410 and 7602. The SIP includes a regulation entitled "Approval to Construct, Install, Modify or Operate." This regulation specifies that a permit to construct, install or modify is required for (among other devices) equipment designed to burn liquid fuels other than residual oil, having a heat input capacity of 5,000,000 Btu/hour or more.[7]

Between September 1998 and January 2000, the University installed and operated temporary boilers. (These were installed so that the University could construct a new set of permanent boilers that complied with the CAA.) During its multimedia inspection, EPA became aware of the existence of these temporary boilers. In order to gather more information, EPA issued an information request to the University pursuant to Section 114 of the CAA, 42 U.S.C. §7414. The University responded to EPA's information request with documents leading EPA to conclude that it was in violation of the state regulation, due to its failure to apply for and obtain minor source preconstruction permits for the boilers. Based on the University's noncompliance with the state regulation and the SIP, EPA issued a Notice of Violation. The NOV was issued pursuant to Section 113(a)(1) of the Act, 42 U.S.C. § 7413(a)(1). The NOV ordered the University to comply with the requirements of the state regulation and SIP. See Exhibit 13.

SPCC Trip Report under the Clean Water Act[8]

EPA inspectors reviewed the University's oil storage tank inventory. This document lists 187 ASTs (above ground storage tanks) with a total capacity of 187,000 gallons of oil; and, 15 USTs (underground storage tanks) with a total capacity of 300,000 gallons of oil. Additionally, the University has twelve out of service ASTs and 3 out of service USTs which have stored oil in the past. Thus, the University meets the minimum storage requirements subjecting it to CWA jurisdiction set out in Part 112.

Inspectors moved on to an inspection of the University's records. This review demonstrated that the University failed to prepare a written SPCC plan until April 1997.[9] Moreover, the SPCC plan was inadequate:

No. 3 and 4 each generate 25.106 mmbtu/hr.

[7] The temporary boilers are well above the threshold levels triggering these permit regulations; the maximum designed heat input of each boiler is above 5,000,000 mmbtu/hr.

[8] See Section 311 of the Clean Water Act and its implementing regulations at 40 C.F.R. § 112 et seq. Also see 40 CFR § 110.

[9] The University owned and operated its facilities prior to January 10, 1974. Thus, it was required to have a written SPCC plan on file since July 10, 1974 and was required to have it fully implemented by January 10, 1974. See 40 CFR § 112.3(a).

1. The plan failed to predict the direction, rate of flow and total quantity of oil which could be discharged from the facility as a result of each major type of equipment failure. This violates 40 CFR § 112.7(b).

2. The plan contained an inaccurate oil storage tank inventory; this is a minimum requirement of any "well thought out plan" as described in the regulations

3. The University failed to document performance of "periodic" testing on its ASTS and USTs, per 40 CFR § 112.7(e)(2)(vi).

4. The SPCC plan did not address the need for secondary containment or diversionary structures, per 40 CFR § 112.7(c).

5. The SPCC plan was not reviewed and certified as prepared in accordance with "good engineering practices" by a professional engineer (P.E.) familiar with the subject facility and the oil pollution prevention regulations. See 40 CFR § 112.3(d).

6. Pursuant to 40 CFR § 112.5(a), the University must amend its SPCC plan and implement appropriate amendments within six months of a change in facility design, construction, operation or maintenance materially affecting the facility's potential to discharge oil into or upon navigable waters of the U.S. Additionally, pursuant to § 112.5(b), the University must review and evaluate its SPCC plan at least once every three years from the date the facility became subject to Part 112. Finally, within six months of a review, the University must amend the plan and certify that the amendment includes more effective prevention and control technology under the following conditions: the technology will significantly reduce the likelihood of a spill, and; that the technology has been field-proven. Based on discussions with University representatives, it is obvious that the SPCC plan was not reviewed every three years. (In fact, the University's officials admitted that they did not possess an accurate inventory of its ASTs and USTs.) The lack of adequate containment indicates that the plan was never amended to include more effective containment technologies.

University officials stated that the school is expanding and buying property on a routine basis. Purchases of new property, especially property that increases oil storage capacity, materially affect the facility's potential to discharge oil to navigable waters. EPA will engage in more research to determine which of the University's transactions (if any) require SPCC amendments.

EPCRA Inspection

Section 302(c) states that where Extremely Hazardous Substances are present at any time in excess of Threshold Planning Quantities, facilities must notify the State Emergency Response Commission (SERC) to ensure inclusion of these facilities in area emergency planning activities. Two Extremely Hazardous Substances are present at this facility mandating notification under Section 302 (c): potassium cyanide and anhydrous ammonia. Initial notification to the State SERC was made via letter. Assuming that threshold planning quantities (TPQ) of these

Extremely Hazardous Substances have been on-site since inception of operations, notification should have been occurred no later than 60 days after that date.

Section 303(d)(1) states that facilities subject to Extremely Hazardous Substance reporting requirements (under Sec. 302) must identify the facility representative who will participate in the emergency planning process as a facility emergency coordinator. This identification should be made to the Local Emergency Planning Committee (LEPC).

Robert Dornan (no longer associated with the University) was designated as the facility's emergency coordinator by letter in March 1999. Assuming that the LEPC was fully constituted at the time, the facility should have provided notification as soon as it was subject to emergency planning requirements; i.e., no later than the 302(c) SERC notification. As of the inspection date, no replacement had been designated.

EPCRA Section 304/CERCLA Section 103 states that when a release of an Extremely Hazardous Substance or CERCLA hazardous substance (40 CFR Table 302.4) occurs, the owner/operator must instantly report it to the LEPC, SERC and the National Response Center.[10] Section 304(c) also requires that a written follow-up report be submitted to the LEPC and SERC, providing updated information on the release.

No spills or releases triggering the notification provisions of CERCLA Section 103/EPCRA Section 304 have occurred at this facility. Facility management personnel were familiar with release notification provisions of CERCLA and EPCRA.

Section 311 (Tier II) requires facilities to submit material safety data sheets (MSDS) or chemical lists to the SERC, LEPC and local fire department for each hazardous chemical on-site exceeding 10,000 lbs.[11] Facilities reporting under Section 311 are required by Section 312 to submit annual Tier II Emergency and Hazardous Chemical Inventory forms.[12]

Compliance is facilitated when management regularly reviews its chemical inventory data from purchasing invoices. This review should be supplemented by visual examination of all on-site materials. EPA's review of hazardous material lists disclosed three chemicals on site at threshold quantities (TQ) requiring Tier II reporting : anhydrous ammonia (TQ=500 lbs, used as an annealing agent, stored in an external 9000 lb tank); potassium cyanide (TQ=10 lbs, stored in 8 50 lb steel drums within a pilot manufacturing area); and, #2 fuel oil (TQ=10,000 lbs, stored in a 15,000 gallon underground storage tank). See Exhibit 14.

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[10] Such a release must be an amount equal to or exceeding the Reportable Quantity (RQ) for that substance

[11] 500 lbs or the TPQ (if lower) for each Extremely Hazardous Substance.

[12] This must be done by March 1 for materials stored above thresholds during the previous calendar year.

Review of available Tier II forms shows ammonia and potassium cyanide were properly listed and forwarded to the SERC, LEPC and local fire department only for calendar years 1996 and 1997. However, the 1996 form was unsigned and undated. Neither the 1996 nor 1997 form listed #2 fuel oil. The 1996 form was later supplemented with a second Tier II form dated July 31, 1997. See Exhibit 14. The 1997 Tier II form was submitted on February 17, 1998 (due 3/1/98). It was supplemented by a comprehensive Master Chemical List mailing to the Fire Department on March 5, 1998. See Exhibit 14. Facility officials stated that such updated chemical lists, which include all chemicals stored at the facility irrespective of quantity, are provided to the fire department annually.

It appears that ammonia, potassium cyanide and fuel oil were on site during two calendar years, 1994 and 1995. Thus, Tier II forms should have been prepared and submitted for those years as well.

Recommendations

It is recommended that the University take certain actions to assure full conformance with the letter and spirit of EPCRA.

1. Designate a facility emergency coordinator in accordance with EPCRA Sec. 303 (d) to replace Mr. Dornan and immediately communicate this change to the local emergency planning committee;

2. Modify the latest year calendar year Tier II form (1997) to include fuel oil present in excess of 10,000 lbs as part of inventory listings. Immediately transmit corrected forms to the SERC, LEPC and local fire department (EPCRA Sec. 312 (a));

3. Contact the SERC, LEPC and local fire department to determine if CY 1994 and 1995 Tier II forms are required. Based on information provided during the inspection, it appears that Tier II forms listing ammonia, potassium cyanide and fuel oil should have been submitted by March 1, 1995 (CY 1994) and March 1, 1996 (CY 1995);

4. Modify or adjust inventory control procedures to flag data on existing or new chemical materials coming on site that exceed EPCRA quantity thresholds. If so, MSDS must be provided to the SERC, LEPC and local fire department within 90 days; and,

5. As part of written operational procedures, assure that 50 lb drums of potassium cyanide are properly secured and not stored with incompatibles (acids) capable of generating hydrogen cyanide in the event of a spill or fire. If not already part of operating policy, it is recommended that access to this highly toxic material be restricted to trained and specifically designated individuals.

Exhibits

1. EPCRA team attendance list
2. University/SERC Section 302 notification letter
3. University/LEPC Section 303 emergency coordinator letter
4. Extremely Hazardous Substance Materials list
5. MSDS for anhydrous ammonia and potassium cyanide
6. 1996 Tier II chemical inventory forms (2)
7. 1997 Tier II chemical inventory form
8. University/LEPC Master Chemical List letter

Out briefing

An out brief was conducted at the conclusion of the multi-media inspection. Those in attendance included Wolf J. Flywheel, U.S. EPA (RCRA); John Jones U.S. EPA (CWA); Steven Smith U.S. EPA (CAA); Ty Law U.S. EPA (EPCRA); Rufus T. Firefly State Department of Environmental Management(DEM); and, Orlando Offal, of the University's Department of Safety & Risk Management. The inspection team provided the University with a summary of its areas of concern resulting from the inspection. The various types of enforcement follow-up were reviewed, questions taken and responded to.