SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

November 30, 2006

Utilities NOI
NPDES Unit
Division of Water Quality
State Water Resources Control Board
P.O. Box 100
Sacramento, CA 95812

UPS Tracking # 1Z 31E 512 22 1113 425 5

Re: NPDES General Permit No. CAG990002 for Discharge from Utility Vaults and Underground Structures to Surface Waters (Order No. 2006-0008DWQ)

Dear Permit administrator,

Please find the enclosed documents as part of the permit requirements under the General National Pollutant Discharge Elimination System (NPDES) Permit, Order NO. 2006-0008-DWQ, NPDES NO. CAG990002, as follows:

1. Notice of Intent (NOI) for each of the Regional Water Quality Control Board (RWQCB) within SCE's service territory (R3, R4, R5, R6, R7, R8and R9).
2. Maps of SCE's Service territory within each of the Regional Boards.
3. SCE's Pollution Prevention Plan (PLAN).
4. Proof of payment for the first annual fee.

Should you have any questions regarding these submittals, please do not hesitate to contact me at (626) 302-3619.Thank you

Sincerely,

Hazem Gabr I am the author of this document 2006.11.30 16:14:58 -08'00'

Hazem Gabr
Environmental Specialist
Southern California Edison Company

Enclosure: Notice of Intent (NOI)
SCE's Pollution Prevention Plan (PLAN) With attachment A, B, C and D
Proof of payment for the first annual fee
Maps of SCE's Service territory

ATTACHMENT B – NOTICE OF INTENT FORM

NOTICE OF INTENT (NOI)
WATER QUALITY ORDER NO. 2006-0008-DWQ
STATEWIDE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR DISCHARGES FROM UTILITY VAULTS AND UNDERGROUND STRUCTURES TO SURFACE WATERS OF THE UNITED STATES
GENERAL PERMIT NO. CAG990002

I. NOTICE OF INTENT STATUS (See Instructions)

MARK ONLY ONE ITEM 1.☐ New Discharger 2.☒ Change of Information – WDID # 9000U000028

II. OWNER/OPERATOR *(If additional owners/operators are involved, provide the information in a supplemental page.)*

A. Name Southern California Edison		Owner/Operator Type (Check One) 1.☐ City 2.☐ County 3.☐ State 4.☐ Gov. Combo 5.☒ Private	
B. Mailing Address 2244 Walnut Grove Ave			
C. City Rosemead	D. County Los Angeles	E. State CA	F. Zip Code 91770
G. Contact Person Hazem Gabr	H. Title Corporate Environmental Specialist		I. Phone 626-302-3619

☐ **ADDITIONAL OWNERS** _____

III. BILLING ADDRESS *(Enter information only if different from above)*

Send to: ☒ **Owner/Operator** ☐ **Other**	A. Name Southern California Edison Attn:Cynthia Davis	B. Title Administrative Assistant	
	C. Mailing Address P.O. Box 800 Quad 3A		
D. City Rosemead	E. County Los Angeles	F. State CA	G. Zip Code 91770

IV. RECEIVING WATER INFORMATION

A. Receiving water(s): Water bodies of the State of California	B. Describe the types of receiving waters affected: discharges via local storm water conveyances to rivers, lakes, streams, creeks, bay, ocean, wetland
C. Regional Water Quality Control Board(s) where discharge sites are located List all regions where discharge of wastewater is proposed, i.e. Region(s) 1, 2, 3, 4, 5, 6, 7, 8, and/or 9: Region 9	

V. LAND DISPOSAL/RECLAMATION

The State Water Resources Control Board's water rights authority encourages the disposal of wastewater on land or re-use of wastewater where practical. You must evaluate and rule out this alternative prior to any discharge to surface water under this Order.

Is land disposal/reclamation feasible? ☐ **Yes** ☒ **No**

If **Yes**, you should contact the Regional Water Board. This Order does not apply if there is no discharge to surface waters. If **No**, explain:
Utility companies have numerous short duration intermittent releases of water to surface waters from many different locations(400,000). Most of which are located in high density urban environments.

VI. VERIFICATION

Have you contacted the appropriate Regional Water Board or verified in the appropriate Basin Plan that the proposed discharge will not violate prohibitions or orders of that Regional Water Board? ☐ **Yes** ☒ **No**

VII. TYPE (Check All That Apply)

☒ **Electric** ☐ **Natural Gas** ☐ **Telephone** ☐ **Other:**

VIII. POLLUTION PREVENTION PRACTICES PLAN INFORMATION

A. Company Name Southern California Edison			B. Contact Person Hazem Gabr	
C. Street Address Where PLAN is Located 2244 Walnut Grove Ave			D. Title of Contact Person Corporate Environmental Specialist	
E. City Rosemead	F. County Los Angeles	G. State CA	H. Zip Code 91770	I. Phone 626-302-3619

IX. DESCRIPTION OF DISCHARGE

Describe the discharge(s) proposed. List any potential pollutants in the discharge. Attach additional sheets if needed.
Utility vault storm water, groundwater, intruded irrigation water.
Pollutants of concern are mineral oil, suspended solids, and total petroleum hydrocarbons.

X. VICINITY MAP AND FEE

A. Have you included vicinity map(s) with this submittal? ☒ Yes ☐ No
Separate vicinity maps must be submitted for each Region where a proposed discharge will occur.
B. Have you included payment of the filing fee (for first-time enrollees only) with this submittal? ☐ Yes ☐ No ☒ N/A
C. Have you included your PLAN? ☒ Yes ☐ No

XI. CERTIFICATION

" I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is true, accurate, and complete to the best of my knowledge and belief. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the provisions of the permit, including the criteria for eligibility and the development and implementation of Pollution Prevention Practices, if required, will be complied with."

A. Printed Name: Hazem Gabr	
B. Signature: Hazem Gabr I am approving this document 2006.11.22 14:43:14 -08'00'	C. Date: 11/22/2006
D. Title: Corporate Environmental Specialist	

PLEASE SUBMIT THE NOI, FIRST ANNUAL FEE, PLAN AND MAP TO THE FOLLOWING ADDRESS:

UTILITIES NOI
NPDES UNIT
DIVISION OF WATER QUALITY
STATE WATER RESOURCES CONTROL BOARD
P.O. BOX 100
SACRAMENTO, CA 95812-0100

STATE USE ONLY

WDID:	Regional Board Office	Date NOI Received:	Date NOI Processed:
		Fee Amount Received: $	Check #:

STATE WATER RESOURCES CONTROL BOARD

INVOICE

Annual Fee for Waste Discharge Requirements
Required by SECTION 13260 of the California Water Code

Facility ID (WDID): 9000U000028 – San Diego Region
Facility Name: SCE UTILITY VAULT DISCHARGES
P.O. BOX 800
ROSEMEAD, CA

Invoice No: 0618042
Billing Period: 07/01/06-06/30/07
Invoice Date: 10/27/06

Total Amount Due by 11/26/06 ..... $1,185

SCE
ATTN: ~~KEVIN HERBINSON~~ Cynthia Davis
PO BOX 800 QUAD 3A
ROSEMEAD, CA 91770

11-16-06

Invoice details are shown on the back

STATE WATER RESOURCES CONTROL BOARD
Annual Fee for Waste Discharge Requirements

Facility ID: **9000U000028** Billing Period: **07/01/06-06/30/07**

Invoice No: **0618042** Amount Due: **$1,185** Due By: **Sunday, November 26 2006**

PLEASE REMIT YOUR PAYMENT ON OR BEFORE THE DUE DATE SHOWN ABOVE. LATE PAYMENT COULD RESULT IN PENALTIES UNDER PROVISIONS OF THE WATER CODE SECTION 13261. THESE ACTIONS COULD INCLUDE DAILY PENALTIES IN ADDITION TO YOUR FEE, OR OTHER ACTIONS DEEMED APPROPRIATE BY THE REGIONAL BOARD.

Make your check payable to SWRCB FEES

If you have any questions about this invoice, please call your Regional Water Quality Control Board at (858) 467-2963

Retain this portion for your records
Please detach and return this portion with your payment

☐ CHECK HERE FOR ADDRESS CORRECTION ON THE BACK

SCE
ATTN: ~~KEVIN HERBINSON~~ Cynthia Davis
PO BOX 800 QUAD 3A
ROSEMEAD, CA 91770
(626) 302-9732

Invoice No: 0618042
PLEASE PRINT THIS NUMBER ON CHECK OR MONEY ORDER

SWRCB ACCOUNTING OFFICE
ATTN: AFRS
P. O. Box 1888
SACRAMENTO, CA 95812-1888

AMOUNT DUE: $1,185
BILLING PERIOD: 07/01/06-06/30/07
DUE BY: 11/26/06
FACILITY ID (WDID): 9000U000028
FACILITY NAME: SCE UTILITY VAULT DISCHARGES
P.O. BOX 800
ROSEMEAD, CA

THIS IS WATERMARKED PAPER - DO NOT ACCEPT WITHOUT NOTING WATERMARK - HOLD TO LIGHT TO VERIFY WATERMARK

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company

P.O. Box 800, Rosemead, California 91770 Wells Fargo Bank Ohio, N.A., Van Wert, OH 45891

040347

56-382
412

Field Payment System

(AMOUNT NOT TO EXCEED $2500.00)

NOVEMBER 16, 2006
PLEASE CASH WITHIN 60 DAYS

$2,370.00

087
Issuing Payroll No.

TWO THOUSAND THREE HUNDRED SEVENTY & 00/100********** DOLLARS

PAY TO THE ORDER OF SWRCB FEES

P.O. BOX 1888
SACRAMENTO CA 95812-1888

R. Lt C Bonder

4-80-WF NEW 1/03

⑈040347⑈ ⑆041203824⑆960003642 8⑈

040347

FEES & PERMITS REF NO 057

CHECK AMOUNT $2,370.00 CHECK DATE 11-16-06

DOCUMENT NO	DATE	AMOUNT
0614907	10-27-06	$1,185.00
0618042	10-27-06	$1,185.00

FACILITY WDIDS: 9000U000028; 5C54NP00005
RETURN CHECK TO CYNTHIA DAVIS, QUAD 3A

DISTRIBUTED BY:
ENVIRONMENTAL AFFAIR
Quad 3A - GO 1

PAYROLL NO 087

0001823775

POLLUTION PREVENTION PLAN (PLAN)
SOUTHERN CALIFORNIA EDISON COMPANY
Revised 11/30/2006

PURPOSE

In order to comply with Southern California Edison's (SCE) authorization under the State Water Resources Control Board's General NPDES Permit for Discharges From Utility Vaults and Underground Structures to Surface Waters (ORDER NO. 2006-0008-DWQ NPDES NO. CAG990002), below is SCE's Pollution Prevention Plan (PLAN). Utility companies covered by this General Permit are required to implement a PLAN as requirement.

The Pollution Prevention Plan (PLAN) addresses two major objectives: (1) identify all situations which lead to a discharge from underground structures; and (2) describe and ensure the implementation of practices to reduce pollutants in the discharge from the normal operations of utility companies.

Background

SCE owns, maintains and operates underground distribution equipment vaults, subsurface transmission cable trenches, underground transmission cable vaults and underground carrier solutions cable vaults for which the General Permit covers. The distribution and transmission service territory encompasses seven Regional Board regions, 50,000 square miles and serves approximately 10 million customers. This area extends roughly from Mono County to San Diego County.

In order to protect the electrical equipment, eliminate safety hazards and provide access to equipment for repair and maintenance, it is necessary to pump accumulated liquid from underground structures. The structures are often impacted by storm water or intruded ground water, though some contamination may also be encountered including but not limited to: solids, sediment, vegetation or oil. As part of the annual report associated with the General NDPES permit, SCE conducts representative sampling of underground structures, testing for Total Suspended Solids, pH, Oil and Grease and Total Fuel Hydrocarbons, as required.

SCE owns and maintains approximately 396,000 underground utility structure within the Transmission and Distribution Business Unit (TDBU); therefore; TDBU has developed an environmental procedure to evacuate vaults, both on scheduled and unscheduled discharges or emergency situations, called EN-2, Vault Water Disposal (see Attachment A). This procedure outlines the steps that the personnel must take in order to ensure that the beneficial uses of the receiving water body and water quality objectives are not impaired by water discharged from an underground structure.

SCE owns and maintains approximately 50 underground structures located within the hydro powerhouses for which the General Permit also covers. In order to protect the equipment and provide access to equipment for repair and maintenance, it is necessary to periodically pump accumulated liquid from underground structures. The structures are often impacted by intruded ground water through the concrete and system water leakage from the turbine process.

Pollution Prevention Practices

The SCE discharges from the underground structures are mainly composed of storm water or intruded ground water discovered during routine maintenance work. Discharges from underground structures will ordinarily be discharged into the street or storm drain in accordance with our policy and procedures (called EN-2 Underground Structure Water Handling and Disposal, see Attachment A).

EN-2 is designed to prevent the discharges of potential pollutants, which could include mineral oil, suspended solids and total petroleum hydrocarbons to the street or storm drain and provides the proper guidance on the handling of water and solids. The pollution prevention measures are detailed in EN-2 and would be applicable in all situations.

Types of Discharges

The SCE discharges from the underground structures are mainly composed of storm water or intruded ground water discovered during routine maintenance work. Discharges from underground structures will ordinarily be discharged into the street or storm drain in accordance with our policy (EN-2), described above. The discharges are intermittent and of low volume generally on the order of a few hundred gallons. Figure 1 shows common pump rates for normal discharge operations. Figure 2 provides the structure descriptions and dimensions for the vaults.

Figure 1. Estimated time to pump

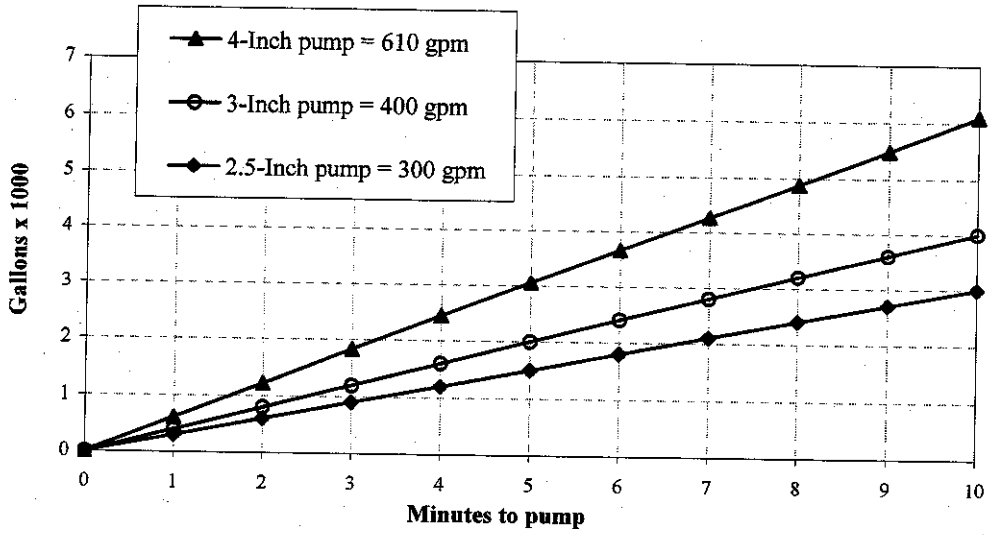

Figure 2
Structure Descriptions and Dimensions

Group	Equipment	Location / Description
Distribution Vaults/Carrier Solution Vaults	Transformers, Switches, Cables	Located underneath streets, parking lots, within building structures throughout the SCE territory. These structures contain electrical equipment.
Transmission Vaults	Cables	These structures are located either underneath streets throughout the SCE territory or at substations. These structures contain electrical equipment.
Cable Trenches	Cables	Trenches are located exclusively at substations in and around the equipment leading to the control building. They are rectangular ditches approximately 1-8 feet deep and have removable covers.
Underground structures: generator and valve pits	Water pipe; turbine shutoff valve; turbine power needle; power needle servo motor; deflector linkage	Located within the hydro powerhouses throughout the SCE territory.
	Type	**Size (approx.)**
Distribution Vaults	Vault	Various sizes: typical size is 10ft x 10ft x 10ft. Structures are large enough to hold equipment and personnel to work on equipment.
Transmission Vaults	Vault	Various sizes: typical size is 15ft x 15ft x 15ft
Cable Trenches	Trench	Various sizes: typical size is 50ft x 3ft x 3ft
Other	Manhole	4 ft x 6 ft x 7 ft
	Hand Hole / Pull Box	3 ft x 5 ft x 4 ft
Generator or valve pits	Underground structures	Various sizes: 4 x 3 x 3 to 12 x 12 x 20. Structures are large enough to hold equipment and personnel to work on equipment.

Types of Structural and Nonstructural Control Measures

During routine inspections, the field personnel are instructed to seal the lids of the structures and seal the ducts when appropriate. Typically, the structure will have a metal plate under the manhole covers. In addition, in certain locations, because of the constant inundation of water (usually due to the irrigation in the area), SCE has installed automatic sump pumps to discharge the water. The water must be discharged from the vault because while the equipment was manufactured as water tight, the equipment is not guaranteed to continue working if it remains constantly submerged.

Because of that, the automatic sump pumps are essential to the continued operation of the equipment and ensuring that electricity is not interrupted to the connected customers. As part of pollution prevention practices, SCE has initiated a pilot program to install "smart switches" on the automatic sump pumps. The smart switches are designed to automatically shut off a pump if it detects petroleum hydrocarbons, thereby preventing the discharge of pollutants. This program is being evaluated and the equipment will continue to be installed on the new installation of automatic sump pumps as the program proves successful.

In terms of nonstructural control measures, crews that are assigned the operation and maintenance of the equipment for these structures are equipped with clean-up kits which would include drums, shovels, pigs and drums. The crews also use bailers during their assessment process (see Attachment A EN-2). They are instructed to drop bailers in the structures and then extract water to determine the level of contamination of the vault water (i.e. to visually determine if sediments or oils can be detected before discharging). With that initial determination, the crews can determine if the water can be discharged or must be placed in drums or vacuum trucks.

Training

Field crews are also provided annual training of how to address water and solids detected in the structures, a curriculum based on EN-2 (see Attachment A). Supplemental updates and reinforcement training is provided by SCE's environmental staff as the opportunities arise.

Annual Report

As required by the General NPDES permit, SCE completes the annual sampling event and reports the data to the appropriate Regional Boards. Based on data compiled by this monitoring event, SCE reevaluates its activities and approaches to ensure all steps are being taken to address permitting requirements.

SCE created a sampling and analysis procedure (see Attachment C) for the annual testing requirement in order to ensure consistency of sampling and reporting despite multiple individuals conducting the sampling activities. The sampling and analysis procedure outlines: the types and sizes of structures found within SCE territory, the pollutants of

concern for SCE, the types of discharges expected, the sampling location selection process, a checklist of issues to be considered for the program and forms needed to ensure the proper logging of information and transmittal of samples to the laboratory.

Other Methods

SCE has engaged in a number of different activities to assess a number of innovative control measures to improve and ensure compliance. SCE tested the Filter Sock, the Myself Persia, a 10" Housing and Myles Filter, the Ultra-Urban Filter and the Dirt Bag. These are all current available filtration medias suggesting that they can screen out sand, sediment and hydrocarbons without interfering/delaying the discharge process allowing water to pass through or are engineered to remove hydrocarbons out of water in a single pass. A promising results was the results of multiple testing of the filter sock process, the In the current time; SCE is dedicated to continue investigate and test options as they become available and will implement product if it proves feasibility and practicability.

DISCHARGES

Scheduled Discharges

SCE conducts regular inspections and completes maintenance of its equipment housed in its underground structures. During the inspections, the field crews will determine if the equipment is still stable and if general maintenance is required. As part of SCE's Operation and Maintenance Policy and Procedures, SCE has identified the procedures, checklists and forms for performing these underground detail inspections. These inspections evaluate the safety and condition of all transmission and distribution cable, equipment and apparatus within the underground structures (see Attachment B).

During routine inspections, the personnel are instructed to verify the condition, corrosion level and inventory records of each piece of equipment in each structure inspected. In terms of safety issues, gas and oxygen levels are monitored before entering the confined structure. Infrared heat scanning of the cable, components and equipment are then performed. SCE's Distribution Division has established IM-5 (see Attachment B IM-5) as the procedure for inspection and SCE's Transmission Division has established Division Order 40.35 (see Attachment D) as its procedure.

During routine inspections, SCE personnel often encounter storm water or intruded ground water in underground vaults or cable trenches. Upon discovery, it is necessary to pump water from these structures for the protection and maintenance of the equipment/cable and to protect the safety of personnel entering these structures. Potential pollutants from scheduled discharges may include oil and grease, turbidity and suspended solids. These discharges are intermittent and of low volume, on the order of a few hundred gallons to a few thousand gallons.

Once the initial inspection activities are completed, SCE will implement the environmental requirements outlined in the EN-2 procedure. The procedure provides

direction in making a determination of what is the level of contamination can be found in an underground structure and procedures on evacuating the material. If the water is found to be clean, the permit allows for its discharge to the street or storm drain. However, if the water is contaminated, the portion of contaminated material must be pumped into a drum or a tank truck, depending on the amount to be evacuated.

Unscheduled Discharges

If there is an equipment failure and or if an emergency condition exists (i.e. power outage), SCE field crews will need to access the underground structure to make repairs or replace equipment. The field crews are directed to follow the procedures as described above in order to ensure the safety of the personnel.

Hydro-Power Generation Operational Procedures

The following steps have been developed to help employees evacuate water from an underground structure and comply with applicable laws. Potential contamination of water must be assessed before discharging within hydro-power generation facilities.

Upon discovery of water in an underground structure, the crew will determine if a sheen on water is visible. If the water appears clean (i.e., no unusual odor, nor is it colored or unusually cloudy based on observation), it is acceptable to discharge the water. As you begin the process of pumping water from the structure, place the pump at the lowest point of the structure and initially place the discharge hose back into the structure until the water is observed to be clean. Once the water is observed to be clean, it is acceptable to discharge the water outside of the structure.

If there are only small amounts of oil on the surface, use absorbent pads or material to skim the oil from the top of the water prior to pumping. Material codes for the absorbent pads or materials are listed below:

1. Absorbent products designed to remove oil only:

    - 1.75 CF Bag — Material Code # 860-04249
    - 4 ft sock — Material Code # 860-04256
    - Netted bilge boom — Material Code # 860-04298

2. Absorbent product designed to remove oil and water:

    - 25 lb. bag — Material Code # 846-00873

Once the crew is ready to pump the structure, ensure that the pump is placed into the lowest point of the structure and follow the same process of pumping the water back into the structure until clean water is detected. Care shall be taken not to pump any oil into the surrounding environment. Once the water is evacuated from the structure, the remaining oily water mixture must then be pumped into 55-gallon drums or a vacuum

truck and disposed of appropriately. If there are sediments or solids at the bottom of the vault, these must be placed in 55-gallon drums and disposed of appropriately.

Contact the Environmental Compliance Manager prior to the evacuation of the structure to help determine procedures for labeling and disposing of any drummed material.

Reservoir Discharges

This section is not applicable because there are no reservoir discharges.

Emergency Operation Discharges

The same criteria would apply as outlined in the unscheduled discharges category.

CONTACT INFORMATION

Hazem Gabr
Corporate Environment, Health & Safety
Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770
Office: (626) 302-3619

CERTIFICATION STATEMENT

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons who manage the system or those persons directly responsible for gathering the information, the information submitted, is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Printed Name Hazem Gabr

Signature Hazem Gabr I am approving this document 2006.11.30 15:02:33 -08'00'

Title Corporate Environment, Health & Safety Technical Specialist

ATTACHMENTS (REFERENCES)

- Attachment A: Underground Structures Water Handling and Disposal, EN-2 (2005) AND the **Draft** Underground Structures Water Handling and Disposal, EN-2
- Attachment B: Underground Detail Inspections, IM-5, pages 1 – 14.
- Attachment C: Sampling and Analysis Program.
- Attachment D: Transmission Line Routine Patrol, Inspection, Scheduling and Record Keeping, Division Order 40.35, pages 1 to 6.
- Attachment E: Maps of SCE territory, RWQCB and Watersheds

Attachment A
Underground Structures Water Handling and Disposal
EN-2

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

Southern California Edison
Transmission and Distribution Business Unit

EN–2: Underground Structures Water Handling and Disposal

Table of Contents

Figures

Attachments

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EN–2
Underground Structures Water Handling and Disposal

1.0 PURPOSE

This procedure establishes the requirements that are necessary to ensure that applicable laws and regulations regarding the handling and disposal of vault water from underground structures (such as vaults, BURD structures, and cable trenches) are followed. The focus of the procedure is on the handling of water and solids (that is, sediments) that CANNOT be discharged to the street or storm drain.

Background

1.1 Southern California Edison (SCE) owns, maintains and operates underground distribution equipment vaults, subsurface transmission cable trenches, underground transmission cable vaults and underground carrier solutions cable vaults. The distribution and transmission service territory encompasses 50,000 square miles and serves approximately 10 million customers. This area extends roughly from Mono County to San Diego County.

1.2 Distribution equipment purchased by SCE, namely transformers and oil-filled switches, are not of the PCB (Askarel) type, but studies have shown that a small percentage of delivered equipment may have been inadvertently contaminated through misapplication of the manufacturer's oil-filling equipment processes. SCE assumes that equipment manufactured in 1980 or earlier may be PCB-contaminated unless additional information indicates otherwise.

2.0 POLICY STATEMENTS

2.1 This procedure is intended to ensure compliance with SCE's General NPDES Permit Discharges by Utility Companies to Surface Water (2001-11-DWQ: Permit #CAG990002). This permit, following these approved procedures, authorizes the proper discharge of water to the streets and storm drains. The permit must be accessible by crews and at the facilities if an agency or internal auditor requests the document.

2.2 When oil-filled electrical equipment leaks or ruptures in structures containing water, the result is usually a mixture of oil and water that must be handled according to the U.S. Environmental Protection Agency (EPA) and state regulations regarding the handling of oil water mixtures (Attachment 2–1 [Page 2–11]). On those occasions where other contaminants are discovered such as biological wastes, solids, gasoline, sewage, or grease, special procedures must be followed, and the TDBU Environmental Specialist must be called.

2.3 A determination must be made of the PCB content of the oil layer in the oily water to ensure the proper handling and disposal. Records of prior PCB lab tests on equipment oil can be used, if available, to determine PCB content of the oily-water mixture. If no records are available, oily water must be tested by the laboratory (Paragraph 4.2, Page 2–4).

In addition, if records indicate the equipment is manufactured after 1980, SCE assumes that the equipment is non-PCB.

3.0 REFERENCES

3.1 U.S. Environmental Protection Agency (EPA) Regulations 40 CFR 761

3.2 California Code of Regulations Title 22, Division 4.5

3.3 State Water Resources Control Board's Statewide General NPDES Permit for Discharges by Utility Companies to Surface Water (2001-11-DWQ; Permit # CAG990002)

3.4 DOM Manual (Section IM-5, Underground Detail Inspections)

3.5 Transmission Underground Construction Standards Manual, Section TU-300: Vaults.

3.6 EN Procedure EN–1, Oil Spill/Release Cleanup Procedures

3.7 DOM Manual (Section TE-5, Infrared Heat Sensing)

4.0 OPERATIONS

The following steps have been developed to help employees evacuate water from a vault, restore service and comply with applicable laws. After conducting the underground inspection per either DOM Manual (Section IM-5, Underground Detail Inspections), or in the Transmission Underground Construction Standards Manual (Section TU-300), whichever is applicable, potential contamination of the vault water must be assessed before discharging.

4.1 Visual Determination of Water

A. Upon discovery of water in the vault, use an approved bailer (material code # 835-00017) to take a water sample from the vault. The sample will give you an idea of the solids and layers of liquid in the vault (Attachment 2–2 [Page 2–12]).

B. In order to use the bailer, use a one-quarter inch cotton or fiber rope and tie the rope to the top of the bailer. Lower the bailer into the vault and the fluid will enter the bottom of the bailer. Fill the bailer from one-half to three-quarters full. The bailer has a ball check valve at the bottom that will seal once the water has entered it. Raise the bailer out of the vault and look at the content of the water. See Paragraph 4.2 (Page 2–4) and Paragraph 4.3 (Page 2–5) for next steps.

C. If you are going to use the bailer to take a sample to a laboratory, use a NEW bailer (M/C 835-00017). Do not reuse a bailer that has been used to sample other vaults. Even though a reused bailer may look clean, small quantities of contaminants may still be present which may distort the lab results. Just pour the liquid through the hole in the top of the bailer into a clean sample jar and send the jar to the laboratory.

4.2 Determine PCB Content-In Equipment (> 50 ppm)

A. Prior to evacuating the vault, call your supervisor to check the date of manufacture found in either CIS or Passport. If the equipment is newer than 1980, treat the oil as non-PCB. Discharge the clean water and ensure no oily sheen is discharged.

B. As you begin the process of pumping water from the vault, initially place the discharge hose back into the vault until the water is observed to be clean. Once the

water discharging is observed to be clean, it is acceptable to discharge the water into the street or storm drain.

C. If the equipment is dated 1980 or before, call your supervisor to check the CIS or Passport to determine if there are prior lab tests. If the PCB content of the oil cannot be determined from prior lab tests, take a sample of oily water. Try to skim the sample off the top to get as much oil as possible.

D. Contact SSID/MTL at PAX 54522 or 1-800-621-8516 to arrange the test. Deliver the samples to SSID/MTL Westminster (Attachment 2–4 [Page 2–14]). A Chain-of-Custody Record Form (Attachment 2–5 [Page 2–15]) must be submitted with each oil or oil-and-water sample. Specify on the form that PCB tests are required.

E. The PCB test will normally take one hour, but could take longer to complete. SSID will call the work location with the results if requested to do so. A copy of the results of the analysis will be sent to the originating work location.

4.3 Removing Non-PCB Oil (<50 ppm) and Water from Underground Structures

There are several methods that can be used to remove non-PCB oil and water from underground structures. The following methods are listed in order of preference:

A. Use an approved bailer (M/C 835-00017) to draw a water sample from the vault. It is an indicator of the contamination that may be in the structure, *for example,* if there is an oily sheen. If the water appears clean, and there is no unusual odor, nor is it colored or unusually cloudy, based on observation, it is acceptable to discharge the water from beneath the surface of the oil into the street or storm drain until the oil layer nears the level of the pump intake.

Care shall be taken not to pump any oil into the street or storm drain. As you begin the process of pumping water from the vault, initially place the discharge hose back into the vault until the water is observed to be clean. Once the water discharging is observed to be clean, it is acceptable to discharge the water into the street or storm drain.

The remaining mixture must then be pumped into 55-gallon drums or a vacuum truck and disposed of appropriately. If there are sediments or solids at the bottom of the vault, these must be placed in 55-gallon drums.

B. If the water emits an unusual odor, or is colored or unusually cloudy, DO NOT pump the water into the street or storm drain.

1. Pump the water into 55-gallon drums or call a contractor for a vacuum truck.
2. See Paragraph 4.6 (Page 2–6) for requesting a vacuum truck.

C. If there are only small amounts of oil on the surface, use absorbent pads or material to skim the oil from the top of the water prior to pumping. Material codes for the absorbent pads or material are listed below:

1. Absorbent products designed to remove oil only:

1.75 CF Bag	860-04249
4 ft sock	860-04256
Netted bilge boom	860-04298

2. Absorbent product designed to remove oil and water:

   25 lb Bag 846-00873

4.4 Visual Determination of Contamination

Once a determination of the oily water is made, an evaluation of other contaminants must be made. For example, are there sewage, solids, vegetation, sediment, biological wastes, solvents, grease, chemicals or gasoline detected? If so, call your TDBU Environmental Specialist to assist with bringing on a contractor to empty the vault.

4.5 Determining Asbestos Content

When entering a vault, scan the equipment to determine if it has been damaged. If so, scan for asbestos or fiberglass. Also, based on the information in the database, if cable or other equipment indicates that the manufacturer date was 1980 or earlier, call your TDBU Environmental Specialist to help determine the asbestos content. If you suspect asbestos for any reason, contact your TDBU Environmental Specialist to assist with bringing on a contractor to empty the vault.

4.6 If a Vacuum Tanker Is Required

A. Use the vault-pumping matrix to determine the amount of oily water in the vault. A vacuum tanker may be required if the entire content of the structure is to be pumped. See Attachment 2–3 (Page 13) and Attachment 2–9 (Page 19).

B. To obtain a vacuum tanker call:

   1. During Normal Work Hours (6 a.m. – 2:30 p.m.) – Call the Material Transport Dispatcher via 1-800-621-8516, or PAX 48633. Otherwise contact the TDBU Environmental Specialist for that area.
   2. During After Hours – Contact the Edison Operator and ask for the on-call TDBU Environmental Specialist (Attachment 2–8 [Page 2–18]).

C. If a water wash-down is required (oil on cables, large quantities of oil on walls or apparatus, and so on), request the appropriate equipment at the same time. Only an Edison-approved degreaser can be used to wash down vaults and equipment. See Paragraph 4.8 (Page 2–8) for pressure washing structures, equipment, components and cable for further details.

D. A completed shipping paper must accompany the shipment (Attachment 2–6 [Page 2–16]).

E. It is important that the pump-truck tank be empty and clean prior to pumping the vault. Open the tank dome lid on all trucks and visually inspect inside to make sure it is clean. If the truck is not clean, reject the pump truck tanker and request another one.

4.7 Disposal Procedures for Drums or Tanker Trucks by SCE or Approved Contractor

A. Disposal Procedures

   1. Oily water is defined as being an oil-and-water mixture that is 90 percent or more water, and 10 percent or less oil.

2. Label the tanker or drums as oily water and transport them to the work location or Irwindale for further analysis.
3. Use a shipping paper, Attachment 2–6 (Page 16), to transport.

B. When the results of the lab test are known, oily water must be disposed of as follows:

1. Oil testing less than 2 ppm PCB can be handled in two different ways, dependent upon the use of an internal crew or an external crew.
   a. **External**—Oil testing less than 2 ppm PCB will be treated as non-hazardous waste. Attach a copy of analytical test results, and send to an Edison-approved disposal facility.
   b. **Internal**—Oil testing less than 2 ppm PCB must be handled as hazardous waste. (Clean Harbors will not pick up unless it is labeled "hazardous waste.")

      Note: *Once the oily water has been pumped into 55-gallon drums, attach analyticals, and dispose of the load through Clean Harbors.*

      1) The remote site contingency plan is in effect and the remote site hazardous waste handling procedures are in effect, which means a shipping paper must accompany the shipment back to the service center and the service center must retain it for three years (Attachment 2–6 [Page 2–16]).
      2) If the oil-and-water mixture is in a vacuum tanker, send the load to an Edison-approved disposal facility.
2. Handle oil testing greater than or equal to 2 ppm PCB and less than 50 ppm as hazardous waste.
   a. If the oily water has been pumped into 55-gallon drums, attach analyticals, and dispose of the load through Clean Harbors.
      1) The Remote Site Contingency Plan is in effect and the remote site hazardous waste handling procedures are in effect, which means a shipping paper must accompany the shipment back to the service center and the service center must retain it for three years (Attachment 2–6 [Page 2–16]).
      2) If oil-and-water mixture is in a vacuum tanker, send the load to an Edison-approved disposal facility.

C. If the oil fraction tests at 50 ppm PCB and greater, the oil and water should be handled as PCB waste. Pump the oil into approved 55-gallon drums and ship them to the respective work location within 10 days.

1. Label the drums with the standard hazardous waste label and the yellow-and-black "Caution Contains PCBs" label.
2. Write on top of the drums: "PCB/WATER" (if mostly water), or "PCB/OIL" (if mostly oil).
   a. Mark each drum with date of removal, and point of origin (work location).
   b. Tape a copy of the lab test report on each drum.

3. Keep a copy of the Department of Toxic Substances Control Transportation Registration Variance in the vehicle's glove compartment.

   Transporter Variance is provided by the TDBU Environmental Specialist.

4. Decontaminate the underground structure according to the PCB spill clean-up described in Procedure EN–1, Oil Spill/Release Cleanup Procedures.

5. Notify your TDBU Environmental Specialist of the incident as soon as possible after receiving notification that the mixture is 50 ppm PCB or greater by calling the SCE Operator at 1-800-621-8516.

4.8 Pressure-Washing Underground Structures, Equipment, Components, and Cable Once Water has been Evacuated

A. When it is necessary to pressure-wash structures, equipment, components, and cable by SCE crews or contractor crews, the following procedure shall apply:

CAUTION **Do not use a steam cleaner on cables or components. Also, DO NOT allow the cleanup contractor to enter "energized" vaults.**

1. Use the approved protective face shield and rain gear.
2. Visually inspect (DOM Manual, Section IM-5, Underground Detail Inspections) and heat-scan (DOM Manual, Section TE-5, Infrared Heat Sensing) all equipment, components, and cable to be washed.
3. At the supervisor's discretion, request "NO TEST ORDERS" on the circuit or circuits to be washed in the structure.
4. When movement of transmission cable or splices or removal of arc-proofing protection is required, the circuits ***must be de-energized prior to starting work***. When it is necessary to wash in transmission vaults and no cables or splices are being moved or any wrapped material is being removed from the splices, **"HOT LINE ORDERS"** shall be taken on all energized circuits. In the event shield arresters are in the vault, the arresters must be grounded.

   Note: *Only approved SCE **Spill Cleanup Contractors** (refer to TDBU Environmental Services Web Site for a list of contractors) shall be used to perform or assist in any cleanup activities. Such approved spill contractors shall **not** perform cleanup procedures within enclosed structures (for example, BURD, CST, Vaults,* and so on.*) unless the structure has been de-energized, and only under the direction of a qualified SCE employee.*

5. Clean structures, equipment, components, and cable only with SC-1000 Cleaner (Gemtek products, MSDS #12307) or X-208 Cleaner (Cabot Corp. MSDS #11883) (M/C 860-00403). The soap mixture should be adjusted, so that the solution just begins to make suds. Excessive suds will leave a residue.
6. The temperature and pressure of the power washer shall be:
   a. Water temperature 125 °F. to 135 °F
   b. Water pressure 60 psi to 90 psi at the wand tip
7. De-energize and/or repair any abnormal equipment, component, or cable condition prior to washing.

8. Hand-taped splices shall not be pressure-washed. Instead, use a garden-type Hudson sprayer in conjunction with hand-cleaning. Care must be exercised to ensure that no solution penetrates any splice or component. This does not preclude the use of pressure-washing on cable in looped transmission vaults where the cable jacket is continuous and there are no splices or shield arresters/grounds to compromise the integrity of the cable jacket.
9. When washing premolded components, use extreme care not to direct the high-pressure water solution directly at the components. Water and contaminants may be forced past the seal and compromise the integrity of the component. An alternative to spraying components with the pressure washer is to use a garden-type Hudson sprayer (not supplied with the washer truck).
10. When washing equipment, use extreme care not to direct the high-pressure water solution directly at any equipment sealing points (*for example,* switch lids, dry fuse wells of BURD equipment, and so on) as water and contaminants may be forced past the seal and into the equipment.
11. Generally, washing the structure from the top of the structure (for example, equipment, cable, and so forth) to the bottom will provide the best results.
12. Once the vault has been pressure washed, evacuate the contents into approved 55-gallon drums or vacuum tanker and transport it to the work location.

Note: *If you are using the SCE washer/pump truck, the operating instructions, protective face shield and rain gear, and washer pressure and temperature settings should be provided with the truck.*

4.9 Vaults With Automatic Sump Pumps

A. When the crew comes upon an automatic sump pump in the vault, determine if the water is clean. If so, leave the pump in automatic. But if the water is contaminated, switch the equipment (pump and/or smart switch) to "manual" mode. Follow the procedures as discussed above to determine how to evacuate the vault of the water. Before leaving the location, switch the equipment back to automatic (Attachment 2–7 [Page 2–17]).

B. Upon arrival at the vault, if the automatic sump pump is pumping water, determine if only clean water is being discharged. If so, allow the pump to continue discharging. If not, render the equipment to "manual mode" when possible and shut off the pump. Lay down absorbent pads to absorb any contaminants that may have been released. Contact your TDBU Environmental Specialist to determine if the release should be reported to an outside agency.

5.0 MAINTENANCE

5.1 Special Equipment

The following items must be stocked at the work location:

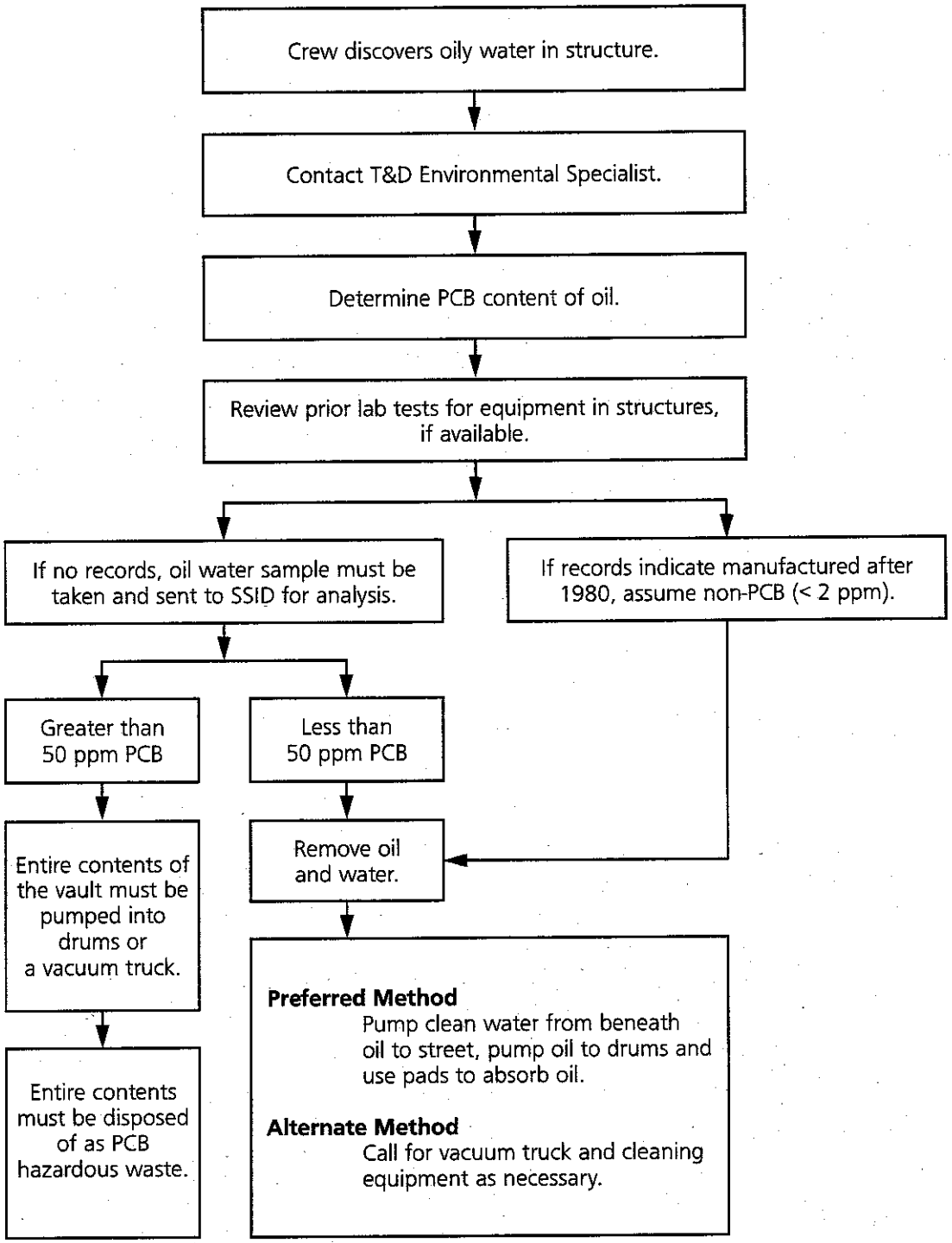
- Two-ounce glass bottle (M/C 885-01358)
- 55-gallon UN-approved drum with two-bung head for liquids (M/C 997-00213)
- Shipping Paper
- Oil and Water Incident Information Sheet

5.2 Maintenance Records

TDBU Environmental Services will maintain records of all PCB or contaminated mineral-oil spills and clean-ups. Additionally, records are kept at the Material Testing Lab for three years.

6.0 ATTACHMENTS

Attachment 2–1: Oily Water Flow Chart

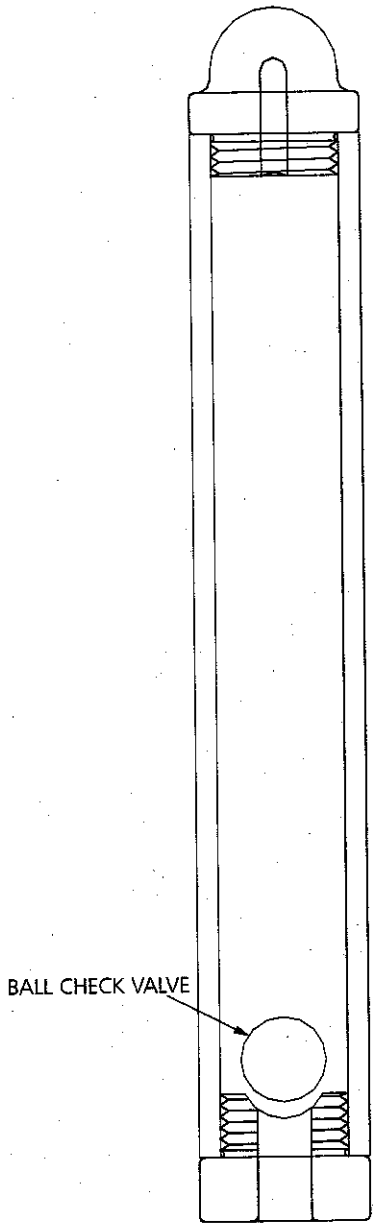


Attachment 2–2: Use of the Bailer

Instructions: Use a one-quarter inch cotton or fiber rope and tie it to the top of the bailer. Lower the bailer into the vault and the fluid will enter the bottom of the bailer. Fill the bailer to one-half to three-quarters full. Fluid can be poured out through the top hole in the bailer. Rinse with clean water after every sample.

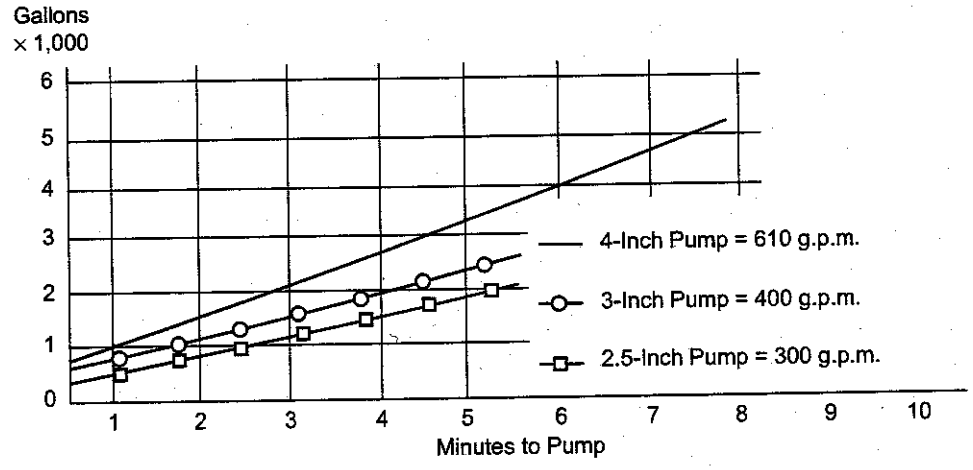
Note: *The bailer can be used only* ***once*** *if it is used to collect a sample that will be sent to SSID or another laboratory for analysis.*

Figure 2–1: Bailer

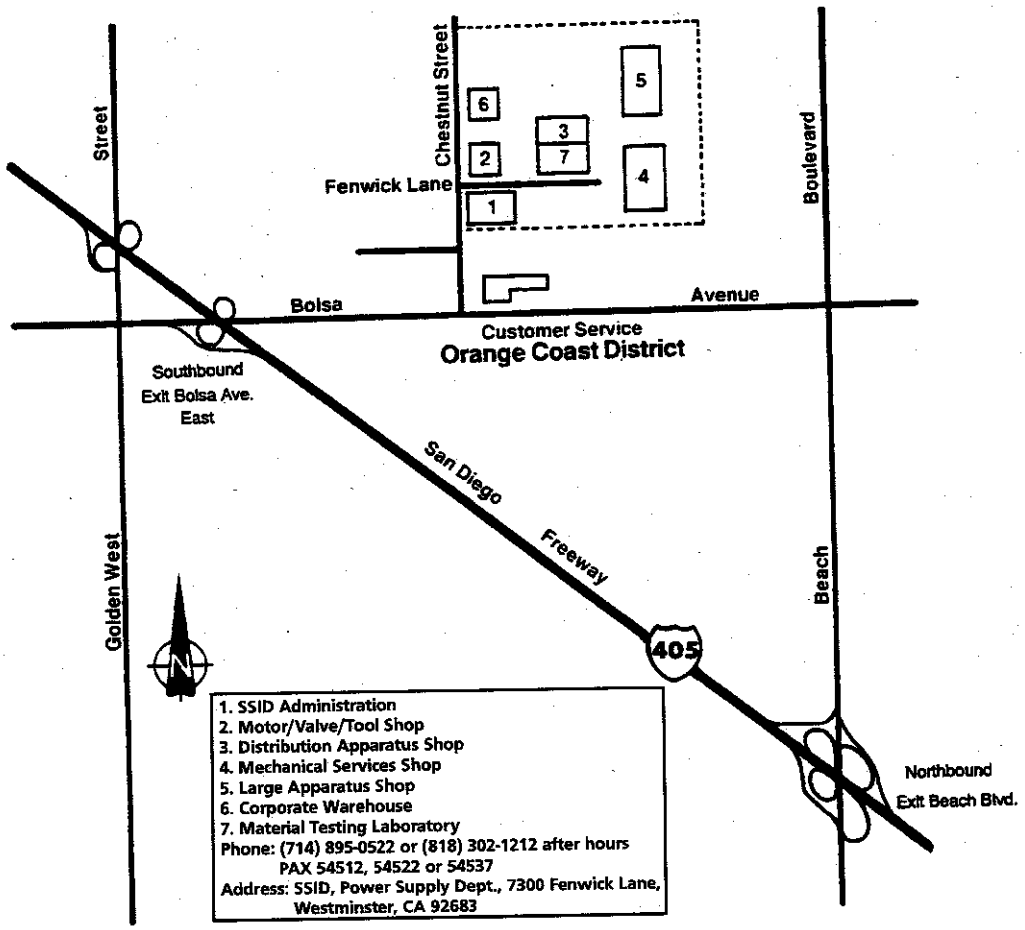


Attachment 2–3: Vault-Pumping Matrix

Figure 2–2: Minutes to Pump



Attachment 2–4: Shop Services and Instrumentation Division Map



Attachment 2–5: Chain of Custody Record Form

SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL® Company

Page ______ of ______

CHAIN OF CUSTODY RECORD

CONTACT NAME:

PONY LOCATION: | PAX: | FAX # PAX:

PROJECT NAME: | PROJECT LOCATION:

CHARGE #: | DEPT: | LAB ANALYSIS #:

LAB: Material Testing Lab, 7351 Fenwick Ln., Westminster, CA 92683
State Lab Certification #1536.
TEL # (714) 895-0522 PAX: 54522
FAX # (714) 895-0695 FAX PAX: 54695

SAMPLE ID	DATE SAMPLED	TIME SAMPLED	EQUIPMENT TYPE	SERIAL NUMBER	SAMPLING LOCATION	SAMPLE TYPE: SOIL	LIQUID	OTHER	ANALYSIS REQUESTED: PCB	EPA Specification Test	TPH			Check here if sample was taken from an Oil Spill.
Example	*09 / 01 / 00*	*19 : 05*	*4 kV pot*	*4460884799*	*Field (spill site)*		*x*		*x*		*x*			☒
	/ /	:												☐
	/ /	:												☐
	/ /	:												☐
	/ /	:												☐
	/ /	:												☐

Collected By:		Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Relinquished By:	Received By:	Date / /	Time :
Results Needed By:	Method of Shipment: ☐ PONY ☐ In Person ☐ Other ______		

SCE 16-312 Rev. 11/00

EXAMPLE

Attachment 2–6: Shipping Paper Form

SOUTHERN CALIFORNIA EDISON®
An EDISON INTERNATIONAL® Company

SOUTHERN CALIFORNIA EDISON CO.
2131 WALNUT GROVE AVE., ROSEMEAD, CA 91770 626-302-1212
EMERGENCY TELEPHONE: 800-451-8346

SHIPPING PAPER

REMOTE SITE (ship from)

NAME _____

ADDRESS _____

DATE OF SHIPMENT: _____

CONSOLIDATION SITE (ship to)

NAME _____

ADDRESS _____

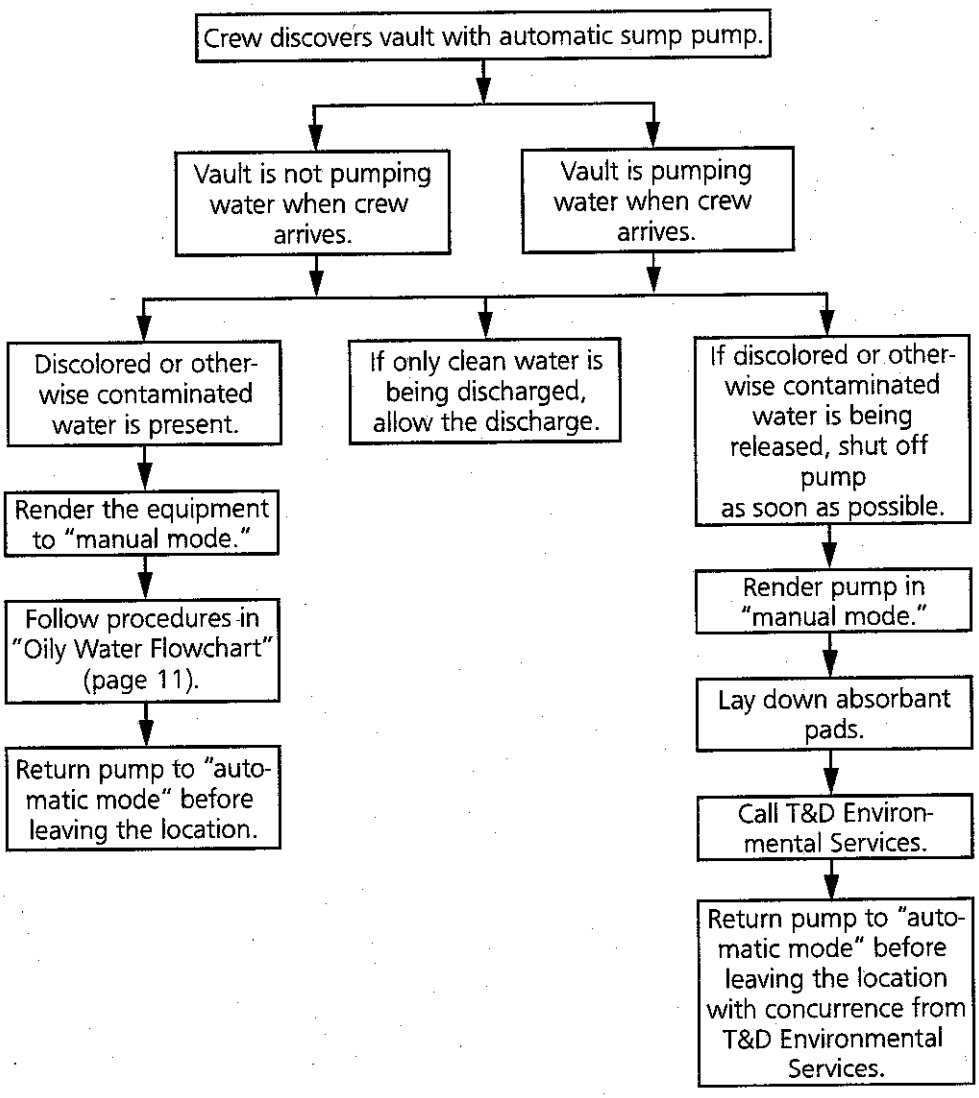
STORAGE START DATE : _____

No. of containers	Type of container	H M	TYPE OF WASTE (drums)	Shipping Name	Weight	Liquid	Solid	Date generated
			Oily debris, dirt (oil < 50 ppm PCB)	Oily debris, dirt (oil < 50 ppm PCB)			X	
			Mineral oil, no PCBs	Non RCRA Hazardous waste, Liquid (Used Oil)		X		
			Oily water, no PCBs	Non-RCRA Hazardous Waste, Liquid (Oily Water)		X		
			Oily water, oil < 50 ppm PCBs	Non-RCRA Hazardous Waste, Liquid (Oily Water)		X		
			Mineral oil containing >2 and <50ppm PCB	Non-RCRA Hazardous Waste, Liquid, (PCB Contaminated Oil)		X		
			Mineral oil containing ≥ 50 ppm PCB	Non RCRA Hazardous Waste, Liquid (PCB Contaminated. Oil)		X		
			Debris contaminated with ≥ 50 ppm PCB mineral oil	Non RCRA Waste, Solid (PCB Contaminated debris)			X	
		X	PCB Contaminated Oil, RQ Present in one Container	RQ , Polychlorinated biphenyls, Liquid, 9, UN2315,PG III		X		
		X	PCB Contaminated Solids, RQ present in one container	RQ , Polychlorinated biphenyls, Solid, 9, UN2315,PG III		X		
		X	Liquid Fuses	Toxic Liquids, Organic N.O.S., 6.1, UN2810, PG III, (Tetrachloroethylene, Trichloroethylene)		X		

SIGNATURE: _____

DRIVER: THIS DOCUMENT MUST BE WITHIN REACH DURING THE ENTIRE TIME THE VEHICLE IS ON THE ROADWAY. THIS DOCUMENT MUST BE KEPT ON FILE FOR THREE YEARS.

Attachment 2–7: Automatic Sump Pumps in Vaults Flow Chart



Attachment 2–8: TDBU Environmental Specialist Contact List

Environmental Specialist Area of Responsibility	PAX	Pager	Cell Phone
Ken Herrera			
Highland (partial)	8-71525	319506	(805) 490-7111
North Coast	8-71525	319506	(805) 490-7111
San Joaquin	8-71525	319506	(805) 490-7111
Miguel Flores			
Desert (partial)	8-15112	600601	(909) 288-6343
San Jacinto	8-15112	600601	(909) 288-6343
Wayne Williams			
Desert (partial)	8-11250	286696	(909) 615-8527
Highland (partial)	8-11250	286696	(909) 615-8527
Ron Harnsberger			
Orange	8-54278	130226	(714) 267-9068
Metro East (partial)	8-54278	130226	(714) 267-9068
Jon Natisch			
Metro West	8-44519	600602	(626) 253-5270
Metro East (partial)	8-44529	600602	(626) 253-5270
John Slayton			
Pebbly Beach (Catalina)	8-35238	880354	(310) 990-1745
THUMS	8-35238	880354	(310) 990-1745
Ita Vandenbroek			
SSID/ESI	8-54498	816602	(909) 615-8527
Waste Disposal	8-54498	816602	(909) 615-8527
Robert W. Johnson			
SSID/ESI	8-54530	814148	(909) 228-5537
Chemical Utilization	8-54530	814148	(909) 228-5537
Pete Guereca	6		
EH&S Contractor Compliance	8-12542	852470	(909) 313-9045

Note: *For assistance after normal working hours, contact the Edison Operator, (626) 302-1212, for the On-Call TDBU Environmental Specialist.*

Attachment 2–9: Approximate Volume (Gallons) of Liquid in Underground Structures

Table 1: Approximate Volume (Gallons) of Liquid in Underground Structures

Basic Structure Size Width x Length (ft)	Depth of Liquid Contained in Structure (ft)								
	1	2	3	4	5	6	7	8	9
3 x 3	70	140	200	270	340	400	480	540	600
4 x 4	120	240	360	480	600	720	840	960	1,100
4 x 7	210	420	630	840	1,000	1,300	1,500	1,700	1,900
5 x 8	300	600	900	1,200	1,500	1,800	2,100	2,400	2,700
6 x 8	360	710	1,100	1,400	1,800	2,200	2,500	2,900	3,200
6 x 10	450	900	1,300	1,800	2,200	2,700	3,100	3,600	4,000
8 x 14	840	1,700	2,500	3,400	4,200	5,000	5,900	6,700	7,500
8 x 18	1,100	2,200	3,200	4,300	5,400	6,500	7,500	8,600	9,700
8 x 22	1,300	2,600	4,000	5,300	6,600	7,900	9,200	10,500	11,800
8 x 24	1,400	2,900	4,300	5,700	7,200	8,600	10,100	11,500	12,900

Example: A 6 ft x 8 ft vault with four feet of water has approximately 1,400 gallons of liquid.

Southern California Edison
Transmission and Distribution Business Unit

EN-2 Underground Structure Water Handling and Disposal

Table of Contents

Chapter and Title **Page**

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EN-2 Underground Structures Water Handling and Disposal

1.0 PURPOSE

This procedure establishes the requirements that are necessary to ensure that applicable laws and regulations regarding the handling and disposal of vault water from underground structures (such as vaults, BURD structures, and cable trenches) are followed. The focus of this procedure is to minimize impact from the dewatering process that has the potential of containing solids (sediments) and oil on the handling of water and solids (that is, sediments) that CANNOT be discharged to the street or storm drain.

The Southern California Edison (SCE) Transmission and Distribution service territory encompasses 50,000 square miles and approximately 13 million customers. This area extends roughly from Mono County to San Diego County and is primarily concentrated in Los Angeles, San Bernardino, Ventura, Riverside and Orange Counties. There are over 396,000 various underground structures that exist in the SCE system. Southern California Edison (SCE) owns, maintains and operates underground distribution equipment vaults, subsurface transmission cable trenches, underground transmission cable vaults and underground carrier solutions cable vaults. The distribution and transmission service territory encompasses 50,000 square miles and serves approximately 10 million customers. This area extends roughly from Mono County to San Diego County.

Distribution equipment purchased by SCE, namely transformers and oil-filled switches, are not of the PCB (Askarel) type, but studies have shown that a small percentage of delivered equipment may have been inadvertently contaminated through misapplication of the manufacturer's oil-filling equipment processes. SCE assumes that equipment manufactured in 1980 or earlier may be PCB-contaminated unless additional information indicates otherwise.

2.0 POLICY STATEMENTS

This procedure is intended to ensure compliance with SCE's General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges from utility vaults and underground structures to surface waters by Utility Companies to Surface Water (2006-0008-DWQ: Permit #CAG990002). This permit, following these approved procedures, authorizes the proper discharge of water to the streets and storm drains within the municipalities of the State of California. Thee permit must be accessible to SCE's field crews and located at the facilities if an agency or internal auditor requests the document.

When oil-filled electrical equipment leaks or ruptures in structures containing water, the result is usually a mixture of oil and water that must be handled according to the U.S. Environmental Protection Agency (EPA) and state regulations regarding the handling of oil water mixtures (Attachment 2-1). On those occasions where other contaminants are discovered such as biological wastes, solids, gasoline, sewage, or grease, special procedures must be followed, and the TDBU Environmental Specialist must be called.

A determination must be made of the PCB content of the oil layer in the oily water must be determined to ensure the proper handling and disposal. Records of prior PCB lab tests on

equipment oil can be used, if available, to determine PCB content of the oily-water mixture. If no records are available, oily water must be tested by the laboratory (Paragraph 4.2,).
In addition, if records indicate the equipment is manufactured after 1980, SCE assumes that the equipment is non-PCB.

3.0 REFERENCES

3.1 U.S. Environmental Protection Agency (EPA) Regulations 40 CFR 761
3.2 California Code of Regulations Title 22, Division 4.5
3.3 State Water Resources Control Board's Statewide General NPDES Permit for Discharges by Utility Companies to Surface Water (2006-0008-DWQ: Permit # CAG990002)
3.4 Distribution Operations and Maintenance (DOM) Policies and Procedures DOM Manual (Section IM-5, Underground Detail Inspections)
3.5 Transmission Underground Construction Standards Manual, Section TU-300:Vaults.
3.6 EN Procedure EN-1, Oil Spill/Release Cleanup Procedures
3.7 Distribution Operations and Maintenance (DOM) Policies and Procedures DOM Manual (Section TE-5, Infrared Heat Sensing)

4.0 OPERATIONS

The following steps have been developed to help employees evacuate water from a vault (dewater), restore service and comply with applicable laws. After conducting the underground inspection per either the DOM Manual (Section IM-5, Underground Detail Inspections), or in the Transmission Underground Construction Standards Manual (Section TU-300), whichever is applicable, potential contamination of the vault water must be assessed before discharging.

4.1 Visual Determination of Water

A. Upon discovery of water in the vault, use an approved bailer (material code # 835-00017) to obtain water sample from the vault. The sample will give you an indication of the level of contamination such as solids and layers of liquid in the vault (Attachment 2-2 [Page 2-12]).
B. In order to use the bailer, use a one-quarter inch cotton or fiber rope and tie the rope to the top of the bailer. Lower the bailer into the vault and the fluid will enter the bottom of the bailer. Fill the bailer from one-half to three-quarters full. The bailer has a ball check valve at the bottom that will seal once the water has entered it. Raise the bailer out of the vault and look at the content of the water. See Paragraph 4.2 and Paragraph 4.3 for next steps.
C. If you are going to use the bailer to take a sample to a laboratory, use a NEW bailer (M/C 835-00017). Do not reuse a bailer that has been used to sample other vaults. Even though a reused bailer may look clean, small quantities of contaminants may still be present which may distort the lab results. Just pour the liquid through the hole in the top of the bailer into a clean sample jar and send the jar to the laboratory.

4.2 Determine PCB Content-In Equipment (> 50 ppm)

After the visual determination of the presence of thick oil sheen follow the steps below:

A. Prior to evacuating the vault, call your supervisor to check the date of manufacture found in either CIS or Passport. If the equipment is manufactured later newer than 1980, treat the oil as non-PCB. A constant visual attendant of the Discharge of the clean water must be maintained to and ensure that no oily sheen or solids are discharged.
B. Prior to pumping, initially place the discharge hose back into the vault until the water is observed to be clean. Once the water discharging is observed to be clean, it is acceptable to discharge the water into the street or storm drain.
C. If the equipment is dated 1980 or before, and there is a significant oil sheen, call a vacuum truck to evacuate the oily water.

4.3 Removing Non-PCB Oil and Water from Underground Structures

There are several methods that can be used to remove non-PCB oil and water from underground structures. The following methods are listed in order of preference:

A. This method is recommended for un-urbanized/rural areas (ex. desert)
Use an approved bailer (M/C 835-00017) to draw a water sample from the vault. It is an indicator of the contamination that may be in the structure, for example, if there is an oily sheen. If the water appears clean, and there is no unusual odor, nor is it colored or unusually cloudy, based on observation, it is acceptable to discharge the water from beneath the surface of the oil into the street or storm drain until the oil layer nears the level of the pump intake. If the previous conditions mentioned do not exist (oily-water, cloudy, sediment, odor) Care shall be taken not to pump any oil into the street or storm drain. As you begin the process of pumping water from the vault, initially place the discharge hose back into the vault until the water is observed to be clean. Once the water discharging is observed to be clean, it is acceptable to discharge the water into the street or storm drain. The remaining mixture must then be pumped into 55-gallon drums or a vacuum truck and disposed of appropriately. If there are sediments or solids at the bottom of the vault, these must be placed in 55-gallon drums

B. This method is recommended for urbanized areas using a Filter Sock
Use an approved bailer (M/C 835-00017) to draw a water sample from the vault. It is an indicator of the contamination that may be in the structure, for example, if there is an oily sheen. If the water appears clean, and there is no unusual odor, nor is it colored or unusually cloudy, based on observation, it is acceptable to discharge the water.
Prior to setting up for vault pumping an inspection of all equipment should be completed to insure a safe efficient vault water evacuation. This equipment inspection should include (but not be limited to):

PUMP
The pump should be inspected for physical damage, cut or chaffed cables, debris at the inlet or outlets. If using a hydraulic pump, make sure the hydraulic seals are in good working order and not leaking. Leaking seals can quickly fill the FILTER SOCK and oil will begin to leak from the sock.

HOSE
The operator should insure they have sufficient hose in good working order as to reach from the pump, to as near the storm drain as possible. The hose(s) should be inspected for cuts, pin holes or chaffed sections that could weaken under pressure and leak unfiltered water onto the street and/or down into the storm drain. Further the hose should be checked at the fittings for tight seals and solid fittings/connections. This inspection should include all gasket/ fitting seals. If the fitting is not 2" diameter female (matching the filter sock 2" male end) use an adapter.

FILTER SOCK (M/C 860-01799 Filter Sock)
The sock should be inspected to insure it is new and unused. A used sock may have a large amount of oil contained within its fibers which could quickly begin to leach out should more oil become present from the new pump operation. The sock should be checked for cuts, tears or other imperfections that may prevent it from functioning as a filter device. Finally the fittings should be closely inspected to make sure it is in good working order with no cracks, or chips.

Discharging vault water using an approved Filter Sock (M/C 860-01799)

a. Once all equipment and the vault are inspected, it will be important to determine where the storm drain is as compared to the vault location. This will be important to decide how much hose should be used and where to roll out the hose to get as close to the storm drain as possible.
b. Connect the hose to the vault pump. Lower the pump down into the vault. Unroll the hose towards the storm drain. If required, add additional hose to get as close to the storm drain as possible. Remove the FILTER SOCK from its black pail. Attach the FILTER SOCK to the end of the hose and lay it on a flat surface near the entrance to the storm drain. (Be sure to remove any debris between the FILTER SOCK and the entrance to the storm drain to prevent street debris from entering the drain.)
c. Start the pump. While pumping the vault, be sure to regularly inspect the outflow of water from the sock. It will be important to view the outflow to see when the sock is filling up with sediment or oil and change the sock as needed. A new FILTER SOCK will typically exceed flows of 100 GPM (depending on the pump used). Once filter sock becomes laden with sediment, flow will be reduced gradually. At this point the pump should be shut off, and the sock replaced.
d. Once the pumping operations are complete, shut the pump off. Pull the pump from the vault and disconnect from the hose. Roll the hose towards the FILTER SOCK. If there are multiple hoses, continue rolling hoses towards the FILTER SOCK and disconnecting the hoses without allowing unfiltered water to escape. When you reach the FILTER SOCK, disconnect from the hose holding the fitting end up as to continue to drain. Place the FILTER SOCK back in its pail and screw the lid back on as to seal any liquid in the pail. Used Filter Sock can be accumulated in 55 g drums and disposed as non-hazardous waste.

If the water emits an unusual odor, or is colored or unusually cloudy, or contains thick layer of oil sheen DO NOT pump the water into the street or storm drain.

1. Pump the water into 55-gallon drums or call a contractor for a vacuum truck.
2. See Paragraph 4.6 for requesting a vacuum truck.

4.4Visual Determination of Contamination

Once a determination of the oily water is made, an evaluation of other contaminants must be made. For example, are there sewage, solids, vegetation, sediment, biological wastes, solvents, grease, chemicals or gasoline detected? If so, call your TDBU Environmental Specialist to assist with obtaining a vacuum truck through an outside contractor.

4.5 Determining Asbestos Content

When entering a vault, scan the equipment to determine if it has been damaged. If so, scan for asbestos or fiberglass. Also, based on the information in the database, if cable or other equipment indicates that the manufacturer date was 1980 or earlier, call your TDBU Environmental Specialist to help determine the asbestos content. If you suspect asbestos for any reason, contact your TDBU Environmental Specialist to with obtaining a vacuum truck through an outside contractor

4.6 If a Vacuum Tanker is Required

A. Use the vault-pumping matrix to determine the amount of oily water in the vault. A vacuum tanker may be required if the entire content of the structure is to be pumped. See Attachment 2-3 and Attachment 2-9.
B. To obtain a vacuum tanker call:
   1. During Normal Work Hours (6 a.m. - 2:30 p.m.) - Call the Material Transport Dispatcher via 1-800-621-8516, or PAX 48633. Otherwise contact the TDBU Environmental Specialist for that area.
   2. During After Hours - Contact the Edison Operator and ask for the on-call TDBU Environmental Specialist (Attachment 2-8).
C. If a water wash-down is required (oil on cables, large quantities of oil on walls and/or apparatus), request the appropriate equipment at the same time. Only an Edison-approved degreaser can be used to wash down vaults and equipment. See Paragraph 4.8 for pressure washing structures, equipment, components and cable for further details.
D. A completed shipping paper must accompany the shipment (Attachment 2-6).
E. It is important that the pump-truck tank be empty and clean prior to pumping the vault. Open the tank dome lid on all trucks and visually inspect inside to make sure it is clean. If the truck is not clean, reject the pump truck tanker and request another one.

4.7 Disposal Procedures for Drums or Tanker Trucks by SCE or Approved Contractor

Please follow procedures in the document "Salvage or Waste Disposal Services"

4.8 Pressure-Washing Underground Structures, Equipment, Components, and Cable Once Water has been evacuated

When it is necessary to pressure-wash structures, equipment, components, and cable by SCE crews or contractor crews, the following procedure shall apply:

Do not use a steam cleaner on cables or components. Also, DO NOT allow the cleanup contractor to enter "energized" vaults.

1. Use the approved protective face shield and rain gear
2. Visually inspect (DOM Manual, Section IM-5, Underground Detail Inspections) and heat-scan (DOM Manual, Section TE-5, Infrared Heat Sensing) all equipment, components, and cable to be washed
3. At the supervisor's discretion, request "NO TEST ORDERS" on the circuit or circuits to be washed in the structure.

4. When movement of transmission cable or splices or removal of arc-proofing protection is required, the circuits must be de-energized prior to starting work. When it is necessary to wash in transmission vaults and no cables or splices are being moved or any wrapped material is being removed from the splices, "HOT LINE ORDERS" shall be taken on all energized circuits. In the event shield arresters are in the vault, the arresters must be grounded.
   Note: Only approved SCE Spill Cleanup Contractors (refer to TDBU Environmental Services Web Site for a list of contractors) shall be used to perform or assist in any cleanup activities. Such approved spill contractors shall not perform cleanup procedures within enclosed structures (for example, BURD, CST, Vaults, and so on.) unless the structure has been de-energized, and only under the direction of a qualified SCE employee.

5. Clean structures, equipment, components, and cable only with SC-1000 Cleaner (Gemtek products, MSDS #12307) or X-208 Cleaner (Cabot Corp. MSDS #11883) (M/C 860-00403). The soap mixture should be adjusted, so that the solution just begins to make suds. Excessive suds will leave a residue
6. The temperature and pressure of the power washer shall be:
   a. Water temperature 125 °F. to 135 °F
   b. Water pressure 60 psi to 90 psi at the wand tip

7. De-energize and/or repair any abnormal equipment, component, or cable condition prior to washing
8. Hand-taped splices shall not be pressure-washed. Instead, use a garden-type Hudson

sprayer in conjunction with hand-cleaning. Care must be exercised to ensure that no solution penetrates any splice or component. This does not preclude the use of pressure-washing on cable in looped transmission vaults where the cable jacket is continuous and there are no splices or shield arresters/grounds to compromise the integrity of the cable jacket.

9. When washing pre-molded components, use extreme care not to direct the high-pressure water solution directly at the components. Water and contaminants may be forced past the seal and compromise the integrity of the component. An alternative to spraying components with the pressure washer is to use a garden-type Hudson sprayer (not supplied with the washer truck).
10. . When washing equipment, use extreme care not to direct the high-pressure water solution directly at any equipment sealing points (for example, switch lids, dry fuse wells of BURD equipment, and so on) as water and contaminants may be forced past the seal and into the equipment
11. Generally, washing the structure from the top of the structure (for example, equipment, cable, and so forth) to the bottom will provide the best results
12. Once the vault has been pressure washed, evacuate the contents into approved 55-gallon drums or vacuum tanker and transport it to the work location.
    Note: If you are using the SCE washer/pump truck, the operating instructions, protective face shield and rain gear, and washer pressure and temperature settings should be provided with the truck

4.9 Vaults Equipped With Automatic Sump Pumps

A. When the crew comes upon an automatic sump pump in the vault, determine if the water is clean. If so, leave the pump in automatic. But if the water is contaminated, switch the equipment (pump and/or smart switch) to "manual" mode. Follow the procedures as discussed above to determine how to evacuate the vault of the water. Before leaving the location, switch the equipment back to automatic (Attachment 2-7 [Page 2-17]).
B. Upon arrival at the vault, if the automatic sump pump is pumping water, determine if only clean water is being discharged. If so, allow the pump to continue discharging. If not, render the equipment to "manual mode" when possible and shut off the pump. Lay down absorbent pads to absorb any contaminants that may have been released. Contact your TDBU Environmental Specialist to determine if the release should be reported to an outside agency.

5.0 MAINTENANCE

5.1 Special Equipment

The following items must be stocked at the work location:
□ Two-ounce glass bottle (M/C 885-01358)
□55-gallon UN-approved drum with two-bung head for liquids (M/C 997-00213)
□ Shipping Paper
□ Oil and Water Incident Information Sheet

5.2 Maintenance Records

TDBU Environmental Services will maintain records of all PCB or contaminated mineral-oil spills and clean-ups. Additionally, records are kept at the Material Testing Lab for three years.

6.0 Special Provision

The operator shall report any noncompliance that may endanger health or the environment. Any information shall be provided immediately to TDBU environmental specialist. A written submission shall be provided within two (2) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence.

Attachment B:
O&M Policy & Procedures Manual, IM-5, pages 1–14,
Underground Detail Inspections

IM–5: Underground Detailed Inspections

1.0 PURPOSE

This document describes the procedure, activities and forms for performing Underground Detail Inspections. These inspections evaluate the safety and condition of all underground electrical distribution facilities.

2.0 POLICY STATEMENTS

2.1 Underground Detail Inspections (UDI) are a critical review of underground distribution circuits. The purpose of the UDI is to identify, record and/or prioritize for later correction, all safety and California Public Utilities Commission (CPUC) General Order G.O. 128 discrepancies.

2.2 Underground Detail Inspections will verify the condition, corrosion level, and inventory records of each piece of equipment in each structure inspected.

2.3 An inspection form will be completed each time an underground structure is entered. This procedure also pertains to pad mounts.

2.4 Original copy of inspection records will be submitted to Performance Management and Analysis (PMA) within one week of inspection date. Performance Management and Analysis will update Work Management System (WMS) files with inspection information within one week of receipt.

2.5 Inspectors assigned to UDI will also perform maintenance to underground equipment, cables, and structures, and to water preventive/removal systems at the time of inspection.

2.6 UDI frequency is identified in IM–1: Distribution Inspection Program.

2.7 All G.O. 128 discrepancies, corrected as found, will be recorded and stored as a paper record. Discrepancies corrected during storm or emergency events will not be recorded. The form for recording As-Found Discrepancy corrections is in IM–13: Reporting Minor G.O. 95 and G.O. 128 As-Found Repairs.

3.0 REFERENCES

3.1 SCE Underground Construction Standards Manual

3.2 CPUC G.O.s 128 and 165

3.3 Distribution Operations and Maintenance Policies and Procedures (DOM), CP–3: Vault Sump Pumps

3.4 DOM, IM–1: Distribution Inspection Program

3.5 DOM, IM–2: Maintenance Priorities

3.6 DOM, IM–4: Circuit Patrol Inspections

3.7 DOM, TE–5: Infrared Heat-Sensing Devices – Underground Equipment

3.8 DOM, TE–6: Safe-T-Mate/GT-2400 Gas and Oxygen Monitors

3.9 DOM, TR–7: Vault Blowers

4.0 OPERATIONS

4.1 Underground Detail Inspections will inspect underground structures for hazards, for public or worker safety, and for circuit reliability problems.

4.2 Before a confined structure is entered, combustible gas and oxygen levels must be monitored as described in TE–6: Safe-T-Mate/GT-2400 Gas and Oxygen Monitors.

4.3 Upon entering the structure, Infrared Heat Scanning of cable, components, and equipment, as described in TE–5: Infrared Heat-Sensing Devices – Underground Equipment, will be performed.

4.4 Inspectors performing Underground Detail Inspections will use the "Condensed Activity List for Underground Detail Inspections," Attachment 1 (Page 4), as a minimal guide. Inspectors will inspect and report all equipment within a structure, and confirm the configuration numbering of the equipment as shown on the "Work Summary Sheet." The report used for UDI is obtained by extracting WMS structure information similar to Attachment 4 (Page 9). Inspectors confirm the printed WMS information, add any new findings not corrected previously or at the time of inspection, and submit the form in marked up condition to PMA.

4.5 Inspectors must reference the appropriate DOM equipment procedure for evaluating and testing of specific underground equipment or apparatus.

Blowers will be inspected and serviced in accordance with TR–7: Vault Blowers.

Sump pumps will be inspected and serviced in accordance with CP–3: Vault Sump Pumps. In addition, refer to the Environmental Policies and Procedures Manual for pumping procedures.

4.6 Inspectors must perform structure cleanup of debris or materials prior to leaving the structure. Proper structure cleanout will assist longevity of pumps and related equipment.

4.7 Inspections performed in conjunction with Work Orders or routine work shall be as comprehensive as a scheduled Detail Inspection. Use Underground Inspection Form (SCE 14-581), shown as Attachment 3 (Page 8).

4.8 For each problem found and not corrected (a) a four-digit Problem Code will be assigned by using the Problem Code List in the Passport, WMS, referred to in Attachment 2 (Page 7), "Underground Problem Codes," and (b) a Maintenance Priority will be assigned by using the summary priority charts in IM–2: Maintenance Priorities. Problems found will be reported on the Attachment 5 (Page 12), "Field Work Control Document" form.

4.9 As-Found Discrepancies fixed during the Inspection will be recorded on the "As-Found Correction" Form, explained in IM–13: Reporting Minor G.O. 95 and G.O. 128 As-Found Repairs. Performance Management and Analysis will summarize and report these totals on a monthly basis.

4.10 Performance Management and Analysis will enter inspection findings into WMS within one week of receipt.

5.0 MAINTENANCE

5.1 Corrective action time frames, as a result of the Inspection findings, are described on the equipment specific charts in IM–2: Maintenance Priorities.

5.2 Identified maintenance as a result of UDI, which is not corrected at the time of inspection will print out on WMS backlog inquiries. When these items are corrected, PMA will be notified by the completed WCD to close out the electronic record in WMS.

6.0 ATTACHMENTS

Attachment 1: Condensed Activity List for Underground Detail Inspections *(Sheet 1 of 3)*

Table 1: Structure

A. External

1. Check for missing or damaged manhole lid gasket/seal rope.
2. Check air vents for damage and presence of shields around vent standpipe in landscaped areas.
3. Check vault lid (equipment cover) seal (felt) and lifting hole plugs.
4. Check for evidence of water ponding on top of the structure.
5. Check for missing/damaged bolts or penta bolts.
6. Check for debris in or around structures.(Good Housekeeping)
7. Check for visual hazards.
8. Check for structure movement.
9. Verify that HIGH VOLTAGE signs and the structure number are legible.
10. Check for exterior damage to structure.
11. Check for sufficient work space around structure.
12. Check that traffic barrier(s) are in place and that adequate clearance exists in front of structure.
13. Check for deterioration of concrete.
14. Check for signs of corrosion (specifically inspect weld seams, corners, door hinges, and enclosure roof.).
15. Check that the structure is sound and secure.
16. Check for openings in structure which may allow the passage of wire, or other conducting material into the structure from the outside.
17. Check for exterior damage to adjacent service handholes or splice boxes.
18. Secure lids/covers prior to leaving site.

B. Internal

1. Check for water inside the structure.
2. Check for sand, dirt, mud, signs of vermin, debris, and so forth
3. Verify cable tags are as complete as possible and consistent with the circuit map.
4. Verify that cable clearances are adequate, not rubbing on sharp edges.
5. Check that duct plugs are installed and in good working order in all necessary ducts.
6. Check if the vent is leaking, or shows signs of previous leaking.
7. Check for corrosion of ground rods and cables and all ground connections are proper.
8. Check for concrete spalling and rebar rusting.
9. Remove debris and loose materials from inside structure.

Note: *The above list is to be used as a guide and inspection should not necessarily be limited to the list.*

Attachment 1: Condensed Activity List for Underground Detail Inspections *(Sheet 2 of 3)*

Table 2: Equipment

1. Perform thermal scan for hot spots on structure and all equipment, cable, terminations, and splices.
2. Check for signs of termination overheating or distortion.
3. Check for signs of corrosion, oil leakage, and low oil levels.
4. Check operation of vault blower (transformer structures) and perform maintenance.
5. Check operation of sump pumps and perform maintenance.
6. Check for scratches or abrasion to bare metal on equipment.
7. Inspect weld seams.
8. Inspect external operating mechanism.
9. Inspect operating shaft seals.
10. Inspect gaskets (cover, cableheads, and so forth).
11. Inspect oil fill plug and sight gauge seals.
12. Inspect tightness of hold-down bails.
13. Inspect condition of marine-coating.
14. Inspect fuse carriers for proper locking and sealing.
15. Check for sufficient work space around equipment.
16. Verify appropriate signs are legible, that is, signs for ownership, 8-ft clearance, ferroresonant condition, switch feeding a capacitor bank, and so forth.
17. Check for signs of contamination, tracking, or deterioration of insulating barriers and arc interrupting chutes.
18. Verify electrical clearances are maintained between barriers, like parts, and other insulated components.
19. Verify that phase barriers are securely attached.
20. Verify that the ground conductor is the correct size and is attached to the ground pad on the tank.
21. Check safety barrier installation and condition on live front equipment.
22. In live-front equipment, verify that the fuse clips are in good condition (no signs of heating, arcing, or corrosion).
23. Verify that locking devices are in place.
24. Inspect mounting bolts for the correct size and number, tightness and corrosion.

Note: *The above list is to be used as a guide and inspection should not necessarily be limited to the list.*

Attachment 1: Condensed Activity List for Underground Detail Inspections *(Sheet 3 of 3)*

Table 3: Apparatus Equipment

The following list is designed for non-technicians to use while performing their normal work in and around apparatus equipment, such as network protectors, P.E. gear, fault interrupters, automatic circuit reclosers, regulators, sectionalizers, and capacitor banks.

1. Check for bulging, ruptured, or discolored capacitor units.
2. Inspect fuseholders, cutouts, or fused disconnects.
3. Check for blown fuses.
4. Check cable and cable terminations for signs of deterioration or damage (underground).
5. Heat scan the cable, terminations, and equipment (underground).
6. Check for corrosion or other damage.
7. Check for oil or compound leaks.
8. Check clearances, barriers, and grounding.
9. Check weld seams.
10. Inspect operating shaft seals.
11. Check oil fill and sight gauge seals (underground)
12. Check condition of marine coating (underground).
13. Check to see if relay tripped (if applicable).
14. Check for loose connections (arcing or burning).
15. Check for damaged or blown control transformer.
16. Check for approved locking devices in place and locked.
17. Check for exterior/interior damage to enclosure (underground).
18. Check for washout or excavation around enclosure (underground).
19. Check that High Signs, and so forth, are legible.
20. Check that enclosure mountings are securely bolted to structure (underground).
21. Check for signs of rodents or other animals (underground).
22. Check for any signs of water or oil within the apparatus housing (underground).
23. Enter the status of equipment, counter and load reads, any abnormal conditions, and the names of all inspection personnel in the log provided at equipment.

Note: *The above list is to be used as a guide and inspection should not necessarily be limited to the list.*

Attachment 2: Underground Component and Problem Codes

Problem Code reporting for overhead and underground circuits follows the same coding structure and shares the same damage codes.

Each Component and Problem Code now contains ***four*** alphanumeric characters. The first two characters, **alpha,** identify the component; the second two characters, **numeric,** identify the problem condition.

CP_ _	means a primary conductor (CP) is identified as the item.
_ _11	means the item has a clearance problem (11).

Examples of Overhead Problem Codes include the following:

CP11	means conductor-primary (CP) has a clearance problem (11).
CP56	means conductor-primary (CP) has a tree or limb problem (56).
XP56	means crossarm-primary (XP) has a tree or limb problem (56).
GW07	means ground wire (GW) is broken, missing, or worn out (07).

The same four alphanumeric character item-problem structure applies to Underground circuit items and conditions.

SC_ _	means a cable-secondary (SC) is identified as the item.
_ _22	means the item has an excess heat condition (22).

Examples of Underground Problem Codes include the following:

SC22	means a secondary cable (SC) has excess heat damage (22).
EL22	means an elbow-loadbreak (EL) has excess heat damage (22).
GR07	means a ground rod (GR) is broken, missing, or worn out (07).

Note that the last two digits of problem codes are consistent for both Overhead and Underground items. Broken, missing, or worn out (07) is the example used above in both circuits.

The current component and problem code list for overhead or underground resides in Passport, Work Management System. Requests for additions or a current list are available from Central Program Management, Maintenance and Inspection Program.

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Attachment 3: Underground Inspection, SCE Form 14-581

UNDERGROUND INSPECTIONS

Date _____ Work Order ☐ Routine ☐

Inspector _____ Service Center _____

STRUCTURE No. _____ TYPE _____

Crew Size _____ Water Level _____ Oily Water (Y/N) _____ More Pumping Needed? _____

Manhours: Travel _____ Inspection _____ Maintenance _____ Pumping _____

Secure Upon Arrival? _____ Secure Upon Departure? _____ Heat Scan (Y/N) _____

Structure Problems (attach ARR) _____

EQUIPMENT No. 1 _____ PRIORITY : 1, 2, 3, 4, 5

Type _____ Serial No./Line Device _____ Circuit _____

(Please Circle) Corrosion Level: 1 2 3 4 5 Pressure Gauge: Y N Pressure OK: Y N

Oil Level OK: Y N No. of Elbows: _____ 154 _____ 156 _____ YR _____

Equipment Problems (attach ARR) _____

EQUIPMENT No. 2 _____ PRIORITY : 1, 2, 3, 4, 5

Type _____ Serial No./Line Device _____ Circuit _____

(Please Circle) Corrosion Level: 1 2 3 4 5 Pressure Gauge: Y N Pressure OK: Y N

Oil Level OK: Y N No. of Elbows: _____ 154 _____ 156 _____ YR _____

Equipment Problems (attach ARR) _____

EQUIPMENT No. 3 _____ PRIORITY : 1, 2, 3, 4, 5

Type _____ Serial No./Line Device _____ Circuit _____

(Please Circle) Corrosion Level: 1 2 3 4 5 Pressure Gauge: Y N Pressure OK: Y N

Oil Level OK: Y N No. of Elbows: _____ 154 _____ 156 _____ YR _____

Equipment Problems (attach ARR) _____

See Back of Page

Return to Resource Center

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Attachment 4: Work Management System (WMS) Data Sheets *(Sheet 1 of 3)*

Job Aid 0.10 – WCD Description

A PassPort generated number assigned to the work order

PassPort specific category of Work Orders

WORK SUMMARY SHEET

WO#: W	ork Order Type:	District: Switching		Center:	
Circuit Name:		Circuit #:	Substation:		System Voltage:
Universal Grid #:	Estimated MH:	Estimated Cost:		Actual Hours:	
Need Date:	Start Work Date:	Estimated Completion Date:		Actual Completion Date:	
General Description:	OH Facility Inventory Mapping number				
Location (City, Address)					
Special Equipment:					
Significant Material:					
Crew Type:	Truck Type:	Assigned Foreman:	Foreman Initials:	Supervisor Initials:	
Meter Order Required: Y N	Meter Order #:	Meter Ordered Date:		Requires Preset: ☐	
Planner: (Planner/Engineer/Project Manager):		Planning Supervisor Approval:			
Client Name:		Primary Contact Name:			
Phone #1:	Phone #2:	Phone #1:		Phone #2:	

Attachments Required:	Date Attached:	Comments:
1.		
2.		

Coordinator Yes		No			Date
Field Check Required:			Checked by Initials:		
Site Ready to begin Work:			To Prog. Writer (Supv Int)		
W.O. Constructable:			Returned to Planning:		
Switching Procedure Required:			Need date of Switching Procedures:		
No Test Orders:			Faxed to Sub. By:		
Outage Required:			Fr om:	To:	
Yard Management Notified:					
Foreman No Test Orders:			Taken by:	Released by:	
Material Readiness:					
Delayed Start:			Delayed Start Code:		
Crew Affected: ☐ Prefab Affected: ☐			Wait Time:		Date
Unplanned Work Documented:			Supervisor Approval:		
Circuit Map Change:			Map Sent (Supv. Int.)		
Facility Map Change:			Map Sent (Supv. Int.)		
Work Order Completed as Designed: Y N				System Data Entry by:	

List of Tasks — List of tasks in the Work Order.

Task #	Description	Total # of Tasks:	
		Total # of Assets	Total # of Standard Tasks

Attachment 4: Work Management System (WMS) Data Sheets *(Sheet 2 of 3)*

Job Aid 0.10 – WCD Description

TASK SHEET

WO#: T	ask:	Job Type:	Universal Grid:	Priority: (1-5):
Circuit Name:			Circuit #: Substation:	System Voltage:
Need Date:		Scheduled Date:	Start Work Date:	Completed Date:
Task Location D ion:			City:	Thomas Bros. Map:
Task Descripti	Notation of the specific code that describes the failure of the equipment that required repair.			
Task Instructions:				
Work Against:		Assigned Work Lead/Contractor Name:		CWA #:
Task Delayed: Y N		Delay Code:	Major Failure Code:	Major Action:
Comments:				
Total # of Assets:	Estimated MH:	Estimated Cost:	Standard Task Type:	Standard Task MH:

Contain all notes entered in the "Comments" field in

The description of the work task type as defined in PassPort.

This type of characteristic (location, equipment, work item, name) that the work is charged against.

Notation of the specific code that describes the failure of the equipment that required repair.

Notation of the specific code that describes the type of repair that was completed.

The description of the standardized task type used in estimating the work task.

List of Assets Relative to Task:

Pending Work?	Page #	Completion Date	Equip/ Structure #	Equip/ Structure Type	PM Cat. Code	Structure Number	Loc. ID	Location Description:
								1.
								2.
								3.
								4.
								5.
								6.
								7.
								8.
								9.
								10.
								11.
								12.
								13.
								14.
								15.
								16.
								17.

Comments:

The total manhour(s) req'd to complete all Std. Tasks associated with the Work Order Task.

Identify Work Order(s) against the asset.

Write-in Fields

The unique system generated number that references a specific location of the equipment.

Attachment 4: Work Management System (WMS) Data Sheets *(Sheet 3 of 3)*

Job Aid 0.10 – WCD Description

DATA SHEET #1 — Data sheet for non-circuit equipment

WO#:	Task #:	Universal Grid #:	Substation:	
Circuit Name:			Circuit #:	System Voltage:
Location Description:			FIM Map #:	Thomas Bros. #:
				City:
Equipment Type:		Equipment #:	Component Type:	Component #:
Equipment Subtype:		Equipment Name:		Equipment Loc. #:
UTC #:		Manufacturer:	Model #:	Serial #:
Client ID:		Phone #:		

A reference given to identify different equipment families.

A code referencing a breakdown of a specific equipment family.

A reference given to identify different component families.

Operating Factors (Required Inspection Items), Perform Inspections and record results:

Operating Factors	UOM	Normal Reading	Last Recorded Reading	Last Inspection Date	Results
1.					
2.					
3.					
4.					
5.					
6.					
7.					

The unique auto populated number that references a specific Uniquely Tracked Commodity.

The specifications under which the equipment should perform the normal or expected operating condition of the equipment.

Is Equipment Parameter data valid? Yes or No (Note corrections in 'Update' field below):

Equip. Parameters	UOM	Record	Update	Equip. Parameters	UOM	Record	Update
1.				9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

The parameter or attribute information for the piece of equipment (size, owner, etc.)

Pending or Discovered Field Problems Related to Asset: (Open or New W/O, W/Rs)

WO/WR Auth. #	Task #	Description of Repairs Required	Pri (1-5)	Found Comp. Y/N	Est. MH	Prob. Code	Major Failure Code	Major Action
1. Open WO								
2. Open WO								
3. Open WO								
4. New WO								
5. New WO								
6. New WO								
7. New WO								
Comments:								

The Task number on the Work Order.

A PassPort generated number assigned to the work order.

Code of identify actions taken to remedy as found condition.

Notation of the specific code that describes the failure of the equipment that required repair.

Notation of the specific code that describes the type of repair that was completed.

Note: If pending repair(s) will not be fixed, leave these fields blank.

Completed by Initials: _____ Completion Date: _____

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Attachment 5: Work Management System (WMS) Field Work Control Document *(Sheet 1 of 2)*

Field Work Control Document

Mark X in box if Capital Handoff

Trouble Order #	**Work Location #**	Accounting:	
Originator Name: (print full name)			**Date:**
Supervisor Approval: (print full name)		**PAX #:**	**Date:**
Customer:			Phone #
Address /Location Desc:			
City:			Thomas Bros Map:
Circuit Name:	**Circuit #:**		**Substation:**
Structure/Equip. Type:	**Structure #:**		
Line Device #:	Serial #:		

Note Unplanned Work in Section Below :

Priority (1-5)	Problem Code	Org Code	WO-Task#	Man Hours	Elev. Code	Brief Description:

Crew Size:	Truck Access Y / N	Double Bucket Y / N	Property Line Y / N	Outage Required Y / N

Material Required	Quantity/Footage:
Attachments Included:	

1.	2.	3.

Over For Repair Work Completion Details & Sketch

SCE 26-569 REV. 07/02 (CW)

Attachment 5: Work Management System (WMS) Field Work Control Document *(Sheet 2 of 2)*

Field Work Control Document

Note Repairs Made in Section Below:

Repair Completed By:	**Date:**
Major Failure Code:	**Major Action Code:**
Comments:	

Sketch & Comments:

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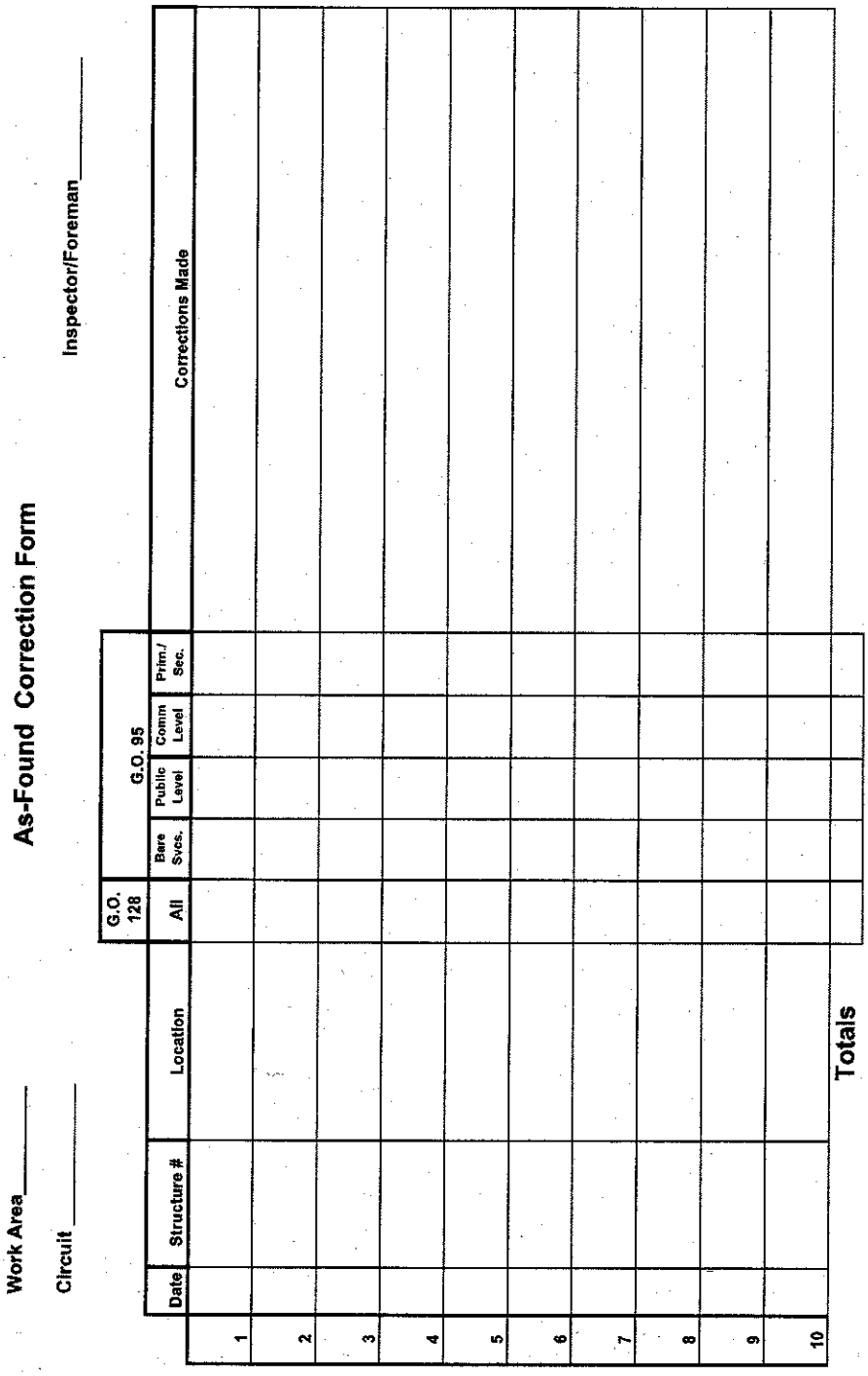
Attachment 6: As-Found Correction Form



Attachment C
Utility Vault Sampling and Analysis Program

1 Introduction

This document summarizes the sampling and analysis program, in support of the Statewide General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Water, for Transmission and Distribution (T&D), Power distribution (PWRD) and Carrier Solutions' structures.
This document describes 1) structures found within SCE's territory; 2) the types of discharges found; and, 3) the sampling site selection and sampling and analysis plan.

2 Discharges Structures Grouping

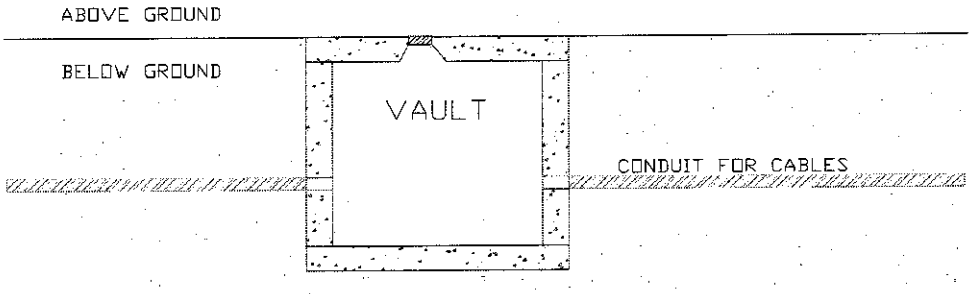
Currently, there are four groups of discharge structures. They are:

- Underground Vaults - Distribution (added to the permit in 1996)
- Underground Vaults - Transmission (added to the permit in 2001)
- Subsurface Cable Trenches - Substations (added to the permit in 1996, tested in 2001)
- Underground Vaults - Carrier Solutions (added to the permit in 2001)
- Underground structures: generator and valve pits from hydro powerhouses throughout the SCE territory.

Group	Equipment	Location / Description
Distribution Vaults	Transformers, Switches, Cables	Located underneath streets throughout the SCE territory. These structures contain either redundant or replacement equipment for above ground structures.
Transmission Vaults	Cables	These structures are located either underneath streets throughout the SCE territory or at substations.
Cable Trenches	Cables	Trenches are located exclusively at substations in and around the equipment leading to the control building. They are rectangular ditches approximately 1-10 feet deep and have removable covers.
Carrier Solution (CS) Vaults	Cables, slack loops, splices	These vaults are located either underneath streets throughout the SCE territory or at substations. Note: Carrier Solutions may also utilize space within Distribution vaults.
Underground structures: generator and valve pits	Water pipe; turbine shutoff valve; turbine power needle; power needle servo motor; deflector linkage	Located within the hydro powerhouses throughout the SCE territory.

	Type	Size (approx.)	# In SCE system
Distribution Vaults	Vault	Various sizes: typical size is 10ft x 10ft x 10ft. Structures are large enough to hold equipment and personnel to work on equipment.	395,000
Transmission Vaults	Vault	Various sizes: typical size is 15ft x 15ft x 15ft	596
Cable Trenches	Trench	Various typical size is 50ft x 3ft x 3ft	N/A
Carrier Solution Vault	Manhole	4 ft x 6 ft x 7 ft	293
	Hand Hole / Pull Box	3 ft x 5 ft x 4 ft	241
	Vaults	6 x 8 x 7	9
	Shared	N/A	Unknown
Generator or valve pits	Underground structures	Various sizes: 4 x 3 x 3 to 12 x 12 x 20. Structures are large enough to hold equipment and personnel to work on equipment.	

CROSS SECTION OF TYPIAL VAULT



3 Pollutants of concern for SCE

Pollutants that may be found in SCE underground structures include:

Pollutant	Source
Mineral oil	Electrical equipment within the underground structure
Suspended solids	Dirt, mud, debris etc. from storm water
TPH Total Petroleum hydrocarbons	Gasoline, diesel, etc. from storm water and/or groundwater intrusion
Asbestos	Cable wrapping within the underground structure
PCB (polychlorinated-biphenyls)	Mineral oil in electrical equipment prior to 1980

4 Types of discharge

All discharges to the street or storm drain will consist mainly of storm water runoff (water that runs over a surface during a rainstorm or snowmelt) or groundwater that may infiltrate the underground structure. As such, the only variation in water quality would depend on the land use above the structure.
Therefore, three types of discharges have been identified:

- Industrial/Commercial
- Residential
- Rural/Agricultural

5 Annual Requirements for Existing Types of Discharge

Annual Reports shall include:

1. Up to five representative samples from each Regional Water Quality Control Board (RWQCB) within SCE service territory.
2. Analysis for Total Petroleum Hydrocarbon (TPH, needs to be reported as TPH-g gasoline and TPH-d Diesel), Total Suspended Solids, Oil and Grease and pH.
3. Written report that includes:
    a. List of the typical types of discharges that occur in the project area.
    b. List of sampling locations
    c. A description of the sampling methods, locations, and frequency of monitoring for each type of discharge
    d. The results of any analysis done for each type of discharge.

The annual report should include a map showing the location of the samples taken. This annual report is due by 20th day of March for the preceding calendar year. Records in support of the NPDES permit should be kept for five years from the date of the sample, observation, measurement, or report.

6 Sampling Location Selection Process

This section describes the process by which underground structures were selected for sampling. Note that care was taken to ensure that the sampling accurately represented normal situations encountered in the field. In each region, the pumps and equipment ordinarily available to the base facility were used in an effort to accurately reflect the typical field situation.

6.1 Distribution Vaults

Vaults are selected based on the following criteria:

1. Location within a California Regional Water Quality Control Board region. SCE's territory falls within seven regions (R3,R4,R5,R6,R7,R8,R9).
2. By the type of area; Variations in storm water collected within the vaults may be due to activities in the surrounding area. Therefore, three types of areas are identified. These types are industrial/commercial, residential and rural/agricultural.

For the annual sampling, the type of area present in each region was identified. Then, one location of each type was selected for testing. Field personnel at service centers and substations assist in the selection process.

Region	Region #	Industrial/ Commercial	Residential	Rural	Total # vaults to be tested in the Region
Central Coast	3	x	x	x	5
Los Angeles	4	x	x		5
Central Valley	5	x	x	x	5
Lahontan	6	x	x	x	5
Colorado River Basin	7	x	x	x	5
Santa Ana	8	x	x		5
San Diego	9	x			5

6.2 Subsurface Cable Trenches

These structures are located on SCE property at the Substations. It is unlikely that storm water from outside the property would flow onto the site and into the cable trenches. Specific locations will be selected based on the size of the substation. The larger substations have more activity onsite and thus the potential for pollutants to reach the cable trench.

6.3 Transmission Vaults and Carrier Solution Vaults

As stated in Section 2, these vaults both contain similar or equivalent types of equipment and are located in similar locations (Carrier Solution Equipment in Distribution Vaults are addressed under Distribution Vaults).
For sampling purposes, the Transmission Vault (TV) and the Carrier Solution Vault (CSV) will be grouped together. Therefore, a sample collected from a TV will be the same as a sample taken from a similar CSV.
For vaults underneath streets throughout SCE territory, the sample should be similar to a sample taken from a Distribution Vaults. However, for TV and CSV vaults found on substation property, the sample should contain less contaminants than the off site vaults.. The samples from substation locations should be similar to cable trench samples.

7 Annual Checklist

The following tasks should be performed each year:

_____ Are there any new categories/groups of discharge structures?
_____ Are there any new types of discharge?
_____ Are the testing methods still applicable?
_____ Perform sampling
_____ Update the Master Map showing previous locations tested
_____ Update the Master List of locations tested
_____ Update the Master List of test results
_____ The current permit is valid until July 19, 2011. Is there anything needed for renewal?

8 Sampling Protocol

This sampling protocol was written to provide guidance when obtaining samples in support of the General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Water. The protocol is written specifically to address the parameters required by the permit.

Preparation for Sampling Event

The following is provided to assist the sampler prepare for the sampling event and should be used for guidance purposes only.

Approximate Time Prior to Sampling Event	Task
Four (4) weeks before	• Select locations to be sampled
Three (3) weeks before	• Coordinate with facility management to allow access for field personnel to underground structures.
Two (2) weeks before	• Make up sampling schedule includes: where, when, number and types of sampling bottles, coolers needed. • Coordinate with lab for delivery and pickup

Less than one (1) week before	• Label bottles • Complete as much paperwork as possible to save time in the field • Gathering the following equipment and supplies: o Bottles o Cooler o Plastic zip lock bags (gallon size to hold ice) o Ice o Disposable, powder-less gloves o Sampling stainless steel bucket o Sampling stainless steel beaker o Chain-of-Custody forms from Lab o Pen – waterproof ink o Rinse water
Day before sampling	• Call lab to schedule pick up
Day of sampling	• Obtain ice • Obtain sample • Fill in Field log sheet • Complete labels on bottles • Complete Chain-of-custody

After sampling event

After all the sampling is complete, the following should be done:

- Obtain results from lab
- Write report
- Submit report to T&D Environmental Management
- Submit report to Environmental Affairs (EA)
- Review practices and modify as needed for next years sampling event.

Obtaining Samples

Here are some guidelines for sample collection:

- If collecting the sample from the discharge end of a pump, let the pump run long enough to purge any residual matter in the pump and line.
- Avoid touching the inside of the sampling container to prevent contamination.
- Some sample bottles may contain preservatives; check with laboratory to find out which parameters require bottles with preservative and ensure that the laboratory will provide those bottles. Also, extreme care should be taken when filling sample bottles to avoid spills, splatters or washout of the preservatives.
- Clean equipment between samples with de-ionized or distilled water.
- Oil & Grease (O&G) tends to adhere to the surfaces that it contacts. Therefore, it should not be transferred from one container to another; rather, a 1-liter container should be used to take the sample. Alternatively, a stainless steel container may be used to collect the sample and transfer it to the sample bottle. A Teflon insert should be included in the glass container's lid.

Parameters

These are the parameters required by the NPDES permit. The analytical methodology should be validated by the contracted lab.

Parameter	Analytical Method	Volume & Container	Preservation	Holding Time
Oil & Grease	413.1 or 413.2	1L Glass - amber	Cool to 4°C, HCl or H_2SO_4 to pH<2	28 days
TPH(TPH-d)	8015 DRO	1L Glass - amber	Cool to 4°C	7 days
TPH(TPH-g)	8015 GRO*	(3) 40 ml vials, VOA-glass	Cool to 4°C, HCl no HS	28 days
pH	150.1, 9045C	500 ml, poly or glass	None	immediately
TSS	160.2, SM2540	500 ml, poly or glass	Cool to 4°C	7 days

* The sample may be tested with method 8015 GRO, in addition to 8015 DRO, if gasoline (or volatile organics) is suspected.

Chain of Custody

Information should be submitted to the laboratory with the sample to ensure proper handling by the laboratory. Information should include:

- Unique sample or log number
- Date and time of sample collection
- Source of sample including facility name and address
- Name of sampling personnel
- Sample type (grab)
- Preservation Used
- Analysis Required
- Date, Time and Documentation of Sample Shipment
- Comments

This information may be included on the Chain of Custody form.
The "Chain of Custody" refers to the documented account of changes in possession that occur for a particular sample or set of samples. The chain-of-custody record allows an accurate step-by-step re-creation of the sampling path, from origin through analysis.

Sample Identification and Labeling

Prior to the collection of the sample, a waterproof, gummed sample identification label or tag should be attached to the sample container. The label should contain relevant information for sample analysis, such as:

- Facility name

- Name of the sample collector
- Sample identification number
- Date and Time of sample collection
- Type of analysis required
- Location of sample collection
- Preservatives used
- Type of sample (grab)

Sample Packing and Shipping

Glass bottles should be wrapped in foam rubber, plastic bubble wrap or other material to prevent breakage during shipment. Samples should be place in ice or a synthetic ice substitute that will maintain the sample temperature at 4°C throughout shipment. Ice should be place in double-wrapped water-tight bags so the water will not leak from the shipping case. Sampling records can be placed in a waterproof envelope and taped to the inside of the cooler.

Attachment D:
Transmission Line Routine Patrol, Inspection, Scheduling and Record Keeping, Division Order 40.35, pages 1 to 6

TRANSMISSION LINE ROUTINE PATROL, INSPECTION, SCHEDULING AND RECORD KEEPING

GENERAL

Transmission patrol crews are responsible for verifying that the transmission overhead and underground lines on the Edison system are maintained in a professional manner, and that all components of those lines meet the many requirements imposed by the federal, state, and local governmental agencies, as well as stringent Edison standards.

This Order is intended to standardize patrol methods, patrol scheduling and patrol record keeping throughout the Transmission/Substation Division.

GUIDELINES

Each division shall establish a practical schedule of patrol and inspection for transmission lines. This schedule, upon approval by the Manager of Transmission, will become part of this Order.

Each Senior Patrolman will establish a patrol schedule based on the frequency established by the respective Superintendent of the field division. This routine patrol schedule will be entered into the P.C. based Patrol Logbook Program by January 1 of each year.

RECORD KEEPING

In order to document the finding of routine patrols, as well as any other incidental patrol observation, right-of-way surveillance or transmission line maintenance, Senior Patrolman will enter all data into the P.C. based Patrol Logbook Program.

Each Patrol Area will maintain the following records within the P.C. Patrol Logbook Program:

1. Action/Trouble Items
2. Trouble Reports
3. Routine Patrol Schedule
4. Wash Schedule
5. General Comments
6. Encroachments
7. Raptor Mortality
8. Raptor Nesting

The daily logs shall reflect the activities of that patrol day, giving a brief description of work done, accurate geographic location, and other pertinent data. The daily logs will be so detailed that others reading them will understand what took place hat work day.

Patrol crews shall review the guidelines for Transmission Line Patrols (Attachment C) as often as necessary to achieve proficiency in patrol skills, Each Senior Patrolman shall be responsible for the proper training in patrolling methods of the regular members of his/her patrol crew.

Patrol Schedule of Transmission Circuits and Rights-of-Way

The following schedule will be maintained in the patrolling and inspecting of transmission circuits in the Transmission/Substation Division.

Voltage	Patrol Frequency
33, 55, 66 and 115 kV Overhead Underground	365 Days
161,220 and 500 kV Overhead Underground	365 Days
Idle Circuits, Communications Circuits, Loaned transmission circuits on right-of-way and energized at distribution voltage	365 Days

Many areas require checking and patrolling more often than the above schedule indicates. In areas where unusual gunshot activity, pollution, trees, encroachments, or other hazards are known, the patrolman will, when approved by his/her Supervisor, patrol more frequently.

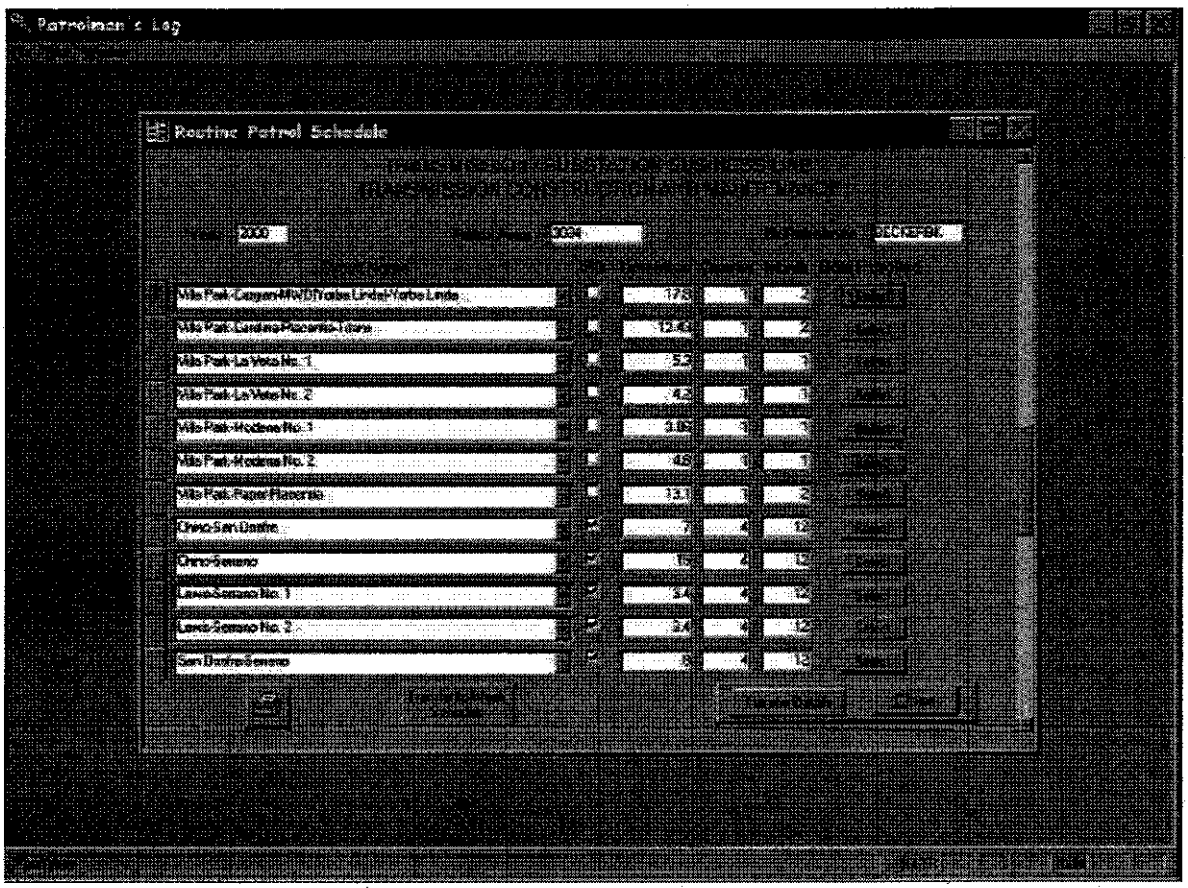
Close patrols made to locations flashovers and causes for relay operations will be considered as routine patrols and are to be recorded as such on the routine patrol schedule. Skyline patrols made to determine if a circuit is safe to energize will not be sufficient to qualify for a routine patrol. All patrolling is to be noted on daily logs. All completed routine patrols must be entered in the P.C. based Patrol Logbook Program. The daily log is to show the limits of that day's patrol (i.e., along Central Avenue between 3rd and 24th Streets).

Circuits and rights-of-way shall be inspected during washing operations by all crews washing. This will include such items as conditions of towers, poles, arms, insulators, tree clearance encroachments, soil erosion, construction by other departments or utilities, new buildings, bridges, highways, fences, and the many other items that affect the operation of transmission circuits.

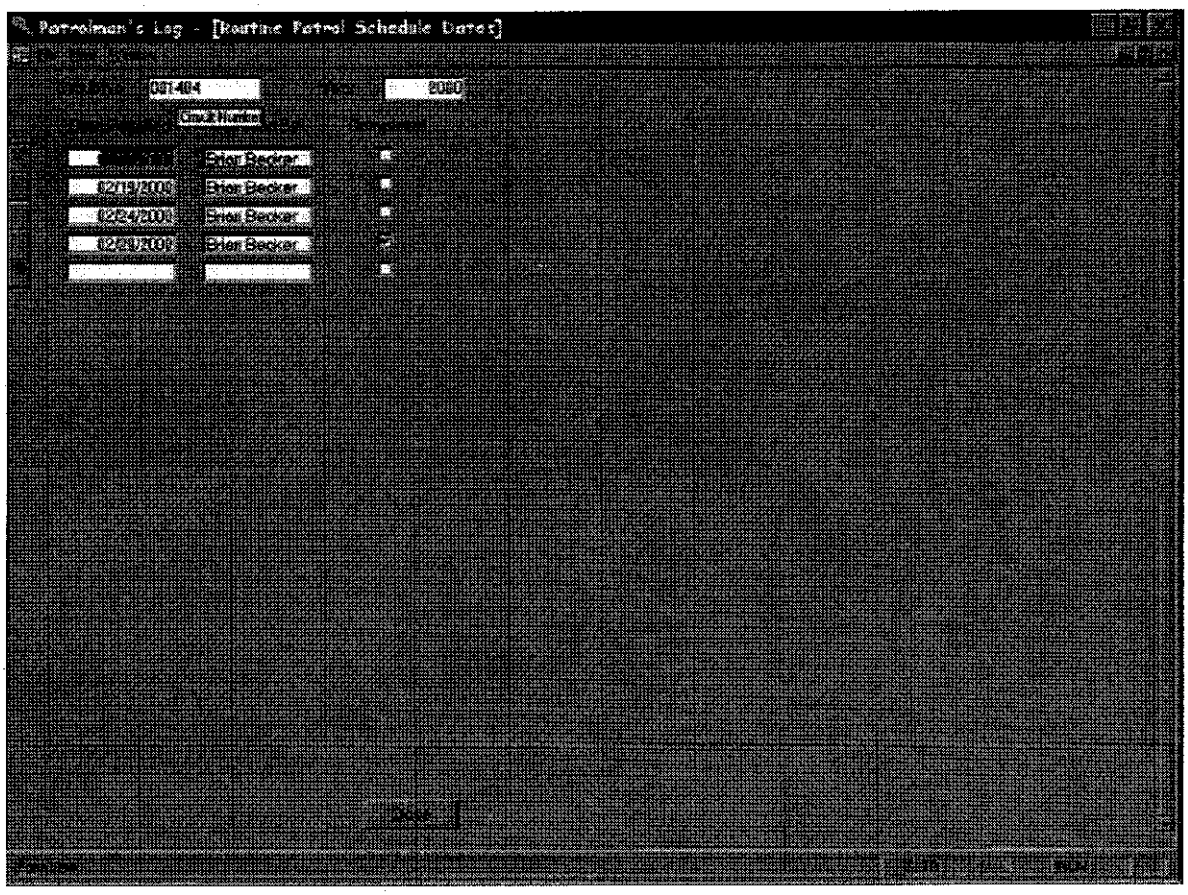
Each Senior Patrolman will make a yearly patrol schedule by January 1 for the coming year. This schedule will be a guide for planning routine patrols and will be maintained by the Patrolman for the lines in his/her designated patrol area. Routine patrol reports are to be forwarded to the Division Superintendent following each patrol. A copy of the format to be used for the routine schedule is attached to Division Order 40.35 (Attachments A & B).

Recommendations for maintenance work for the coming year are to be submitted to the Region Office prior to March and will most often require substantiation (i.e., butt testing, meggering, etc.).

Attachment A



Attachment B



Attachment C

ROUTINE PATROL CHECKLIST

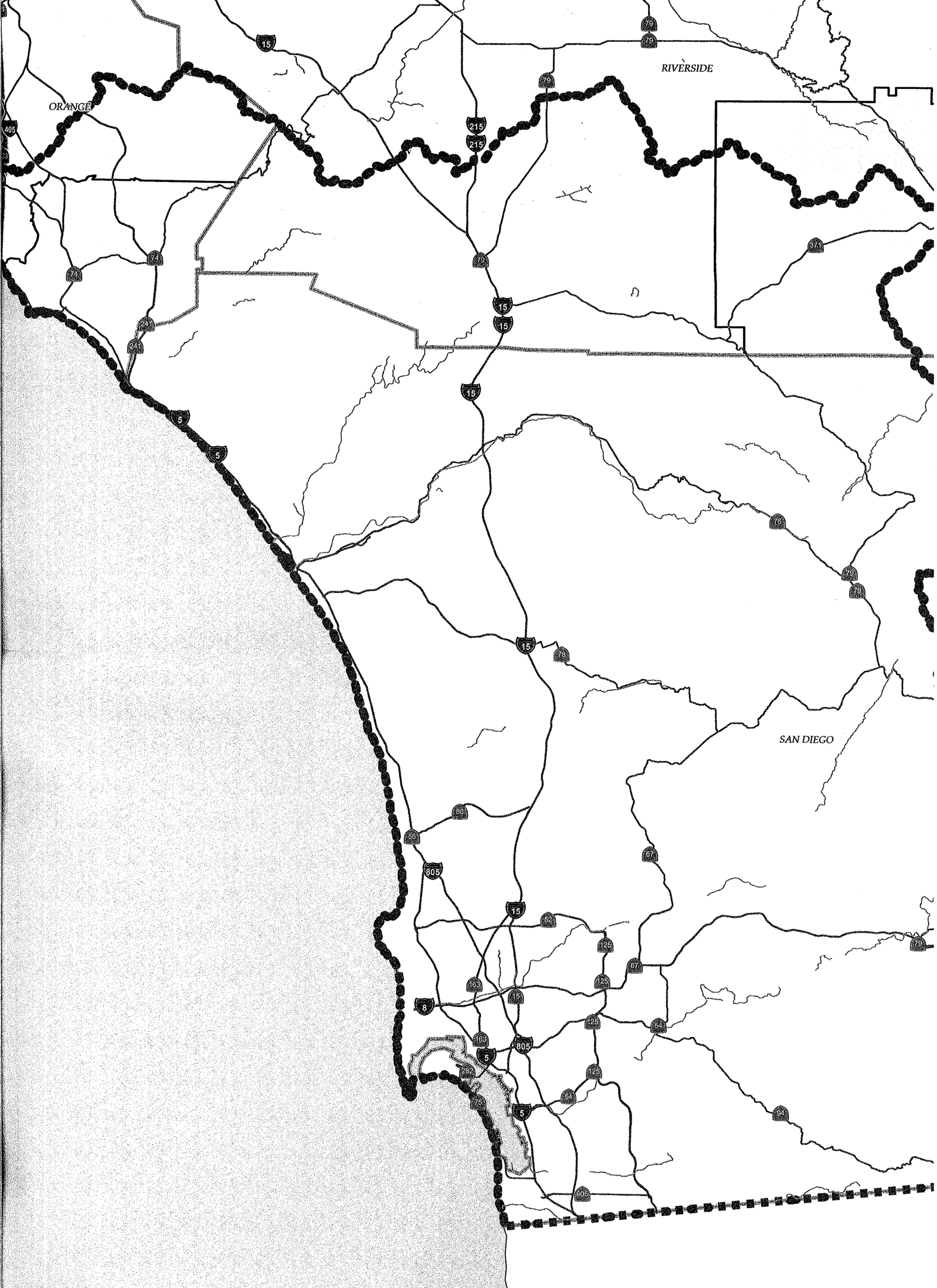
1. Check each structure, top to bottom for:
   a. Condition of arms and high voltage signs
   b. Condition of birdguards
   c. Condition of poles and crossarm bonds and covers
   d. Condition of distribution facilities on structures
   e. Base of pole or tower footings
   f. Danger signs and barbed wire barrier on towers
   g. That pole steps are correct and TSP steps comply with specifications
   h. Visibility strips
2. Check for condition of insulators for:
   a. Broken and shot
   b. Contamination
   c. Loose insulator bonds
   d. Old or new flashovers
   e. Cotter keys in wind or vibration problem areas
3. Check guys for:
   a. Breakers in correct places; G.O. 95 compliance
   b. Clearances from conductors and jumper loops
   c. Clearances through distribution circuits
   d. Possibility of conductors or jumper loops swinging into guy during wind or washing
   e. Anchor rod eyes are 6" out of ground
   f. Guy covers on and correct
   g. Rust conditions of guys and fittings
   h. Attachment at poles are tight, etc.
4. Check conductors for:
   a. Abnormal sag
   b. Damage from gunshot or other causes
   c. Jumper loop connections look good. Should they be spliced solid to comply with Forestry regulations or division requirements
   d. Clearances from ground or grounded objects
5. Check surrounding area for natural conditions:
   a. Trees -- establish clearances needed and make comparisons on the pole or tower to judge clearances (i.e., 66 kV string of insulators about 30", 220 kV strings about 6- 7', etc.)
   b. Brush and potential fire hazard to lines
   c. Water or wind erosion near structures, anchors, etc. Slides or wind-caused dirt or
   d. sand piled over tower footings or above treatment line on poles
6. Check construction or activities that affect the line:
   a. Houses or structures under lines or on right-of-way
   b. New roads or pipeline construction near or approaching rights of way
   c. Excavations under lines, on right of way, or near structures
   d. Indications that work is planned by others near the right-of-way (survey stakes, equipment parked nearby, etc.)
   e. Investigate housing tracts near lines
   f. Investigate highway or street construction work that may encroach on or cross rights-of-way
   g. Take note of activities that cause dust or smoke contamination to insulators (crop dusting, harvesting, or planting of crops, fires near lines, industrial plants, etc.)

7. Check access roads for:
   a. Water or wind erosion, rocks or slides which cut off use of roads
   b. Trees that intrude on the traveled way
   c. Overhanging brush
   d. Farm or ranch roads that cut off access
   f. Gates locked and in good condition
   g. Culverts or overside drains are clear of weeds and debris
   h. Grass, weeds, or other combustible material causing a fire hazard on the road

UNDERGROUND LINES

8. Check terminations for:
   a. Cracks and chips in the porcelain
   b. Cable jacketing for deterioration
   c. Leaking oil
   d. Loose electrical connection
   e. Any indication of flashover
9. Check riser poles (wood and steel) for:
   a. Cable slippage
   b. Cable support grip deterioration
   c. P.V.C. riser damage or deterioration
   d. Loose pole hardware
10. Check surge arresters for:
   a. Cracks or chips in the porcelain
   b. Indication of flashover or burning around the exhaust ports
   c. Loose electrical connections
11. Check vaults for:
   a. Water
   b. Cable supports for corrosion or deterioration
   c. Cable movement either into or out of vault (record all movement)
12. Check splices for:
   a. Deterioration of arc proofing tape
   b. Splitting or deterioration of jacketing tape
   c. Splitting or deterioration of insulating tape
   d. Cable clamps for deterioration
   e. Loose bond connections
13. Complete the patrol by:
   a. Making notes of problems found in the patrol record book
   b. Entering date of line section patrolled in patrol record book on routine patrol schedule
   c. Making plans to repair those items that were not fixed during the patrol, including a planning discussion with the patrol supervisor, programming lines, accumulating material, etc.
   d. Making note of the dates in the patrol record book after repairs are completed.

Attachment E
Maps of SCE territory, RWQCB and Watersheds



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SCE Service Territory with Regional Water Quality Control Board Boundary San Diego Region (9)

0 2.5 5 10 15 20 Miles