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Lamma Power Station Navigation Channel Improvement
南丫發電廠航道改善工程

Project Profile
工程項目簡介

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Projects Division

The Hongkong Electric Co., Ltd.

香港電燈有限公司

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1. BASIC INFORMATION

- Project Title : Lamma Power Station Navigation Channel Improvement
- Purpose and Nature : To provide a safe and adequate water depth at the existing Lamma Power Station Navigation Channel. The construction includes dredging of marine sediment at an existing navigation channel.
- Name of Project Proponent : The Hongkong Electric Co., Ltd.
- Location of Project : The location of the Site is at the western side of Lamma Island . (please refer to Appendix 1).
- History of Site : The Site is the existing Lamma Power Station Navigation Channel (the “Channel”) which was first dredged to –15.9 mPD (about) in 1981. Improvement to the Channel by means of dredging down to about – 16.5 mPD level was carried out in 1989-1990. To cope with the updated vessel operation, the turning basin of the Channel was enlarged by extending 250m southward in early 2001.
- Number and types of Designated Projects covered : The Project Profile covers one designated project related to a dredging operation exceeding 0.5 million cubic metres.

2. PLANNING AND IMPLEMENTATION PROGRAMME

2.1 Planning & Implementation

The project is planned and implemented by the Projects Division of The Hongkong Electric Co., Ltd. The environmental consultant is Hyder Consulting Limited and the Contractor for the dredging works will be appointed later.

2.2 Project Programme

The tentative project time table is outlined below for reference:-

	Task	Date
1	Appointment of Environmental Consultant	May 2001
2	EIAO Procedures	June 2001 – June 2002
3	Design	July 2001 – June 2002
4	Construction	July 2002 - December 2002

2.3 Interaction with Other Projects

The construction of Lamma Power Station Extension (LMX) project is in progress and the marine portion of the reclamation works will be substantially completed by mid 2002. The navigation channel dredging is planned to commence afterwards hence there is no interaction with LMX project.

3. POSSIBLE IMPACT ON ENVIRONMENT

3.1 Outline of Processes

The construction involves dredging of marine sediment within the existing Channel and disposal of dredged sediment. Trailing suction hopper dredger and/or grab dredgers, depending on the resources available by the Contractor, will be adopted for the dredging works. The estimated dredging volume is 2.98 million cubic metres (measured in-situ). The dredged sediment will be transported by marine vessels and is expected to be disposed at Government approved mud disposal sites.

3.2 Associated Environmental Impacts

Similar dredging operations at the existing Channel have been carried out before. Based on previous experience, the potential environmental impacts due to this project are limited to water quality, generation of waste and noise at construction phase only.

There is no potential environmental impact which may arise from the operation phase of the project after the dredging operation is completed.

3.2.1 Water Quality

Loss of fine marine sediment to water during the dredging operation and disposal of sediment. Thus the possible impacts to water are on suspended solids (SS), Turbidity and DO only.

3.2.2 Generation of Waste

Generation of 2.98 million cubic metres (about) dredged sediment. The dredged sediment will be disposed at Government approved mud disposal sites.

3.2.3 Noise

Generation of noise from marine plant during the course of dredging operation.

4 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

4.1 Sensitive Receivers

The potential noise sensitive receivers are those residential areas close to the Site which include the villages at Yung Shue Wan “SR1” and Hung Shing Ye “SR2”.

The potential water quality sensitive receivers include the water intakes at existing Lamma Power Station “SR3” and gazetted beaches including Hung Shing Ye Beach “SR4” and Lo So Shing Beach ”SR5” along the south-west shore of Lamma Island.

The locations of the potential noise sensitive receivers and water quality sensitive receivers are shown in Appendix 2.

4.2 Major Elements of the Surrounding Environment which might affect the area of the Project to be Located

The major elements surrounding the Site is the existing Lamma Power Station, the work site of Lamma Power Station Extension and the West Lamma Channel. As the project is to carry out dredging within an existing navigation channel, the surrounding environment will not affect the area where the project is located.

5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED IN THE DESIGN AND ANY FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Measures to Minimise Environmental Impacts

5.1.1 Water Quality

An Environmental Monitoring & Audit (EM&A) programme for water quality in the vicinity of the dredging area will be established to provide systematic procedures for the monitoring and auditing of potential environmental impacts that may arise from the dredging operation. The following mitigation measures will be implemented, if needed:-

- Where trailing suction hopper dredgers are in use for dredging of marine mud, overflow from the dredger is prohibited and the Lean Mixture Overboard system shall only be permitted to facilitate manoeuvring immediately before and immediately after dredging when predominantly water is passing through the system, but it is prohibited during dredging when the drag head is on the seabed and mud is passing through the system.
- Dredger grabs shall be tightly closed to minimise loss of sediment during the raising of loaded grab through the water column.
- The descent speed of grab shall be controlled to minimise the seabed impact speed and to reduce the volume of over dredging.
- Barges shall be loaded carefully to avoid splashing of dredged sediment.
- Barges used for the transport of dredged materials shall be fitted with tight bottom seals in order to prevent leakage of material during loading and transportation.
- Barges shall be filled to an appropriate level to avoid spill over of dredged sediment during loading and transportation.
- Dredging rate shall be carefully controlled such that water quality at sensitive receivers is within acceptable limits.
- Silt curtain cage around dredger grab shall be provided to minimise spreading of SS.

5.1.2 Generation of Waste

The class of contamination of marine sediment to be dredged will be determined in accordance with Practice Note for Authorised Persons and Registered Structural Engineers No. 252 or other methodology as approved by EPD. However, in view of recent marine sediment testing results for projects (i) Lamma Power Station Extension in 1998; (ii) Turning Basin of Navigation Channel in 1997; and (iii) Navigation Channel in 1995, the marine sediment at the Channel are very likely to be uncontaminated. Disposal of dredged sediment will follow the conditions stipulated in the "Allocation of Mud Disposal Sites" issued by Marine Fill Committee and "Marine Dumping Permit" issued by EPD.

The trailing hopper dredger or dumping barges will provide on-site storage area. Therefore, no off-site storage area is required.

5.1.3 Noise

No particular mitigation measure is required other than the number of dredgers/tug boats working simultaneously. This would be covered by Construction Noise Permit. Periodic check on noise level will be carried out to ensure compliance with Government regulations. Dredging will also be carried out at night-time. The Contractor will apply for "Construction Noise Permit" under Noise Control Ordinance. All Government regulations on noise restriction will be complied with.

5.2 Possible Severity, Distribution and Duration of Environmental Effects

With proper implementation of the mitigation measures and environmental monitoring & auditing programme stated in Section 5.1 above, no unacceptable environmental impact is anticipated.

5.3 Additional Relevant Information

Construction of the Lamma Power Station Jetty was carried out in 1979/1981. Initial Channel dredging was undertaken in 1981 removing 6.0 million cubic metres (about) marine sediment. Subsequent Channel improvement was undertaken in 1989/90 during which 1.5 million cubic metres (about) marine sediment was removed. All the dredged sediments were disposed at the designated South Cheung Chau disposal area.

An extension of Lamma Power Station Jetty was constructed in 1998/2000. The existing turning basin of the Channel was enlarged by extending 250m southward in early 2001. About 0.48 million cubic metres of marine sediment was dredged and disposed at the designated South Cheung Chau disposal area.

6 USE OF PREVIOUSLY APPROVED EIA REPORT

No EIA report was required for the projects mentioned in Section 5.3 above. However, a Project Profile titled “Project Profile for Jetty Extension” related to the dredging operation for the enlargement of the turning basin of the Channel was submitted to EPD on 27 August 1997. In EPD’s letter ref. (38) in Annex (2) to EP2/N9/17 dated 19 December 1997, it was pointed out that:

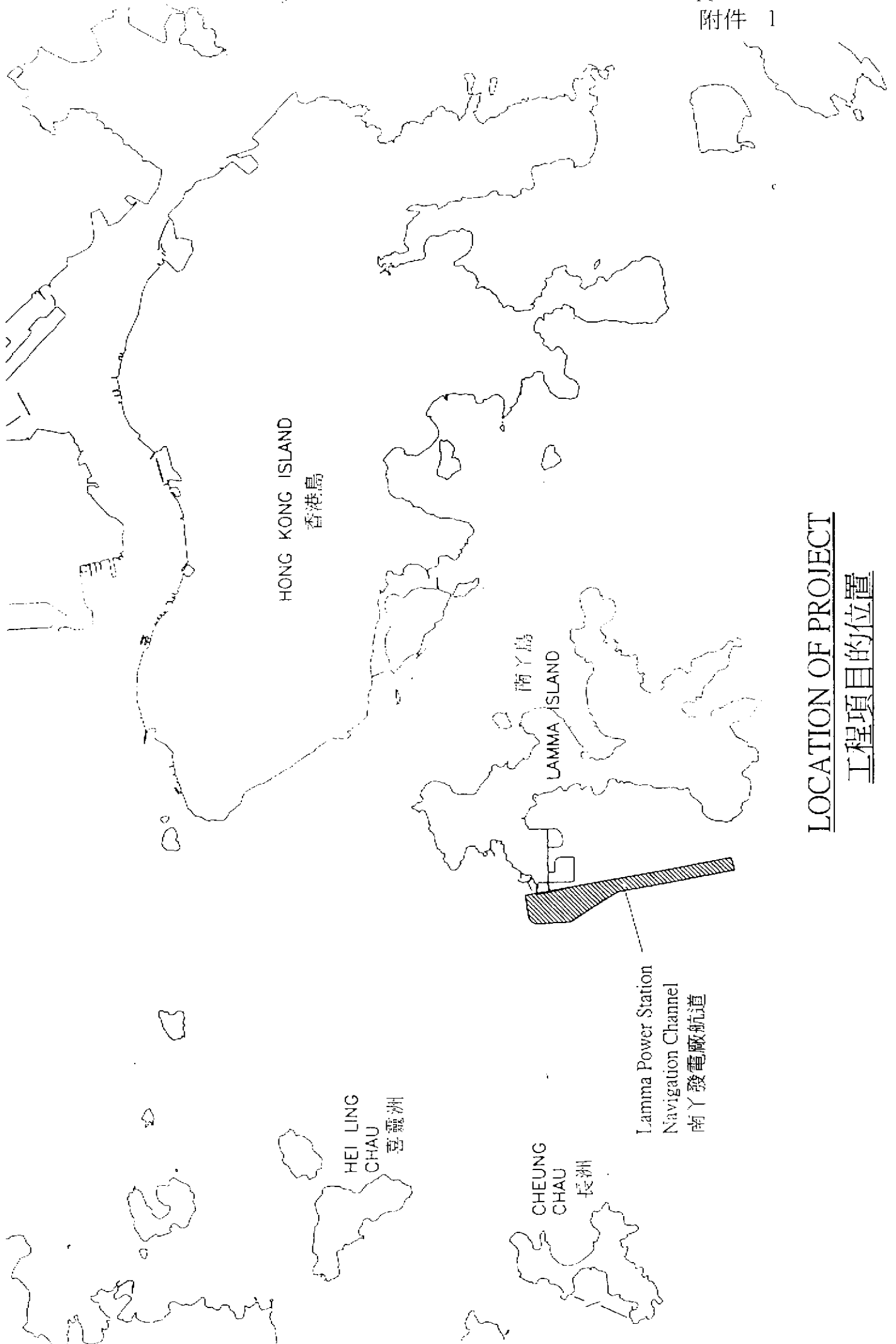
- (i) the project has a limited potential for environmental problems and Environmental Impact Assessment is not required for the project;
- (ii) suitable mitigation measures should be implemented with an environmental monitoring and audit (EM&A) programme.

A “Lamma Power Station Environmental Monitoring and Audit Manual for Jetty Extension Construction” was submitted to EPD on 15 March 1999 which was subsequently approved by EPD via letter ref. (62) Ax(2) to EP2/N9/17 dated 1 April 1999.

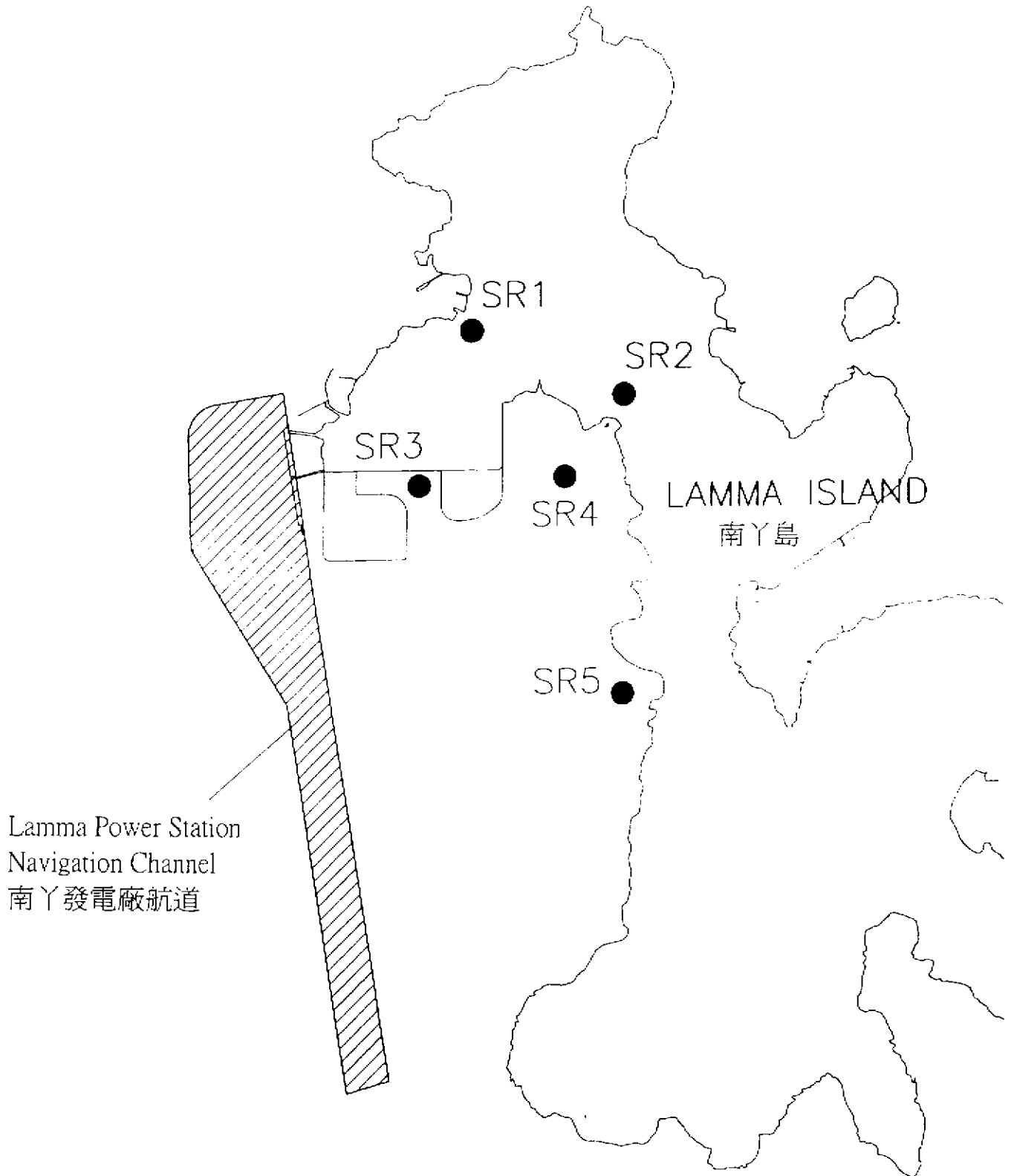
The nature of work of this project is same as that mentioned in the above paragraph. . By careful implementation of the mitigation measures addressed in Section 5.1 above, no unacceptable environmental impact is anticipated. The West Lamma Navigation Channel dredging has been carried out before and no insurmountable environmental issue has been encountered previously.

In view of the foregoing, we suggest to follow similar monitoring procedures & event/action plans outlined in the EM&A manual for Jetty Extension for this project.

END



LOCATION OF PROJECT
工程項目的位置



Lamma Power Station
Navigation Channel
南丫發電廠航道

LOCATIONS OF SENSITIVE RECEIVERS

可能成為敏感地點的位置