

PCBs – Disposal of Capacitors and Light Ballasts

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1 . General

1.1 Purpose

This practice establishes guidelines and policy for the identification, removal, and disposal of polychlorinated biphenyls (PCBs) in:

- Small capacitors.
- Fluorescent light ballasts.

1.2 Filing Instructions

File this practice in numerical order in your practices set.

1.3 Copyright and Responsibility

This practice was published by the GTE Telephone Operations Administrative Services Department. For **more information** about this practice contact the Headquarters Employee Safety Services Department, Environmental Compliance Staff .

No part of this work may be reproduced or copied in any form or by any means -- graphic, electronic, or mechanical, including photocopying, recording, taping, or information storage and retrieval systems -- without the written permission of the Administrative Services Department, GTE Telephone Operations Headquarters, Irving, Texas.

I.General, continued

1.4 Disclaimer

This practice has been prepared solely for the use of GTE Telephone Operations. It must be used only by its employees, contractors, customers and end users, when installing, operating, maintaining, and repairing GTE Telephone Operations' equipment, facilities and services. Any other use of this practice is forbidden. The information contained in this practice may not be applicable in all circumstances and is subject to change without notice. By using this practice the user agrees that GTE Telephone Operations will have no liability (to the extent permitted by applicable law) for any consequential, incidental, special, or punitive damages that may result.

2. Overview

2.1 Introduction

Polychlorinated biphenyls (PCBs) are heavy, oily compounds found in the dielectric fluids of certain:

- Electrical transformers.
- Fluorescent light ballasts.
- Capacitors.

CAUTION: Take proper precautions when handling PCBs.. They:

- **Are toxic.**
- **Are suspected human carcinogens.**
- **Create hazardous by-products when burned.**
- **Are regulated under federal and state environmental regulations.**

2.2 Objectives

The objectives of this practice are to help ensure that:

- the safety and health of GTE Telephone Operations employees and the general public are protected.
- The environment is protected from damage resulting from improper PCB disposal.
- GTE Telephone Operations is in compliance with all applicable federal, state, and local regulations.

2.3 Acronyms and Definitions

Acronym	Definition
DOT	Department of Transportation
EPA	Environmental Protection Agency
ORM-E	Other Regulated Material – Hazardous Substance
PCB	Polychlorinated Biphenyl

3. Safety Precautions

3.1 Introduction

PCBs found in GTE Telephone Operations facilities are generally enclosed in sealed units such as capacitors and lamp ballasts. They pose little threat provided the unit is not:

- Broken and the fluid released.
- Burned and toxic substances released.

3.2 Skin and Eye Protection

Severe skin irritation can result from contact with PCBs. When working with PCB capacitors or light ballasts, wear:

- Chemical-resistant gloves.

AND

0 Safety goggles.

3.3 Fire Protection

Oil containing PCBs may burn when exposed to heat or open flames.

CAUTION: **Keep all sources of heat away from items containing PCBs.**

3.4 Toxic Vapors/ Substances

Respiratory tract irritation can result from breathing PCB vapors. Several hazardous substances may be produced when PCBs are burned, including:

- Dioxins.
- Furans.
- Chlorine gas.
- Hydrochloric acid.

CAUTION: **Do not breathe the smoke or vapors. Avoid contact with residue from the smoke.**

4. First Aid

4.1 Contact With Eyes

If PCB liquid contacts the eyes:

- Flush eyes **immediately** with water for 15 minutes.
- Wash face with soap and water.
- Have eyes examined by a physician **immediately**.

4.2 Contact With Skin

If PCB liquid contacts the skin:

- Remove and isolate contaminated clothing.
- Wash skin with soap and water.
- Call emergency medical assistance, if necessary.

5. Emergency Procedures

5.1 Fire Procedures

If a fire occurs in an area containing PCBs, warn Fire Department personnel of the special danger.

Before attempting cleanup, contact the:

- Supervisor of the facility.
- GTE Area Environmental Compliance staff.

5.2 Spill Procedure

Human exposure to PCBs is not hazardous provided certain precautions are observed. To protect against the hazard of splashes or spills, an employee cleaning up a leaking capacitor or fluorescent light ballast must wear:

- PCB-resistant gloves.

AND

- A face shield and goggles.

Obtain these items from the PCB Spill Kit (MC 833413). If disposable clothing is worn, discard it after handling PCBs.

In the event of spills, perform the following cleanup steps.

Step	Cleaning Up PCB Spills
1	Absorb all spilled PCB fluid with sorbent sheets, sand, or one of the following noncombustible absorbent materials. <ul style="list-style-type: none">• Activated charcoal.• Diasorb (by Diamond Shamrock, Cleveland, OH).• Hy-Dry.• Imbiber Beads.• Oil-Dry (by Waverly Mineral Products, Philadelphia, PA).• Oil-Sorb.• Sawdust.• Soil with high humus content.• Sorbent-C.• Stay-Dry (by Waverly Mineral Products, Philadelphia, PA).• Vermiculite.
2	Clean any contaminated tools or equipment.
3	Place all contaminated materials in a leakproof container for shipment, including: <ul style="list-style-type: none">• Leaking PCB components.• Cleanup materials.• Gloves and disposable clothing,
4	Clean up using a solvent or soap and water.
5	Contact the GTE Area Environmental Compliance staff for instructions on proper disposal.

5. Emergency Procedures, continued

5.3 PCB Spill Kit

The following chart contains ordering information for the PCB Spill Kit.

Item	Material Code
Kit, PCB Removal	888413
Case, PCB Removal	888414
Glove, Silver Shield	888415
Apron, Saranex-Laminated	888416
Tape, Barrier Work Zone	888417
Sheets, Sorbent	888418
Glove, Nitrile Over	589622
Shield, Monoshield	589366
Goggles, Chemical Splash	589367
Bag, PCB, Silver Shield	889159

NOTE: **Additional ordering information and PCB disposal kit part numbers are listed in Product Standardization Bulletins (PSB) #5974 and #2626.**

6. PCB Identification

6.1 Characteristics of PCBs

Polychlorinated biphenyls (PCBs) are added to the dielectric fluid of certain electrical equipment. Dielectric fluid that contains PCBs:

- Looks and feels like oil.
- Emits a characteristic bitter odor.
- Has a high specific gravity (oil floats on water while PCBs sink).
- Has a high chlorine content.

Positive identification requires laboratory analysis. Contact the Area GTE Environmental Compliance staff if identification of a suspect liquid is required.

6. PCB Identification, continued

6.2 PCB Manufacturer and Trade Names

Monsanto Chemical Company, the sole **manufacturer** of PCBs in North America, discontinued production of the chemical in 19n. However, PCBs were marketed by several other companies under these trade names:

- Aroclor
- Aroclor B
- Asbestol
- Askarel
- Chlorectol
- Clorinol
- Clorphen
- Diachlor
- DK
- Dykanol F,G,L,XL
- Elemex
- Eucarel
- Fenclor
- Hyvol
- Inerteen
- Kennechlor
- No-Flamol
- Penoclor
- Pharlene
- Phdraul
- Pykanol
- Pyranol
- Pyroclor
- Saf-T-Kuhl
- Santotherm
- Therminol

NOTE: **In some cases the brand name or trade name is printed on the exterior of the capacitor.**

6.3 Equipment Containing PCBs

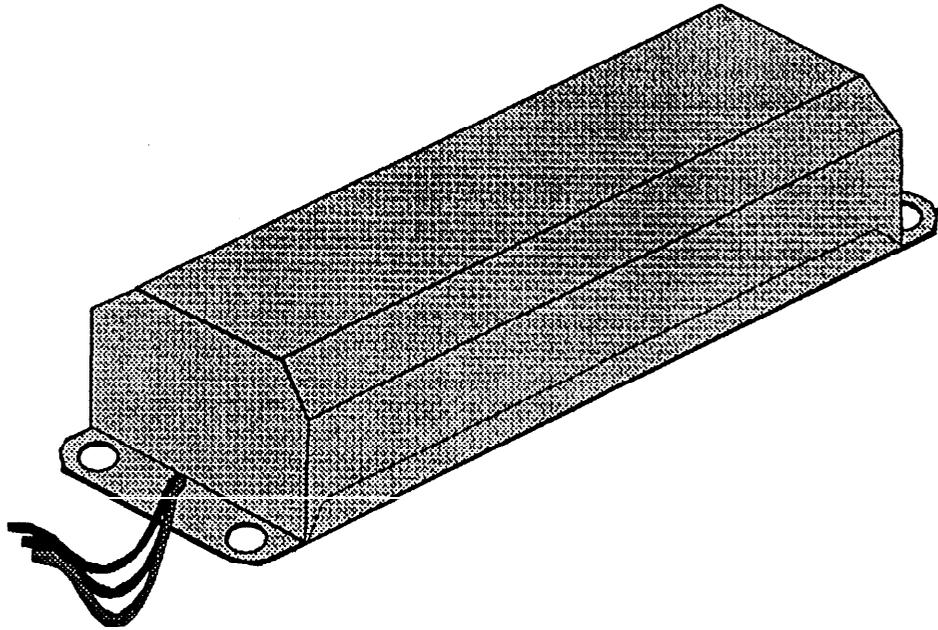
PCBs may be found in the dielectric fluid of:

- Electrical transformers.
- Fluorescent light ballasts.
- Capacitors found in:
 - Electrical chargers.
 - Rectifiers.
 - Power supplies.
 - Computer printers.
 - Inverters.
 - Interrupters.
 - Air conditioning units.
 - Elevators.
 - Other electrical equipment.

6. PCB Identification, continued

6.4 Fluorescent light Ballasts

A fluorescent light ballast electrically controls fluorescent light fixtures and includes a capacitor containing dielectric fluid. An example of a fluorescent light ballast is illustrated below.



6. PCB Identification. continued

6.5 Small Capacitors

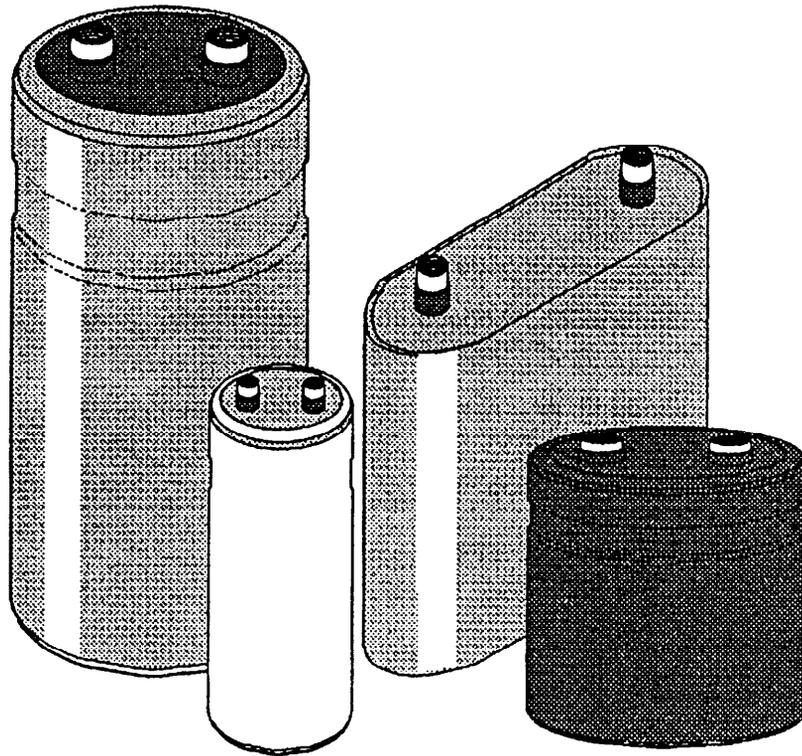
The EPA defines a small capacitor as one that:

- Contains less than three pounds of dielectric fluid.
- Has a total volume of less than 100 cubic inches.

Characteristics of a small capacitor include:

- Hermetically sealed metal-can electrolytic capacitors (usually designated by +/- on the capacitor or on the schematic diagram of the equipment containing the capacitor).
- Often designated by Cxx, (where xx denotes the capacitor number), on:
 - the exterior of the capacitor.
 - The schematic diagram of the unit.
- Cylindrical in shape with a:
 - Length of one to six inches.
 - Diameter of one-half to three inches.
- Weight ranging from approximately six ounces to two pounds.

Examples of small capacitors are illustrated below.



6. PCB Identification, continued

6.6 Identifying Equipment Containing PCBs

Equipment containing PCBs can often be identified by the label. The label may:

- State, "Contains No PCB."
- List the trade name of the dielectric fluid.

While the label will not specify that the equipment contains PCBs, it may list the trade name of one of the PCB products.

Use the following information in this practice to help identify equipment containing PCBs.

information regarding...	Is presented in...
Trade names for products containing PCBs	Paragraph 6.2.
Capacitors possibly containing PCBs (includes illustration)	Paragraph 6.5.
Light ballasts possibly containing PCBs (includes illustration)	Paragraph 6.4.
Part numbers of capacitors possibly containing PCBs	Exhibit 1.
Products (by model or part number) containing one or more of the capacitors listed in Exhibit 1	Exhibits 2-5.

NOTE: These are not complete lists of all the equipment and capacitors that contain PCBs.

6.7 Positive Identification

Treat equipment as if it contains PCBs, unless you can **positively** determine that it does not.

7. PCB Capacitors – Central Office Equipment

7.1 Identification

Network Engineering is responsible for:

- Providing written notice by placing a general note in the Central Office/PBX requirement work order stating:

“Power equipment being removed by this work order may contain PCB components and must be visually inspected for these items. Refer to GTE Telephone Operations Practices 122-205-003 and 220-000-200.”

- Placing the note on:
 - the face sheet of the work order.
 - the installer’s notes.

7.2 Removal

Remove PCB capacitors from the Central Office equipment according to the following chart.

PCB Capacitors From...	Must be Removed at the...
COE equipment	<ul style="list-style-type: none">• Job site.• COE Service Center (Southwest Area).• Reclamation Center (California).
GTD 60 and 120 PBX	Equipment Service Center.
All PBXs other than GTD 60 and 120	<ul style="list-style-type: none">• Job site.• COE Service Center (Southwest Area).• Reclamation Center (California).

7.3 Discharging and Packaging PC8 Components

Ensure that PCB components are discharged prior to removal. Package PCB components in leakproof containers provided by GTE Supply.

7.4 Labeling

Each piece of PCB-bearing equipment to be discarded must be:

- Marked “Contains PCB” with bright fluorescent orange paint.
- OR
- Labeled “Contains PCB.” Obtain labels (illustrated below) from the Area Environmental Compliance staff.



8. Light Ballasts

- 8.1 Identification** Building, Fleet, and Energy personnel are responsible for identifying all **fluorescent light ballasts containing PCBs at the time they are** removed from service.
- 8.2 Removal** **Remove all ballasts** suspected of containing PCBs from the lighting equipment, and place them in drums at the job site.
- 8.3 Labeling** **Label or mark** all drums containing PCB light ballasts, "Contains PCBs."

9. Public Telephone Booths and Signs

- 9.1 Identification** Public Communications Field Operations electrical contractors are responsible for identifying all public telephone booth and signage **fluorescent** light ballasts containing PCBs at the time the light fixture is repaired or removed from service.
- 9.2 Removal** Light fixtures with ballasts suspected of containing PCBs must be returned to the **assigned** equipment supply point.
- Area Supply is responsible for:
- Collecting light fixtures with ballasts suspected of containing PCBs.
- AND
- Shipping the light fixtures to the designated accumulation site.
- 9.3 Labeling** Light fixtures with ballasts suspected of containing PCBs must be labeled or marked "Contains PCBs."

10. Accumulation Sites

10.1 List of Accumulation Sites

The following chart provides a listing of approved accumulation sites.

NOTE: Area Environmental Compliance staffs and Area Supply Staffs are responsible for determining the location of the accumulation sites.

Location:	Accumulation Site(s) Located at:
North Area	Bloomington Supply Center Route 9 West, Bldg. #3 Bloomington, IL 61701
	Fort Wayne Supply Center 3301 Wayne Trace Fort Wayne, IN 46801
	Grinneii Supply Center 11 Eleventh Street Grinnell, IA 50112
	Muskegon Supply Center 2441 Oithoff Drive Muskegon, MI 49443
	Columbia Supply Point 3014 Lemone Industrial Blvd. Columbia, MO 65201
	Columbus Supply Point 704 23rd Street Columbus, NE 68601
	Columbus Supply Center 3635 Zane Trace Road Columbus, OH 43228-3852
Sun Prairie Supply Center Highway 19 Sun Prairie, WI 53590	
Southwest Area	Scrap Accumulation Site 2622 Anjou Drive Dallas, TX 75220
Hawaii	Moanaiua Base Yard 1021 Kikwaena Place Honolulu, HI 96819
South Area	Main Warehouse 8800 Adamo Drive Tampa, FL 33619
Northwest	Everett Supply Point 2600 W. Casino Road Everett, WA 98206
California	Scrap Accumulation Site Contact: Environmental Compliance 800-331-8891

10. Accumulation Sites, continued

10.2 Supervisor's Responsibilities

The supervisor of the accumulation site is responsible for:

Transferring PCB components into DOT 17C 5%gallon barrels ordered by GTE Supply

- Placing on at least one side of each barrel the:
 - ORM-E label (see illustration on following page).

AND

- Hazardous Waste label (see illustration on following page).

NOTE: **Obtain these labels from the Area Environmental Compliance staff.**

- Performing weekly inspections for leaks or indications of corrosion.
- Permanently maintaining an Accumulation Point Facility inspection Log Sheet (Form 000536HQ, Exhibit 7) at the location to document that the containers have been inspected weekly.
- Providing sufficient aisle space between containers to allow access for inspections and emergency response.

0. Accumulation Sites, continued

10.2
Supervisor's
Responsibilities,
continued

POLYCHLORINATED BIPHENYLS

ORM-E

RQ

UN2315

RQ15 Printed by Labelmaster, Chicago, IL 60646

HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL

PROPER D.O.T. SHIPPING NAME

IF FOUND CONTACT THE NEAREST POLICE
OR PUBLIC SAFETY AUTHORITY OR
U.S ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION:

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

E. P. A. IDENTIFICATION NO. _____

MANIFEST DOCUMENT NO. _____

ACCUMULATION START DATE _____

CONTAINS HAZARDOUS OR TOXIC WASTES

HANDLE WITH CARE!

11 . Transportation to Accumulation Sites

11.1 Regulations

There are no federal regulations on the transportation of small capacitors and light ballasts from the job site to the accumulation site.

11.2 Packaging

Components containing PCBs must be protected from damage during transportation to prevent the dielectric fluid from spilling. Use the following guidelines.

Equipment Such as...	Must be Shipped...
Rectifiers, chargers, and power supplies	As complete units. Ensure that they are protected from damage.
Circuit cards and relay rack equipment	in packages to protect the equipment from breakage.
individual capacitors and light ballasts	In leakproof drum with : <ul style="list-style-type: none">• Chemical absorbant. OR <ul style="list-style-type: none">• Each component in a Silver Shield Bag (Form 889159).

11.3 Shipping Papers

If the PCB **material in the container** weighs more than ten pounds, the department responsible for transporting the PCB components must complete a Hazardous Materials Shipping Paper (Exhibit 6, Form 000535HQ) for shipment of PCB items from the job site to the accumulation site.

Maintain copies of the Hazardous Materials Shipping Paper permanently at the accumulation site in a separate file, and forward a copy to the GTE Area Environmental Compliance staff.

11.4 Transportation

GTE Supply and the department removing the PCB items coordinate the most practical means of transporting the PCB Components from the job site to the accumulation site.

CAUTION: Do not transport PCB component parts in personal vehicles from the job site to the accumulation site.

11.5 Driver Responsibilities

Drivers of vehicles hauling hazardous materials must ensure the Hazardous Materials Shipping Paper is readily available and recognizable by authorities in case of an:

- Accident.
- inspection.

12. Disposal of PCB Components

12.1 Approved Vendors

Any vendor or contractor used for transport and disposal of PCB components must:

- Be a GTE-approved contractor.
- Have a current General Agreement in place with GTE Telephone Operations for the removal, transport, and disposal of **PCBs**.

Contact the Area Environmental Compliance staff for a list of vendors and contractors approved for removal, transport, and disposal of **PCBs**.

12.2 Vendor Approval

The Environmental Compliance Staff is responsible for the vendor approval process of all vendors who transport or dispose of **PCBs**. This approval must include:

- A review of the vendor's financial status.
- A background check.
- An environmental review and site audit.

12.3 Uniform Hazardous Waste Manifest

Complete a Uniform Hazardous Waste Manifest (see Exhibit 8 for an example) for each shipment of PCB components that leave GTE premises.

Contact the Area Environmental Compliance staff for:

- Copies of the Uniform Hazardous Waste Manifest.
- instructions on completing the form.

12.4 Disposal Process

The supervisor of the accumulation site is responsible for:

- Monitoring the transport contractor to ensure that the **PCBs** are properly packaged and loaded.
- Ensuring that the Uniform Hazardous Waste Manifest is:
 - Obtained from the Environmental Compliance staff.
 - Completed properly. (See Exhibit 9 for information.)
 - Signed by the transportation vendor.
- Forwarding a copy of the signed form to the Area Environmental Compliance staff, who maintains the Manifest in a permanent file.
- Maintaining a copy of the signed Manifest in a permanent file.

Exhibits

Following is a list of part numbers of capacitors that possibly contain PCBs. If a capacitor is marked "NON-PCB" on the bottom or side of the can, it does not contain PCBs.

Conklin Instrument Part Numbers:

618-3
4485
4486
4487
4488
4685
4686
4687
4688
520
5200

Digital Equipment Part Numbers:

10-00034
10-02038
10-05767
10-09397-00
10-09397-01
10-09397-02
10-09122
10-10057
10-10604

Loraine Part Numbers:

2714-515	2714-549	2714-590	2714-766	2716-331
2714-518	2714-550	2714-595	2714-775	2716-341
2714-525	2714-554	2714-599	2714-783	2716-351
2714-528	2714-557	2714-600	2716-391	2716-354
2714-533	2714-558	2714-605	2716-302	2716-355
2714-534	2714-560	2714-624	2716-303	2716-357
2714-537	2714-574	2714-641	2716-305	2716-359
2714-538	2714-577	2714-716	2716-306	2716-360
2714-541	2714-582	2714-740	2716-311	2716-361
2714-542	2714-583	2714-748	2716-315	2716-368
2714-544	2714-584	2714-756	2716-316	2716-391
2714-547	2714-589	2714-763	2716-329	

Mallory Part Numbers:

All parts beginning with PVC

Tektronix Part Numbers:

132	4602	515A
453	4610	516
R453	4620	556
454	502A	R556
R454	R502A	576
MOD 163D	505	576H
4601	R515	703H

Exhibits, continued

Western Electric Part Numbers:

287A	310B	D-I 70381	KS-13552	KS-16840-L4
287B	524A	O-172225	KS-13553	KS-16840-L5
287C	A-151939	GA-51451	KS-13554	KS-16840-L6
287D	A-151997	KS-5560	KS113555	KS-16840-L7
288A	A-152459	KS-5560-L2	KS-I 3557-L1	KS-16840-L8
288B	D-91281	KS-13456	KS-13558	KS-16840-L9
289A	D-91282	KS-13458-L1	KS-I 3559	KS-16840-L10
289B	D-96859	KS-I 3458-E	KS-I 3950	KS-I 6840-L11
289C	D-96860	KD-13460	KS-13967-L1	KS-I 6840-L12
2890	D-96860	KS-13461	KS-I 3982-L1	KS-16840-L13
291A	D-96887	KS-13462	KS-1 4179-L1	KS-16840-L14
292A	D-96963	KS-I 3463	KS-I 4258-L1	KS-16840-L15
293A	D-96966	KS-I 3463-L1	KS-I 4395-L1	KS-16840-L16
2938	D-9741 2	KS-13464	KS-I 4433-L1	KS-16840-L17
293c	D-97413	KS-I 3465	KS-14536-L1	KS-16840-L18
294A	D-155002	KS-I 3466	KS-I 6488-L1	KS-16840-L19
295A	D-157631	KS-I 3467	KS-I 6704-L1	KS-19388-L1
296A	D-157934	KS-13468	KS-I 6704-L2	KS-19388-L2
297A	D-157990	KS-13469	KS-I 6704-L3	KS-I 9388-L3
298A	D-159047	KS-13470	KS-16704-L4	KS-19388-L4
299A	D-I 60797	KD-13471	KS-16704-L5	KS-1 9388-L5
300A	O-161659	KS-I 3472	KS-16704-L6	KS-20588-L1
301A	O-161832	KS-13473	KS-16704-L7	KS-20588-L2
302A	D-161634	KS-13474	KS-16704-L8	KS-20588-L3
303A	D-162003	KS-1 3475	KS-16782-L1	KS-20588-L4
304A	D-I 62400	KS-I 3476	KS-I 6782-L2	KS-20588-L5
304B	D-I 62860	KS-13499	KS-I 6782-L3	KS-20588-L6
305A	D-I 62861	KS-I 3547-L10	KS-I 6782-L4	KS-20588-L7
306A	O-163716	KS-13548-U	KS-I 6782-L5	KS-20588-L8
307A	D-I 65577	KS-13549-L2	KS-I 6801-L1	KS-20588-L9
3070	D-I 66602	KS-13550	KS-1 6801-L2	KS-20588-L10
307C	D-I 69004	KS-13550-L2	KS-I 6840-L1	KS-I 0588-L11
308A	D-170379	KS-13550-G	KS-1 6840-L2	KS-20588-L12
310A	D-I 70380	KS-13551-L2	KS-1 6840-L3	KS-I 0934-L1

Exhibit 1 - PCB Capacitors, Part Numbers (Page 2 of 2)

Exhibits, continued

Model No.	FD No.	Matl. Code	Spec No.	Description
3B2		**	5773-002	Power Supply
6B8	*	**	5774-007	Power Supply
10B1	*	411814	5354-006	Power Supply
12A2	*		5733-015	Power Supply
30B4	*	411810	5748-004	Power Supply
30B6	*	784949	5412-008	Power Supply
	*	718156	5777-009	Power Supply
30B9	*	**	5413-001	Power Supply
50B6	*	718157	5777-010	Power Supply
102CAB	*	**	5174-316	Inverter
102GAB	*	**	5174-316	Inverter
103CAH	*	**	5178-711	Inverter
103CQH	*	**	5178-708	Inverter
103GQH	*	**	5178-709	Inverter
202CAB	*	**	5175-316	Inverter
202GAB	*	**	5175-309	Inverter
202GGB	*	**	5167-007	Inverter
202GGB	*	**	5172-802	Inverter
501GAB	*	**		Inverter
50ICAB	*	**	5173-307	Inverter
501 CAB	*	**	5173-310	Inverter
502CQB	*	**	5177-307	Inverter
502CAB	*	**	5177-310	Inverter
502CQH	*	**	5177-705	Inverter
502GQH	*	**	5177-710	Inverter
50-2CAH	*	**	5177-711	Inverter
AP300A2	*	712197	5216-010	Discharger/Charger
BC20X	*		5144-001	Generator RING
BC20Z	*	**	5162-002	Generator RING
BC30X	*	412301	5162-004	Generator RING
BX60	*	702084	5151-001	Generator RING
CM25F7	1 05BA	783012	5215-010	Charger EC 25A
CM25F50	1046CS10	711351	5411-035	Charger 25A
CM25F50				Charger 25A
CM50F50	1046CS12	711353	541 5431-014 1-036	Charger 50A
CM50F50	1046CS13	711354	5431-016	Charger 50A
CM50D50	1046CU12	711373	5431-014	Charger 50A
CM50D50	1046CU13	711374	5431-016	Charger 50A
CM50F7	1050AW	783685	5454-012	Rectifier EC
CM100F50	1056CS14	711355	5451-013	Charger 1 00A
CM100F50	1046CS15	711356		Charger 1 00A
CM200D50	1050AY	782779	5216-014	Charger 1 00A
CM200D50	1046CU16 1046CU17	711377 711378	5472-007 5472-006	Charger 200A
CM200E50	1046CW10	711385	5475-006	Charger 200A
CM200F7	1046CW11 1050AU	711386 783084	5475-007 5216-015	Charger 200A
				Charger EC 200A
CM400D50	1046CU18	711379	5481-015	Charger 400A
CM400E50	1046CU19	711380	5481-017	Charger 400A
CM400E50	1046CW12	711387	5482-005	Charger 400A
	1046CW13	711386	5486-006	Charger 400A
CM800D50	1046CU26	711381	5484-024	Charger 800A
CM800D50	1046CU27	711382	5484-025	Charger 800A
CM800D50	*		5484-024	Rectifier 800A
CM800D50	*	**	5484-017	Rectifier 800A
CM800D50	*	**	5484-018	Rectifier 800A
CM800E50	*	**	5484-014	Rectifier 800A
CM800E50	*	**	5484-015	Rectifier 800A
CM800E50	1046CW20	711389	5485-015	Charger 800A
	1046CW21			Charger 800A

Exhibit 2 - Lorain Products Containing PCB Capacitors (Page 1 of 4)

Exhibits, continued

Model No.	FD No.	Matl. Code	Spec No.	Description
CM800E50	*	**	5485-010	Rectifier 800A
CM800M50	*	**	5485-005	Rectifier 800A
CM1600D50	*	**	5487-003	Rectifier 1600A
CM1600D50	*	**	5487-004	Rectifier 1600A
CM1600D50	1046CU34	711383	5487-009	Charger 1600A
CM1600D50	1046CU35	711384	5487-010	Charger 1600A
CM1600E50	*	**	5487-205	Rectifier 1600A
CM1600E50	*	**	5487-206	Rectifier 1600A
CM1600E50	1046CW28	71 1391	5487-211	Charger 1600A
CM1600E50	1046CW29	711392	5487-212	Charger 1600A
CL30F50	1946DJ	711766	5411-041	Charger 30A
CL50F50	1046DL	711767	5431-022	Charger 50A
CL100F50	1046DM	711768	5452-007	Charger 1 00A
CST7	*	**	5664-021	Power Supply
D102CAB	*	**	5174-314	Inverter
DI 02CAP	*	**	5174-318	Inverter
D102CAB	*	**	5174-319	Inverter
D102GAB	*	**	5174-317	Inverter
D103CAH	*	**	5178-712	Invetter
D103GQH	*	**	5178-707	Inverter
D103CQH	*	**	5178-706	Inverter
D202CAB	*	**	5175-313	Inverter
D202CAB	*	**	5175-314	Inverter
D202CAB	*	**	5175-302	Inverter
D202GAB	*	**	5175-311	Inverter
D501 CAB	*	**	5173-306	Inverter
D501 GAB	*	**	5173-308	Inverter
D502CAB	*	**	5167-005	Inverter
D502CAB	*	**	5177-308	Inverter
D502CAB	*	**	5177-314	Invetter
D502CAH	*	**	5177-712	Inverter
D502CQB	*	**	5177-309	Inverter
D502CQH	*	**	5177-709	Inverter
D502GCQ	*	**	5177-703	Inverter
D502GQB	*	**	5177-314	Inverter
D601 NAM	*	638051	5173-012	Inverter
F150D140	*	723602	5576-002	Rectifier 150A
F400D50	*	795231	5481-001	Rectifier 400A
F400D50	*	795231	5481-004	Rectifier 400A
HM800D50	*	**	5484-021	Rectifier 800A
K25A7	1050AM11	705561	5215-008	Rectifier FLTRL
K25B7	1040JMAS	705376	5215-001	rectifier FLTRL
K25B7	*	705376	5205-004	Rectifier FLTRL
KS5523L1	*	**	5151-002	Rectifier
KS5590L3	*	**	5171-104	Rectifier
KS15661L24	*	**	5281-202	Rectifier
KS1 5661 L30	*	**	5281-205	Rectifier
KS1 9790L12	*	**	5484-005	Rectifier
KS201 42L1	*	**	5216-011	Rectifier
KS20491 L21	*	**	5274-013	Rectifier
KS20493L21	*	**	5451-010	Rectifier
KS20491 L22	*	**	5274-301	Rectifier
KS20493L22	*	**	5452-001	Rectifier
KS20491L23	*	**	5274-014	Rectifier
KS20491 L24	*	**	5274-302	Rectifier
KS20770L1	*	**	5126-016	Rectifier
KS21 113L1	*	**	5578-004	Rectifier
KS21 113L2	*	**	5578-202	Rectifier
KS21 469L1	*	**	5178-710	Rectifier
KS15529L1	*	**	5152-003	Rectifier

Exhibit 2 - Lotain Products Contalning PCB Capacitors (Page 2 of 4)

Exhibits, continued

Model No.	FD No.	Matl. Code	Spec No.	Description
KS21 354L1	*	**	5177-313	Rectifier
KS21 520L11	*	**	5481-030	Rectifier
KS21 520L21	*	**	5481-031	Rectifier
KS21502L22	*	**	5482-014	Rectifier
KS31520L22	*	**	5482-012	Rectifier
L6A50	*	**	5351-004	Rectifier
L12A25	*	783682	5351-004	Rectifier
L12A50	*	783920	5371-015	Rectifier
L20A25	*	**	5351-005	Rectifier
L20F50	*	781695	5371-014	Rectifier
L30F25	*	783526	5261-017	Rectifier
L30F50	*			
L50F25	tt	786364 781594	541 5272-020 1-937	Rectifier Rectifier
L50F50	*	781587	5431-018	Rectifier
L11 OF25	*	785722	5274-015	Rectifier
L100F50	*	705127	5452-003	Rectifier
M400D50	*	716129	5481-009	Charger 400A
M400M50	*	**	5483-303	Rectifier 400A
NRT8A	*	**	5716-002	Interrupter
NRT8AD	*	**	5716-005	Interrupter
NRT8D	*	**	5716-004	Interrupter
NRT8S	*	**	5716-007	interrupter
NRT10	*	**	5716-003	Interrupter
NS04181L1	*	**	5175-318	Inverter
RHM100D50	*	**	5454-008	Charger 1 00A
RHM200D50	*	**	5472-012	Charger 200A
RHM200C50	*	**	5475010	Charger 200A
RHM400C50	*	**	5482-017	Charger 400A
RHM400D50	*	**	5481-029	Charger 400A
RHM400D50	*	**	5481-033	Charger 400A
RHM400E25	*	**	5278-015	Charger 400A
RHM400E50	*	**	5482-016	Charger 400A
RHM800C50	*	**	5485-021	Charger 800A
RHM800D25	*	**	5484-030	Rectifier 800A
RHM800D50	1046EG4	775721	5486-032	Rectifier 800A
RHM800D50	*	775721	5484-030	Charger 800A
RHM800E50	*	724929	5485-020	Charger 800A
RJ25F7	*	788883	5215-012	Battery Charger
RJ6A25	*	413783	5231-011	Battery Charger
RJ20A25	*	788785	5251-008	Rectifier
RJ12A50	*	788613	5371-016	Rectifier
RJ20F50	*	772658	5371-020	Rectifier
RL30F25	1046EF1	786369	5261-021	Rectifier
RL30F50	*	729226	5411-044	Power Supply 30A
RL30F50	1046EH1	724218	541 1-047	Power Supply 30A
RL50F25	*	786364	5272-023	Power Supply 50A
RL50F50	1046EF2	729227	5431-024	Power Supply 50A
RL50F50	*	724219	5431-028	Power Supply 50A
RL100F25	1046EF3	785722	5272-020	Battery Charger
RL100F450	*	715569	5451-019	Battery Charger
RL100F50	*	**	5451-018	Rectifier 1 00A
RL200F25	*	719570	5276-012	Battery Charger
RL200F25	*	**	5276-011	Rectifier
RT1B	1040AL	418001	5472-004	Power Supply
RT2B	*	418002	5743-012	Power Supply
RT2G	*	417663	5743-009	Power Supply
RT3B	*	418003	5742-013	Power Supply
RT3B	1040FM	418003	5742-001	Power Supply
RT3J	*	418034	5742-014	Power Supply
RT3J	1040FM	418034	5742-006	Power Supply

Exhibit 2 - Lorain Products Containing PCB Capacitors (Page 3 of 4)

Exhibits, continued

Model No.	FD No.	Matl. Code	Spec No.	Description
RT3K	*	**	5742-007	Power Supply
RT4B	1040KL	418008	5743-014	Power Supply
RT4G	*	**	5743-011	Power Supply
RT5M	*	418006	5752-009	Power Supply
RT10	*	**	5758-001	Power Supply
RT519A	*	**	5752-005	Power Supply
RTJ50	*	**	5742-008	Power Supply
SASH	*	**	5662-001	Power Supply
SB200E	*	**	5612-302	Power supply
TA20M19	*	781437	5174-006	Generator RGG
TB20CE	1040LL	787583	5157-009	Generator RGG
TB20C23	1040CA	718557	5157-001	Generator RGG
TB20C23	*	787583	5157-005	Generator RGG
TB20E	1040HY	787142	5157-501	Generator RGG
TB20E1	*	704316	5157-503	Generator RGG
TB20E2	*	**	5157-504	Generator RGG
TB20M23	*	716498	5148-002	Power Supply
TB20N	*	716513	5148-007	Power Supply
TB20RT	1040HB	780926	5718-002	Generator RGG
TB20SA	*	**	5153-314	Generator RGG
TB20SR	*	**	5153-313	Generator RGG
TB20S23	1040BL	712919	5153-302	Generator RGG
TF20MA	*	719900	5152-007	Generator RGG
WAA102	*	**	5174-102	Inverter
WAA102A	*	**	5174-104	Generator RGG
WAA102A	*	**	5175-306	Inverter
WAA102B	1040JF	782776	5174-315	Generator RGG
WAA102B	1040LR	*	5174-315	Generator RGG
WAA102H	*	**	5174-605	Inverter
WAA202A	*	**	5175-101	Inverter
WAA202H	*	**	5175-505	Inverter
WAA202K	*	**	5175-502	Inverter
WAA501B	*	729681	5173-302	Inverter
WAA501B	*	729681	5173-011	Inverter
WAA501 B	*	729681	5173-401	Inverter
WAA501 B	*	729681	5173-309	Inverter
WAA501 H	*	**	5173-602	Inverter
WAH202B	*	**	5181-601	Inverter
WAG103B	*	**	5167-002	Inverter
WAQ103B	*	**	5178-308	Inverter
WBA102BAE	*	715708	5174-321	Generator RGG
WBA121B1	*	704049	5172-005	Inverter DC-AC

* NOFDNUMBERFOUND
 ** NOMATERIALCODEFOUND

Exhibit 2 - Lorain Products Containing PCB Capacitors (Page 4 of 4)

Exhibits, continued

710	863-E	PCK-L	RS11-P
722	866-5	PCR11	RS64-A
722-A	866-C	PP12	RS64-B
730	866-D	PP8-E	RS64-P
743	866-E	PP8-I	TU55
749	ADC1	PP8-L	TU55-A
769	ADC1-A	RK05	VT05
770	AF01-A	RK05-AA	VT05-A
771 -A	AF01-B	RK05-AB	VT05-B
789-A	DF32-DN	RK05-BA	VT05-BH
832	DF32-DP	RK05-BB	VT05-CD
832-B	DFMA	RK05F-B	VT20-BA
832-c	H735	RK05F-AC	VW-BB
832-D	H735-A	RK05F-AD	VT20-BC
832-E	H755	RK05F-BA	W-05-B
832-F	LA36-EA	RK05J-BA	VT0B-BD
832-K	LA36-FA	RS03-AA	VT0B-CC
854	LA36-FB	RS03-AB	VT20-BA
854-C	LA36-TD	RS03-AC	VT20-BB
861-A	PC01	RS03-AD	VT20-BC
861-B	PC03	RS04-AA	VT20-BK
861 -c	PC04-CL	RS04-AB	VT20-CA
861 -D	PC04-CM	RS04-AC	VT20-CB
861 -E	PC05-C	RS04-AD	VT20-MA
861 -F	PC05-P	RS08	VT20-MB
861 -A	PC09	RS08-P	VT8-EA
863-A	PC10	RS09	VT8-EB
863-5	PC12	RS09-P	VT8-EC
863-D	PC8-I	RS11	VT8-ED

Exhibit 3 - Digital Equipment Devices With PCB Capacitors, Part Numbers

Stationary-Type Battery Chargers:

Models ARR, ARE, and ART never contained PC5 capacitors.

Models ARC and ARF contained PCB capacitors prior to 1971.

Industrial-Type Battery Chargers

Models AR, ER, and FR contained PC5 capacitors prior to 1979.

Exhibit 4 - C&D Batteries Equipment Containing PC5 Capacitors

System-Type Porta-Printer Plus

Exhibit 5 - Known Research, Inc., Equipment Containing PC5 Capacitors

**Instructions for completing
Hazardous Materials Shipping Paper**

The **Hazardous Materials Shipping Paper** form is to be used to **document internal shipments** of PC8 items, and COE solvent. No other items are to be included on the Hazardous Materials Shipping Paper. It is to be filled out legibly and printed (manually or mechanically) in English. Also, all drivers using the vehicle hauling the hazardous materials are to ensure that the Hazardous Shipping Paper is readily available and recognizable to authorities in the case of an accident or inspection. The form is to be filled out in its entirety in strict accordance to the following instructions. Contact Environmental Affairs for answers to questions in filling out the form.

Document Number Sequentially identifies each form used. The use of the document number is optional and the numbering scheme is by local discretion. This is the only information that is optional on the form.

Ship From Identifies the shipping location.

Ship To - - Identifies the receiving location.

Number of Containers Identifies the number of cans, boxes, pallets, drums or any other kind of container being shipped for the involved line item.

Type of Container Identifies the kind of containers used to ship the involved line item. These could be cartons, boxes, pallets, or any other kind of container.

For OOT proper shipping name, hazard classification and material identification see below:

Items	DOT Proper Shipping Name	DOT Hazard Classification	DOT Hazard Material Identification
Unused Bank	Petroleum Naphtha	Combustible Liquid	UN1 255
Unused 1,1,1 Trichloroethane	1,1,1 Trichloroethane	ORM-A	UN2231
Used Bank Cleaning Fluid and Used 1,1,1 Trichloroethane when combined form COE Waste Solvent	Waste Petroleum Naphtha	Combustible Liquid (EPA Ignitable D001)	UN1255
Polychlorinated Biphenyls (PCB's)	"RQ"-Hazardous Substance, Liquid, N.O.S. (Polychlorinated Biphenyls)	ORM-E	NA9189

Weight Identifies the gross weight of the line item being shipped. For COE solvent, this can be container volume, such as pints, quarts or gallons.

Signatures The Hazardous Materials Shipping Paper is to be signed by a craft or management person at the shipping and receiving locations.

Remarks Identifies any noteworthy information in the shipping of the involved line item.

Distribution Identifies the sending and regaining of each part of the three-part form. Upon receipt of the shipment at the receiving location, the pink part of the form is to be sent to Environmental Affairs. The shipping/receiving locations and Environmental Affairs are to retain their copies of the Hazardous Materials Shipping paper in a separate file on a permanent basis.

ACCUMULATION POINT FACILITY INSPECTION LOG SHEET
 FORM 000536HQ
 FEB 122-205-000

DATE	LISTING OF EACH CONTAINER IN ACCUMULATION POINT		CONTENTS	DATE ACCUMULATION STARTED	CORRECTIVE ACTIONS/REMARKS
	NUMBER OF CONTAINERS	Condition of Container OK Not OK			
TOTAL NUMBER OF CONTAINERS					

This inspection log sheet must be retained on file permanently.

Exhibit 7 - Accumulation Point Facility Inspection Log Sheet, Form 000536HQ

Exhibits, continued

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law	
3. Generator's Name and Mailing Address				3. State Manifest Document Number		
4. Generator's Phone ()				4. State		
5. Transporter 1 Company Name	6. US EPA ID Number			5. State		
7. Transporter 2 Company Name	8. US EPA ID Number			6. State		
9. Designated Facility Name and Site Address		10. US EPA ID Number			7. State	
GENERATOR	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
	a.					
	b.					
	c.					
	d.					
Additional Descriptions for Materials Listed Above		Special Handling Codes (See Section 10)				
15. Special Handling Instructions and Additional Information						
<p>16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.</p> <p>Unku I am a small quantity generator who hu been • xon@od by • tatuto or regulation from the duty to make a waste minimization certification under Section 3002(b) of RCRA, I also certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and I have selected the method of treatment, storage, or disposal currently available to me whkk minimizes the present and future threat to human health and the environment.</p>						
Printed/Typed Name			Signature		Month Day Year	
TRANSPORTER	17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
	Printed/Typed Name		Signature		Month Day Year	
	18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Month Day Year	
Printed/Typed Name		Signature		Month Day Year		
FACILITY	19. Discrepancy Indication Space					
	20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.					
Printed/Typed Name			Signature		Month Day Year	

DHS 8022 A (11/85)
(EPA 8700-22)

Exhibit 8 - State of California's Uniform Hazardous Waste Manifest

Exhibits, continued

Information	PCB Small Capacitor Lamp Ballasts
DOT Proper Shipping Name	RQ, Waste Polychlorinated Biphenyls
DOT Hazard Classification	ORM-E
DOT Hazard Material identification	UM2315
EPA Hazardous Waste Number	None
Job Site Shipping Container	Leak-Proof Container
DOT Hazardous Material Label	ORM-E
Shipping Papers Required from Job Site to Accumulation Site	Yes, if over 10 lb. of PCB
Accumulation Site Container	55-Gallon DOT 17E Drum
Maximum Accumulation Period	Unlimited
Hazardous Label Required on Container at the Accumulation Site	Yes
UHWM Required for Shipment of Container from Accumulation Site	Yes

Exhibit 9 - DOT Guidelines