



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX
215 Fremont Street
San Francisco, Ca. 94105

July 30, 1987

In Reply to T-3-2
Refer to: T(87)E164
& T(87)E165

William J. Cornils, Ph.D.
Environment - Energy Division Head
Mare Island Naval Shipyard
Public Works Department
Code 460, Stop 032
Vallejo, CA 94592

Dear Dr. Cornils:

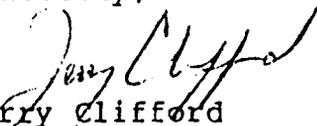
PCB investigations were conducted at two facilities of Mare Island Naval Shipyard on June 25, 1987. During the course of these investigations, information was gathered by EPA in accordance with Section 11 of the Toxic Substances Control Act. Copies of the investigation reports are enclosed for your information.

Any deficiencies or violations that may be noted in the reports are not necessarily inclusive, and any omission of other deficiencies or violations shall not be binding upon the Agency.

EPA may provide copies of the investigation reports to enquiring parties. Such releases will be handled according to the rules governing business confidentiality claims contained in the Code of Federal Regulations (40 CFR, Part 2).

Any comments regarding the facts presented in the report may be directed to Ayn Schmit of the Field Inspections Section at (415) 974-0308. Questions regarding other aspects of the case should be directed to Katie Neidig, Chief, Pesticides Section, at (415) 974-7326.

Sincerely,


Jerry Clifford
Chief, Field Operations Branch
Toxics and Waste Management Division

Enclosures (2)

cc: Ed Refsell, DHS, Emeryville

INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 9
TOXICS AND WASTE MANAGEMENT DIVISION
FIELD OPERATIONS BRANCH

Purpose: TSCA §6 PCB Investigation

Facility: Mare Island Naval Shipyard
West End of Tennessee Street
Vallejo, CA 94592

EPA ID Number: CA7170024775

Report Number: T(87)E164

Dates of Investigation: 25 June 1987

EPA Investigators: Ayn Schmit
Field Investigator

Donn Zuroski
Geologist

Facility Representatives: Bill Cornils
Environment-Energy Division Head

Mitch Slater
Production Dept. Haz. Materials Manager

Les Berlot
Environmental Engineer

Report Prepared By: Ayn Schmit

Report Date: 22 July 1987

§761.30(a)(1) USE CONDITIONS
PCB Transformers

YES NO N.A.

§761.30(a)(1) For PCB transformers operated by the facility:

- (i) X PCB transformer(s) that pose an exposure risk to food or feed were in use or storage for reuse.
- (iii) X PCB transformer(s) were installed in or near commercial buildings after October 1, 1985.
- (vi) 1 All PCB transformers were registered with the primary fire response office by 12/1/85.
- (vi) The registration provided the following information to the fire response office:
- (A) 1 The location of the address and physical location of the transformer.
- (B) 1 The principle constituent of the dielectric fluid.
- (C) 1 The name and telephone number of the person to contact in the event of a transformer fire.
- (vii) X For PCB transformers located in/near commercial buildings, facility had registered transformers with the owner(s) of all buildings within 30 meters, by 12/1/85.
- (vii) The registration provided the following information to building owner(s):
- (A) X The specific location of the PCB transformers.
- (B) X The principle constituent of the dielectric fluid.
- (C) X The type and primary/secondary voltage of the transformer installation.

MINSY has a base fire department. According to Mr. Berlot, the fire department has been notified regarding PCB transformers. Documentation requested from the facility had not been received by this report date, so compliance could not be evaluated.

§761.30(a)(1) USE CONDITIONS
PCB Transformer Inspection Records

YES NO N.A.

§761.30(a)(1) The facility had transformers of the following type(s):

(ix) X Containing 60,000 ppm PCB or greater.
If YES, requires: Quarterly inspections (calendar yr. quarters)
30-day minimum interval

(xiii) X Tested and found to contain 500 - 60,000 ppm PCB; or containing
60,000 ppm PCB and having 100% secondary containment.
If YES, requires: Annual inspections
180-day minimum interval

Availability of inspection records:

(xii) X All inspection records were available since 5/81 (must be
maintained 3 years after disposal of transformer).
If NO, the following were missing:

No quarterly inspections of PCB transformers were conducted
prior to April 1987.

(ix, xiii) X All inspections were conducted at appropriate intervals.
If NO, the following discrepancies were found:

COMMENTS

§761.30(a)(1)(xii) . USE CONDITIONS
Inspection Record Contents

YES NO N.A.

§761.30(a)(1)(xii) All PCB transformer inspection records included:

- | | | | | |
|-----|----------|----------|----------|---|
| (A) | <u>X</u> | ___ | ___ | Location of transformer. |
| (B) | <u>X</u> | ___ | ___ | Date of inspection. |
| (B) | ___ | ___ | <u>X</u> | Date leak was discovered if different from date of inspection. |
| (C) | <u>X</u> | ___ | ___ | Name of person performing the inspection. |
| (D) | ___ | <u>X</u> | ___ | Location of any leak(s). |
| (E) | ___ | <u>X</u> | ___ | Estimated amount of dielectric fluid released from any leak. |
| (F) | ___ | <u>X</u> | ___ | Date of any cleanup, containment or repair. |
| (G) | ___ | <u>X</u> | ___ | Description of any cleanup, containment or repair. |
| (H) | ___ | <u>X</u> | ___ | Results of any containment and daily inspection for uncorrected active leaks. |

COMMENTS

The MINSY inspection forms do not provide for any description of leaks; they require only a "+" for good condition and a "-" for any deficiencies, including leaks. As a result, a "-" on the form cannot be assumed to necessarily be a leak. Examples of the inspection records are included as Attachment 1. Although the form does provide a space to describe servicing and/or clean-up, this portion is not completed for all transformers noted as having leaks. See for example the record for transformer #1565.

REPORT ADDENDUM: PCB INVENTORY/ANNUAL DOCUMENT

MINSY prepares an annual inventory in the format required by the Navy Energy & Environmental Support Activity (NEESA). The document is in 2 parts. The first lists items which are identified as containing any detectable concentrations of PCB, identifies the item by category, and indicates the Kg. of PCBs. Any Article other than a Transformer or Capacitor is listed simply as "Other". Part 2 of the inventory indicates which items are in service, and lists dates of removal from service, placement in storage, and shipment for disposal for those items not in service.

A copy of the 1986 NEESA Inventory for MINSY is included as Attachment 2. The compliance of this document with the requirements of §761.180(a) is not evaluated in this report

§761.30, §761.40, and §761.60 USE CONDITIONS
PCB/PCB Contaminated Transformers in Use or Storage For Reuse

| REF. NO. | PHOTO NUMBERS | TRANSFORMER LOCATION | TRANSFORMER MANUFACTURER | SERIAL NUMBER | FLUID TYPE | FLUID VOLUME | §761.60 (d)(1) | | IF SPILL EST. SIZE OF SPILL AREA? | §761.30 (a)(viii) | §761.40 (c)(1) (j) | |
|----------|-----------------|--|--------------------------|-------------------------------|------------|--------------|------------------------|---------|-----------------------------------|------------------------------|--------------------|--------------------------|
| | | | | | | | DOES TRANSFORMER HAVE: | | | STORED COMBUSTIBLES IN AREA? | M _L ? | M _L ON ENTRY? |
| | | | | | | | LEAKS? | SPILLS? | | | | |
| 1 | *None available | Vault Switchgear Room, Power Plt. (Bl.680) | G.E. | 7081392 | Pyranol | 350gal | Y | N | N/A | Y | Y | N |
| 2 | | " | G.E. | 7081393 | Pyranol | 350gal | Y | N | N/A | Y | Y | N |
| 3 | | " | G.E. | 6582724 | Pyranol | 79 gal | Y | N | N/A | Y | Y | N |
| 4 | | Station J, Bldg. 680 | G.E. | 6417494 6417487 6417492 | Pyranol | 45 gal each | Y | N | N/A | N | Y | N |
| 5 | ↓ | " | Wagner | 357743 | No-flamol | 65 gal | Y | Y | <15 in ² | N | Y | N |

REF. NO. COMMENTS

- All Photographs were taken by a Navy staff photographer. They will not be released to EPA until a security review is completed by DoD.
- 1,2 Leak from main drain tap/valve and drip at upper drain tap.
- 3 Drip from gasket at temperature gauge.
- 4 All 3 units had material leaking out at the base of the bushing cabinet, potentially indicating a leak of significant quantity from the bushings themselves.
- 5 Leak/spill from main drain tap/valve.

§761.30, §761.40, and §761.60 USE CONDITIONS
PCB/PCB Contaminated Transformers in Use or Storage for Reuse

| REF. NO. | PHOTO NUMBERS | TRANSFORMER LOCATION | TRANSFORMER MANUFACTURER | SERIAL NUMBER | FLUID TYPE | FLUID VOLUME | §761.60 (d)(1) | | IF SPILL EST. SIZE OF SPILL AREA? | §761.30 (a)(viii) | §761.40 (c)(1) (j) | |
|----------|----------------|----------------------|--------------------------|--------------------|------------------------|--------------|------------------------|---------|-----------------------------------|------------------------------|--------------------|--------------------------|
| | | | | | | | DOES TRANSFORMER HAVE: | | | STORED COMBUSTIBLES IN AREA? | M _L ? | M _L ON ENTRY? |
| | | | | | | | LEAKS? | SPILLS? | | | | |
| 6 | None available | Station B, Bldg. 680 | G.E. | 7693500 | Pyranol | Unknwn | Y | Y | <10 in ² | N | Y | N |
| 7 | | Bldg. A-194 Pier 34 | G.E. | 6900702 | Pyranol | 53 gal | Y | N | N/A | N | Y | N |
| 8 | | " | G.E. | 6892965 | Pyranol | 44 gal | Y | N | N/A | N | Y | N |
| 9 | | Bldg. A-266 | | T-1564 (MINSY No.) | Oil (assumed PCB-Cont) | | Y | Y | <60 in ² | N | Y | N |
| 10 | ↓ | " | Westinghouse | 3415766 | Hypersil | Unknwn | Y | Y | approx. 100 ft ² | N | Y | N |

REF. NO. COMMENTS

6 Leak/spill from sample tap.

7,8 Leaks from bushings. This substation is located on a pier directly over the water.

9 No sample results could be located during the inspection to demonstrate that this unit was <50 ppm. MINSY agreed to forward sample results if located after the inspection.

10 This unit is assumed to be PCB.

REPORT ADDENDUM

In addition to PCB electrical equipment in use and PCB Items in storage for disposal (see Report No. T(87)E165), MINSY has had several incidents involving the release of PCBs at the shipyard. Due to the limited time frame of the inspection and the fact that one of the individuals involved in the PCB program was unavailable, MINSY representatives were unable to locate and assemble all of the documentation we requested regarding PCB activities at the facility. Facility representatives agreed to assemble and submit the following documents by mail:

- 1) Sample results for 7 hydraulic systems in Bldg. 680 identified as >50 ppm PCBs. We requested results for testing done before and after decontamination of the units.
- 2) Transformer inspection records from facility's April inspection for all transformers viewed during our inspection.
- 3) Descriptive information regarding PCB contamination of the Bldg. 866 catch basin and the Industrial Waste Water Treatment Plant (IWWTP) and system. We also requested sample results from at least the Bldg. 866 basin and the oil/sludge collection tank and sludge drying ponds at the IWWT Plant.
- 4) Descriptive information and sample results for PCB contamination in the waste oil collection/separation barge known as the "Big W".
- 5) Results of PCB analysis of Transformer #T-1564.
- 6) Documentation of notification to the base fire department concerning the presence of PCB transformers.
- 7) Photographs taken during the inspection by the base photographer. These were to be forwarded at a later time following a security review by DoD in Washington.

As of the date of this report, MINSY had not yet sent the information requested in Items #1-#6 above. Accordingly, I am providing a brief narrative description regarding each of the PCB issues at MINSY. The facility's documentation will be forwarded upon receipt.

PCBs in Hydraulic Systems

There are numerous pieces of hydraulic equipment at MINSY. According to facility representatives, 95% of this equipment is located in the Machine Shop in Bldg. 680. Approximately 1 year ago all of the hydraulic systems in this building were tested for PCBs. Seven machines were found to contain >50 ppm PCBs. The interior and exterior surfaces of the machines were decontaminated, according to facility representatives. Documents describing the decon procedures were provided to us, and are included as Attachment 3. Note that these documents state that only 6 of the machines were decontaminated.

REPORT ADDENDUM

Apparently no comprehensive identification and testing program has been carried out for hydraulic equipment located elsewhere at the facility. MINSY does plan to survey for, test, and decontaminate all hydraulic systems at the shipyard.

Building 866/IWWTP

MINSY operates an industrial waste water collection system and treatment plant (IWWTP). The IWWTP has as part of the treatment process an oil/sludge skimmer. The skimmed material is collected in a sump. In 1979, according to facility representatives, PCB transformer fluid was released to a catch basin inside Bldg. 866, which houses the electrical repair shop. The catch basin discharges to the industrial sewer system, and ultimately to the IWWTP.

PCB contamination in Bldg. 866 and within the IWW system was first identified in 1981. The grease trap in the building was found to contain 1900 ppm PCBs, and material in the catch basin contained 774 ppm. Samples collected from the oil and the bottom sludge in the IWWTP oil skimmer sump showed 76 and 69 ppm PCBs respectively. Sludge from the sludge drying beds contained between 2 and 26 ppm PCBs. These samples were collected in March 1981.

MINSY representatives met with California DOHS in September 1981 to discuss possible methods to clean out the IWW system. DOHS recommended the use of an aqueous emulsifier rather than the use of solvents to purge the PCBs from the system. Although this method was tested in a limited area, the clean-up was never completed. MINSY still intends to complete the project. Some hot spots in the system were reportedly decontaminated, including the grease trap and catch basin in Bldg. 866. The decontamination methods used are unknown.

MINSY has continued to test oil and sludge collected at the IWWTP. They have found from <5 ppm to 30 ppm PCBs in the sludge. More recent PCB concentrations in the oil skimmer sump are unknown. The sludge is removed for disposal yearly, while the oil sump is cleaned out every 1-2 years.

"Big W" Oil Collection System

The Big W is a floating barge which collects waste oil from ships and from various shore sources. It uses heat to aid in the separation of water from the oil. The reclaimed oil is stored in tanks on the barge. When these tanks are full, they are pumped out and the oil is sold through DRMO as heating oil. Since 1981, the oil has been analyzed prior to sale. In 1983, PCBs were found in batches of reclaimed oil at 15 and 23 ppm. In 1984, batches tested at 4 and 12 ppm PCBs, and in 1985 at 4 ppm. It is unknown whether these figures represent all of the samples since 1981 that showed detectable PCBs.

REPORT ADDENDUM

T-2 Pre-treatment Station

This station, located at Berth 4, treats waste water from the Big W and cleaning water from the cleaning of miscellaneous oil tanks. It discharges the pre-treated water to the IWW system. The station includes a gravity oil separator. The floating oil from the separator is pumped into the Big W. The bottom sludge from the separator is cleaned out every 3-4 years.

In 1981, PCBs were detected in the separator. Both the upper oil layer and the aqueous layer had no detectable PCBs, but sediment on the bottom contained 13 ppm and oil beneath the aqueous layer contained 25 ppm.

According to facility representatives, the separator was recently cleaned out. MINSY representatives speculated that a group of drums in the Bldg. 213 storage facility, which were marked as containing 39.37 ppm PCBs, contained material from this clean-up. However, they could not locate the paperwork to confirm this.

POTENTIAL VIOLATIONS

SUBPART B

- §761.30(a)(1)(viii) Combustible materials were stored within 5 meters of PCB transformers located in the Vault Switchgear Room.
- §761.30(a)(1)(ix) MINSY failed to conduct quarterly inspections of more than 100 PCB transformers.
- §761.30(a)(1)(x) Transformer inspection records for Transformer #T-1565 show no clean-up within 48 hours of notation of a large PCB leak.
- §761.30(a)(1)(xii) Inspection records from MINSY's sole quarterly transformer inspection did not include all of the required information.
- §761.30(e)(1) MINSY failed to test PCB-containing hydraulic systems by November 1, 1979.
- §761.30(e)(2) MINSY did not drain and refill 1 of 7 hydraulic systems found to contain >50 ppm PCBs.

SUBPART C

- §761.40(j) No M_L had been placed on the means of access to PCB transformer rooms at MINSY.

SUBPART D

- §761.60(d)(1) Material leaking from all 10 transformers inspected during our visit represents the unauthorized disposal of PCBs. PCBs were discharged in an unauthorized manner into the IWW system.

REPORT ATTACHMENTS

1. Six selected PCB transformer inspection log sheets for inspections conducted during April 1987.
2. 1986 PCB Inventory Report for MINSY, 3/9/87.
3. Various documents concerning the discovery and decontamination of hydraulic systems in Building 680 containing >50 ppm PCBs.

INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 9
TOXICS AND WASTE MANAGEMENT DIVISION
FIELD OPERATIONS BRANCH

Purpose: TSCA §6 PCB Investigation

Facility: Mare Island Naval Shipyard
PCB Storage Facility
Building 213 MINSY
Vallejo, CA 94592

EPA ID Number: CA1170090392

Report Number: T(87)E165

Dates of Investigation: 25 June 1987

EPA Investigators: Ayn Schmit
Field Investigator

Donn Zuroski
Geologist

Facility Representatives: Bill Cornils
Environment-Energy Division Head
Mitch Slater
Production Dept. Haz. Materials Manager

Report Prepared By: Ayn Schmit

Report Date: 22 June 1987

§761.65 STORAGE FOR DISPOSAL
PCBs AND PCB ITEMS > 50 ppm

YES NO N.A.

§761.65

- (a) ~~Not evaluated~~ All PCB Articles or Containers placed in storage for disposal after 1/1/83 were disposed of within 1 year from the date they were first placed into storage.

§761.65(b)(1) The storage for disposal area met the following criteria:

- (i) X ___ ___ Adequate roof and walls to prevent rain water from reaching stored PCBs/PCB Items.
- (ii) X ___ ___ Adequate floor with a minimum 6 inch high continuous curb, providing a containment volume of at least twice the internal volume of the largest Article/Container stored therein, or 25% of the total internal volume of all Articles/Containers stored therein, whichever is greater.
- (iii) X ___ ___ No floor openings of any kind that would permit liquids to flow from the curbed area.
- (iv) ___ X ___ Floors and curbing constructed of smooth and impervious materials.
- (v) X ___ ___ Not located at a site that is below the 100-year flood water elevation.

§761.65(c)

- (3) X ___ ___ The storage area was marked with M_L.
- (4) ___ ___ X All contaminated moveable equipment used for handling stored PCBs/PCB Items was kept within the PCB storage area.
- (5) X ___ ___ The facility inspects all stored PCB Articles/Containers for leaks at least once every 30 days.
- (5) ___ ___ X All leaking PCB Articles/Containers were immediately transferred to marked (M_L) non-leaking containers.
- (5) ___ ___ X Spilled or leaked materials were immediately cleaned up.
- (8) X ___ ___ Facility had noted on all PCB Articles and Containers the date when each Item was placed into storage.
- (8) X ___ ___ PCB Articles and Containers were managed so that they could be located by the date they were placed into storage.

§761.65 STORAGE FOR DISPOSAL
(continued)

§761.65(c)

- (6) X ___ ___ The facility used only DOT specified containers (5, 5B, 6D with 2S or 2SL, or 17E) for storage of liquid PCBs.
- (6) X ___ ___ The facility used only DOT specified containers (5, 5B, or 17C) for storage of non-liquid PCBs.
- (6) ___ ___ X If the facility used non-DOT specified containers for storage of non-liquid PCBs, they demonstrated that these containers provide protection from leaking and environmental exposure equivalent to that provided by the DOT specified containers, and are of the same strength and durability.
- (7) ___ X ___ The facility was storing liquid PCBs in containers larger than those specified in (C)(6).
- If YES, the facility had:
- (i) ___ ___ X Designed, constructed and operated the containers in compliance with Occupational Safety and Health Standards, 29 CFR §1910.106, Flammable and combustible liquids. The design of the containers was reviewed to determine the effect upon the structural safety of the containers that would result from placing liquids with the specific gravity of PCBs into the containers.
- (ii) ___ ___ X Prepared a Spill Prevention Control and Countermeasure Plan for the storage area.

REFERENCECOMMENTS

- §761.65(b)(1)(iv) The floor of the storage area was not impervious. It contained numerous cracks and the concrete showed considerable evidence of degradation. The curbing was an approximately 6" metal strip which was bolted to the floor. A neoprene gasket was used to seal the interface between the strip and the floor.

POTENTIAL VIOLATIONS

SUBPART D

§761.65(b)(1) The MINSY PCB storage for disposal facility did not have a smooth and impervious floor.

TRANSFORMERS
by BLDG

| B # | J # | |
|-----------------------------|--|--------------------------------------|
| ✓ 1 65- | 70, 838, 840, 841 | In house funds Required |
| ✓ 2 77- | Replaced 777, 783 | Replaced |
| ✓ 3 85- | 857 | Replaced |
| ✓ 4 87- | 866, 867 | Replaced |
| ✓ 5 91- | not accessible | |
| ✓ 6 108- | 47, 84, 1497 | item, 123, 126 124 ? |
| ✓ 7 121- | 818, 819, 870, 1022 | To be replaced |
| ✓ 8 253- | 991 | Done in house |
| ✓ 9 334- | 1496 | To be replaced |
| ✓ 10 461 | 832, 833, 843 | - To be Replaced |
| ✓ 11 485- | 1450 ? 1150 | Item 80 on on water front |
| ✓ 12 516- | 11287, 1288, 1289, 14631 | To be replaced |
| ✓ 13 521- | 758, 759, 760, 1165 | Replaced |
| ✓ 14 535- | 771 | To be Replaced |
| ✓ 15 542- | 751 | |
| ✓ 16 567- | 876, 878 | |
| ✓ 17 577- | 1021 | To be Replaced |
| ✓ 18 605 | 1018 | Replaced |
| ✓ 19 680- | 762, 763, 770, 945, 946, 947, 948, 949, 957, 958, 959, 960 | To be Replaced |
| | 961, 962, 963, 964, 965, 966, 1403, 1404, 1405 | |
| ✓ 20 686- | 49 | Proj Funds required |
| ✓ 21 690- | 1490 | item 130 |
| ✓ 22 742- | 972, 973, 980 | To be Replaced |
| ✓ 23 751- | 820, 824, 825, 827, 1162, 1163, 1164 | To be Replaced |
| ✓ 24 832- | 68 | item 122 |
| ✓ 25 842 ^{(DD)E} - | 1296, 1464 | To be replaced |
| ✓ 26 866- | 1416, 1417, 1418, 1419 , 1423 | To be replaced |
| ✓ 27 898- | 862, 1251, 1252 | Replaced |
| ✓ 28 930- | 89 | Item 132 |
| ✓ 29 944- | 1469, 1470 | Proj Fund Req |
| ✓ 30 1310- | 48 | Need Design |
| ✓ 31 1322- | 78 | Galley Work Order item 98 |
| ✓ 32 977 ^{(DD)I} - | 51 | Proj funds required |

| | | | |
|-----|----------|-------------------|--|
| ✓33 | A-142 | 1518 | to be replaced |
| ✓34 | A-194 | 1570, 1571, 1572 | Replaced |
| ✓35 | A-211 | 1231 | To be replaced |
| ✓36 | A-253 | 1546, 1547, 1548 | ? item 105 to be replaced to be replaced |
| ✓37 | A-260 | 1549, 1550, 1561 | to be replaced |
| ✓38 | A-266 | <u>1563, 1565</u> | to be replaced |
| ✓39 | Berth 10 | 1465 | item 128 |
| ✓40 | Berth 19 | 67 | Replace To be Replaced |
| ✓41 | Berth 20 | 54 | to be Replace |
| ✓42 | DD 4 | 66 | |
| ✓43 | H-70 | 814, 1270 | 620 Proj fund required |
| ✓44 | H-72 | 621, 622 | Proj funds required |
| ✓45 | H-89 | 913, 914 | Proj funds required |
| ✓41 | M-37 | 850 | |

| | | | |
|-------|------|----------|---------------|
| DD #1 | 1497 | item 124 | |
| 592 | 0751 | item 131 | J.A. required |
| 866 | | | |