

Sylmar Ground Return System

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- This DC transmission has two poles and operates at one million volts or 1000 KV
- The system extends 2 miles offshore out into Santa Monica Bay
- The primary power cables tie into a large area electrode array that consists of 144 electrodes distributed through 36 large concrete vaults



**36 VAULTS
25 TONS EACH**

Project Details :

The Sylmar Ground Return System or (SGRS) is a vital part of the Pacific Direct Current Intertie also referred to as (PDCI).

The PDCI is a bi-directional direct current transmission system that connects the Pacific Northwest to the Southern California region. The capacity of PDCI is 3200 Megawatts which is enough electrical energy to supply about 2 million homes in our area.

The power is produced by hydro, wind, and solar generation all from renewable energy sources. This DC transmission has two poles and operates at one million volts or 1000 KV. At times the Pacific Ocean acts as one of the poles for the PDCI circuit, and during these times the entire energy has to be discharged through the SGRS, which is located offshore in Santa Monica Bay. The SGRS also acts as a safety device protecting the

PDCI from energy surges that can be caused from lightning strikes or electrical equipment failure.

The SGRS is comprised of two primary cables that are tied into the PDCI at the Los Angeles Department of Water and Power Sylmar converting station facility. These cables run from Sylmar about 28 miles on overhead lines and 9 miles underground to Pacific Palisades. The system then extends 2 miles offshore out into Santa Monica Bay. At that point, the primary power cables tie into a large area electrode array that consists of 144 electrodes distributed through 36 large concrete vaults. The design of the array is such that it distributes the electrical discharge over a large area making it safe for marine life divers and the nearby infrastructures.

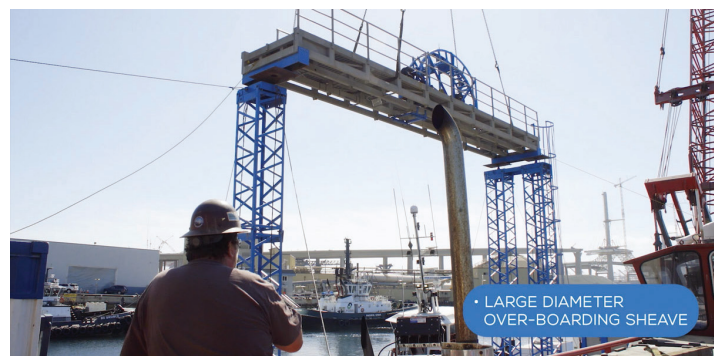
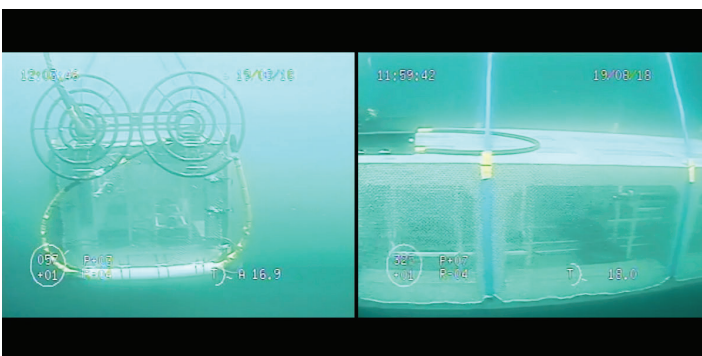
Sylmar Ground Return System



• 4 ELECTRODES IN EACH VAULT
• 315 lbs. each



• 144 ELECTRODES IN TOTAL



• LARGE DIAMETER OVER-BOARDING SHEAVE