PORT OF LOS ANGELES

High Voltage Shore Connection (HVSC) Systems

Guidelines

The terms, Alternative Maritime Power (AMP), High Voltage Shore Connection (HVSC) Systems and shore power, used in this and other documentation refers to the technology of providing ships with electricity provided from the shore side.

I. HVSC System - Basic Shore Specifications – Container Ships

The landside HVSC system constructed at the Port of Los Angeles (Port) complies with the specifications of the IEC/ISO/IEEE 80005-1 international standard.

- Shore-side power supply: 6,600 volts (6.6 kV) 3 phase power
- Frequency: 60 Hz
- Each shore side AMP-HVSC vault has two outlets
- Plugs and socket-outlets are in accordance to IEC 62613-1 and IEC 62613-2
- Electrical rating for the plugs and socket-outlets
    - Nominal voltage: 6.6 kV
    - 3 phase, A-B-C counterclockwise rotation according to the international standard
    - Socket-outlet rated shore circuit current: 16 kA / 1 s
    - Current rating of each socket-outlet: 320 amperes
    - Socket-outlet voltage rating: 7.2 kV

II. Ordering of HVSC Services

Effective January 1, 2014 HVSC service needs to be ordered with the Port no less than 72-hours prior to the ship arrival. The completed "HVSC E-Mail Template" needs to be e-mailed by the authorized shipping line representative to:

AMP@portla.org

This e-mail will be routed to the appropriate parties within the Port.

III. HVSC Ship Call

On the day and time a ship will be connected or disconnected to/from shore power HVSC Power Transfer Conference will take place between the ship's Person in Charge (PIC) and the Port PIC. The "HVSC Power Transfer Conference" check-list will be completed and signed by the Ship PIC and Port PIC.

For reference, the Port's internal HVSC Connection and Disconnection processes are attached in this e-mail.

IV. AMP Cost Indication

Electrical Rates

Electrical power is provided by the Los Angeles Department of Water and Power (LADWP). For reference, electrical rates are published on the LADWP website:

www.ladwp.com

Enter "AMP" in the search field.

LADWP power consumption invoices are sent to the Port and re-invoiced to the terminal tenant where ships used shore power.

The Port does "not" add a service charge onto the LADWP invoice, according to the Port of Los Angeles Tariff No. 4.

The Port invoice will contain the following:

- LADWP invoice amount
- Individual ship power consumption, for reference
- The Port labor cost by ship, for reference (after Q1, 2014)

Note:

It is important to know that:

- The total of all ships' electrical power consumption may not match the total electrical power consumption as noted on the LADWP invoice. The difference is generally represents the landside HVSC system consumption and LADWP service fees.

- Ships on shore power may span two LADWP billing periods.

- Even when no ship connects to shore power during an LADWP billing period, LADWP will generate an invoice that covers landside HVSC system power consumption and service charges. Those invoices are also re-invoiced to the container terminal tenant by the Port.

V. HVSC Port Contact Information

Primary contact	Technical	Regulatory and Environmental
Eric Caris Assistant Director Business Development e-mail: ecaris@portla.org Phone: (310)732-3844 Cell Phone: (310)977-7655	**Vahik Haddadian, P.E.** Sr. Bldg. Electrical Engineer e-mail: vhaddadian@portla.org Phone: (310) 732-3647	**Carter Atkins** Environmental Specialist e-mail: catkins@portla.org Phone: (310) 732-7649