ADVISORY COUNCIL ON THE ENVIRONMENT
ACE
環境問題諮詢委員會

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for information

New Management Framework for Dredged Sediments

Purpose

The purpose of this paper is to inform Members of the new management framework for dredged sediments.

Background

2. The existing sediment classification system adopts chemical screening of seven metals as the basis of classifying sediments. Sediments which pass the chemical screening criteria are deemed suitable for open sea disposal, while those sediments which fail the criteria have to be disposed of at the confined disposal sites of East Sha Chau.

3. In 1995, the Eighteenth Consultative Meeting of the Contracting Parties to the London Convention agreed to adopt a more detailed framework for assessing the dredged material intended for marine disposal, and this is now reflected in the new 1996 protocol to the London Convention. The People's Republic of China is a Contracting Party to the London Convention, and hence Hong Kong has an international obligation to follow the spirit of the Convention.

4. The new protocol specifically requires that:

4.1 biological effects be considered as part of the sediment assessment framework to identify materials of potential biological concern,

4.2 alternative management options be considered where the characteristics of the material are such that marine disposal would exert harmful biological effects.

5. At the ACE meeting on 27 May 1996, Members were informed that EVS Environment Consultants of Canada were commissioned to review the sediment classification system. The consultants observed that the existing system did not cover all contaminants of concern, and the chemical screening procedure did not take due account of the biological effects of the sediment and was an indirect method to gauge their potential harmful effects.

6. At the ACE meeting on 25 November 1996, Members noted the Administration's intention to develop a new sediment management framework in light of the review findings of the consultants. The consultants recommended the framework be enhanced:

6.1 to broaden and revise the chemical screening criteria so as to include other contaminants of concern, including some organic contaminants,

6.2 for material which fails the initial screening, to use biological screening to determine the appropriate means of disposal,

6.3 to specify criteria for sediments which, if not met, would mean that the material is not suited to marine disposal.

The New Management Framework

7. The Environmental Protection Department has reviewed the consultants' recommendations as well as international practices. The proposed new management framework will incorporate the biological screening as an additional tool to gauge the toxic effects of the sediments and to assist in deciding on the most appropriate disposal arrangements

8. The new framework comprises a 3-tier screening procedure (see Annex A for details):

8.1 Tier I screening of existing information to see if there is sufficient information to indicate the sediment is uncontaminated and suitable for open sea disposal. Otherwise, Tier II assessment will have to be made.

8.2 Tier II chemical screening of a prescribed list of chemical contaminants to classify the sediments into three categories before conducting Tier III assessment.

8.3 Tier III biological screening of the biological impact of the sediment to marine organisms so as to determine the most appropriate disposal option for contaminated sediment.

9. The new framework generally follows the consultants' recommendations, and additional safeguards are introduced to further reduce the environmental risks:

9.1 A conservative Upper Chemical Exceedance Level is introduced to ensure that no sediment with contaminant concentration above this level is allowed for open sea disposal.

9.2 The Biological test criteria have been tightened up and made more stringent than those recommended by the consultants or indeed those commonly used by other jurisdictions internationally.

9.3 An additional requirement to conduct more rigorous biological testing for sediment destined for confined marine disposal to reduce the risk of adverse biological effects arising from even the very small quantity of material that could be lost during the dumping operation.

10. The new framework will ensure that only sediments with low contaminant level or low biological effect may be taken to open sea disposal. It will also ensure that sediments with high contaminant level or high biological effect should be isolated from the marine environment by confined disposal at East Sha Chau or in exceptional circumstances that they be subjected to other special disposal arrangements such as landfilling provided that the quantities are small.

Proposed Implementation Strategy

11. The proposed sediment management framework will be introduced through a technical circular jointly issued by the Secretary for Planning Environment and Lands and Secretary for Works and will be applicable for all new projects.

12. Under the new arrangement, dedicated open sea disposal sites may accept those sediments with elevated contaminant level but low biological effect. A water quality and sediment monitoring programme will be carried out to confirm the environmental acceptability of this disposal arrangement.

Further development work

13. At present, there is no local laboratory which provides a commercial service for biological testing, and sediment samples will have to be sent to overseas laboratories for testing. A development programme has begun to commission local universities to develop biological testing capabilities using indigenous marine organisms.

14. The relationship between contaminant levels and biological response will be continuously monitored with a view to refining the chemical screening criteria and reducing the need for sediment analysis for future projects.

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