

PILOTAGE ADVISORY COMMITTEE

Tidal Current Study for HEC Lamma Jetty and Navigation Channel

Purpose

1. This paper is to brief Members of PAC on the background and detailed proposal for the captioned tidal current study undertaken by The Hongkong Electric Co., Ltd. and assisted by the EEI Marine Consultant Limited. The result of the tidal current study will be used for reviewing the berthing guidelines of Lamma jetty.

Background

2. Lamma Power Station of The Hongkong Electric Co., Ltd. (HEC) is the power plant for the supply of electricity to Hong Kong and Lamma Islands. Coal is the main fuel for the power plant and is supplied to Lamma Power Station by ocean-going vessels. The present Lamma jetty installation includes a dredged approach channel and 2 jetty decks to accommodate two coal carriers with the size up to 100,000 deadweight tones simultaneously.

Present Berthing Guidelines Conditions

3. The present berthing guidelines (BGL) restricts the berthing operations to Lamma jetty in a narrow time window in terms of time of High Water or Low Water summarized below:-

- 11.5m vessel draft > 9.5m or LOA > 153m HW – 0.5hr. to LW – 1hr.
- 14.6m vessel draft > 11.5m and LOA > 250m HW – 0.5hr. to HW + 0.5hr.

Reasons for BGL Revision

4. The present BGL is based on a tidal stream atlas for the approach channel which was prepared in 1982 using tracking of pole logships. In addition to the errors associated with such a low tech method, with the recent completion of the 22 hectares reclaimed platform of Lamma Power Station Extension located about 150m east of Lamma jetty, the tidal current characteristics around Lamma jetty may have also changed.

5. More important is that with the ever-increasing coal demand to Lamma Power Station and in view of the increasing stringent coal supply situation in the world market, HEC would like to widen the present berthing window in order to improve the jetty operation efficiency as well as the coal throughput.

6. To put forward a proposal for reviewing the BGL, HEC has consulted Hong Kong Pilots Association who suggested that a tidal current study should be conducted to investigate the tidal regime of Lamma navigation channel to facilitate pilotage.

Proposal for Tidal Current Study

7. A tidal current study using Acoustic Doppler Current Meter/Profiler (ADCP) is proposed in order to understand the present tidal characteristics around Lamma jetty and for subsequent review of BGL. One horizontal and one vertical ADCP are proposed to be installed at the northern and southern ends of Lamma jetty respectively for continuously recording the horizontal and vertical profiles of tidal current flow direction and speed in the vicinity.

8. It is proposed that the data collection and analysis should be started in January 2005 to cover a 6 months period including the seasonal variation in April and extreme peak flow in June. The study result and review of BGL will be followed up by the PAC Working Group formed for such purpose.

Presentation

9. This paper will be presented by a representative of HEC.