(ACE Paper 8/2004)
For advice

Report on the 84th Environmental Impact Assessment Subcommittee Meeting

Introduction

At its meeting held on 23 February 2004, the Environmental Impact Assessment (EIA) Subcommittee considered the Environmental Impact Assessment (EIA) report on the reprovisioning of the Diamond Hill Crematorium and discussed the Working Paper no. 30 titled "Broadbrush environmental comparison of development options".

Advice Sought

2. Members are requested to advise whether the EIA report should be endorsed and note the points raised by Members at the meeting.

Views of the EIA Subcommittee

Reprovisioning of Diamond Hill Crematorium
(ACE-EIA Paper 2/2004)

Need for the project

3. After long years of operation, there have been frequent breakdown of the existing crematorium over the years. Complaints have been received from the local community regarding air quality nuisance (smoke and odour) of the existing operation. The Food and Environmental Hygiene Department (FEHD) proposes the replacement of the existing crematorium by a new crematorium at Diamond Hill to meet the demand for cremation service in Kowloon.

Description of the project

4. The project is to decommission the existing crematorium and construct a new crematorium of six cremators in-situ. Construction of a new crematorium is a designated project under item N4, part I of schedule 2 of the EIA Ordinance. As the

existing crematorium was used for the handling of pathological/clinical wastes in the past, the decommissioning work is also a designated project under item 3 part II of schedule 2 of the EIA Ordinance.

5. In order to maintain continuous cremation service to the public, phase I works (i.e. construction of the main facilities of the new crematorium) will commence in September 2004 and will be completed in May 2006. Phase II works (i.e. demolition of the existing crematorium and construction of the remaining new facilities) will commence in October 2006 and will be completed in February 2008.

6. The Diamond Hill Crematorium is located along Po Kong Village Road, Kowloon. The nearest air sensitive receivers i.e. residential buildings and schools are about 78 and 234 m from the new facilities.

Members' views

7. Members' discussion at the Subcommittee meeting focused mainly on whether the user department (i.e. the former Urban Services Department (USD) and now the FEHD) has conducted a thorough and rigorous site search for the reprovisioning of the six cremators and whether sites such as disused quarries had been considered; whether a health risk assessment had been conducted; since there was no air quality monitoring data on the existing cremators, how the quality of air discharged from the new cremators could be compared and assessed; whether the crematorium could stop operation when atmospheric stability class E and class F are predicted (i.e. when the 5-second average odour emitted would be quite high); whether there would be a guarantee of no additional emission of dioxin and whether there would be commitments of continual monitoring of dioxin emission; how the residual ash of the cremators would be treated; environmental monitoring and auditing and contingency plan; cumulative impact; expansion plan; landscape impact; and whether the technology of the cremators could handle health risks arising from epidemiological episodes which would be more serious than the Severe and Acute Respiratory Syndrome and whether pathogenic emissions would be monitored.

Site search

8. On the siting of the new crematorium, the project proponent team explained that there were three siting options for the six cremators, namely building a new crematorium at the existing crematoria, at a new site and at the existing site at Diamond Hill. The user department had reviewed the space availability of all existing

crematoria. Apart from the existing site at Diamond Hill, no other existing crematoria had space readily available for accommodating six additional cremators. Option 1 was hence not feasible. As for option 2, the former USD conducted a site search in 1998 and FEHD in 2000 without success. The required site should be easily accessible by the public and provided with the necessary infrastructure, including water and electricity supplies, drainage and sewerage system and road access. As advised by the Planning Department, most part of the urban area had been fully developed and no readily available new sites meeting those criteria could be identified. As for the New Territories, the Planning Department advised that relocation should not be contemplated if in-situ replacement with upgrading of facilities was a solution. Having studied the various possible options, it was concluded that the reprovisioning of the cremators at the existing crematorium at Diamond Hill was the only feasible and most cost-effective option.

9. As regards disused quarries and brownfield sites, the project proponent team pointed out that all such sites had designated use. Even if a suitable site was identified, consultation with the relevant District Council would be necessary and strong objections would be anticipated.

Health risk assessment

10. On health risk assessment, the project proponent team explained that a Contamination Assessment Plan (CAP) had been drawn up to assess whether the project would involve any health risk during the demolition stage. Site investigation had been conducted and soil samples at various locations had been collected and analyzed. The findings were that the land was not contaminated to an extent of concern except in one or two locations where heavy metals were found. The Remediation Action Plan (RAP) which provided a framework on steps to be taken to deal with various situations had been prepared and submitted to EPD. With the implementation of the procedures and safety measures, the health risk to workers and the public would be within control.

Monitoring of the air quality impact of the existing cremators

11. The project proponent team indicated that there was no air quality monitoring data on the existing crematorium. However, according to the operating conditions of the cremators and the complaints received relating to dark smoke emissions, odour nuisance and failure rate, a conclusion could be drawn that the quality of the air discharged from the cremators was less than satisfactory. On the other hand,

an air pollution control system would be in place in the new cremators, and there would be monitoring requirements under the specified process licensing conditions. The new cremators would be required to comply with the best practical means requirements under the Air Pollution Control Ordinance. In addition, EPD had laid down the minimum emission standards in terms of the levels of various pollutants including dioxin. Since the new crematorium would have to comply with those standards and requirements, it could be concluded that the quality of the air discharged from the new crematorium would be greatly improved.

Operation of the crematorium under atmospheric stability class E and class F

12. On the proposal to stop the operation of the crematorium when atmospheric stability class E and class F were predicted by the Observatory, the project proponent team explained that since the predicted odour level during those periods was 3.65 as against the maximum acceptable level of 5, the margin was in fact quite wide before causing an odour nuisance. Furthermore, while the crematorium would operate in daytime, atmospheric stability class E and class F would seldom occur during daytime period. In addition, the crematorium would accept advance bookings of cremation service up to two weeks. On the other hand, the Observatory would not be able to provide a weather forecast relating to atmospheric stability two weeks in advance. The proposal was hence not feasible.

13. The project proponent team indicated that to address Members' concern, the operator of the crematorium could step up monitoring of the operation of the cremators. One effective means to prevent odour was to ensure complete combustion in the combustion chamber. If atmospheric stability class E and class F were predicted, the crematorium could step up monitoring of the temperatures of the primary and secondary combustion chambers, the oxygen content, etc. to make sure that the cremators were in the best operating conditions.

Additional loading of dioxin emission

14. On additional loading of dioxin emission, the project proponent team indicated that the operation of the new cremators would be subject to the specified process licensing control and all the emissions would be subject to the emission limit. That would serve as a guarantee that there would not be any additional dioxin emission. Furthermore, apart from the monitoring of the vital operating parameters of the combustion chambers, the operator had to conduct regular stack monitoring under the specified process licensing conditions. The frequency of such monitoring would be

specified by the Authority concerned and the data collected would be submitted to EPD.

Treatment of the residual ash

15. As regards the treatment of the residual ash during demolition, the project proponent team explained that such ash would be properly disposed off.

Environmental Monitoring and Auditing and contingency plan

16. The project proponent team pointed out that the waste assessment plan, the CAP and the RAP set out detailed actions in handling wastes arising from land contamination during the demolition stage of the crematorium. Those plans could be taken as a contingency plan as well the proper management plan of the operation stage of the crematorium.

17. In addition, the environmental management plan at Appendix F of the EIA Report set out a "plan-do-check-act cycle" for the future operator. Anything not operating in accordance with the operation procedures would be rectified immediately. The check and review process in place would ensure that mitigation measures would be implemented to minimise the occurrence of malfunctioning or mishandling.

Cumulative impact

18. The project proponent team pointed out that EPD had put down very detailed requirements with regard to the assessment of cumulative impact. The requirements were the assessment of emissions from the cremators; assessment of additional loading from other surrounding sources and the background air pollutant level within the region; and also the assessment of additional loading arising from neighbouring concurrent projects. The project proponent team confirmed that the residual cumulative impacts were within acceptable level after the implementation of the recommended remedial measures.

Expansion plan

19. In response to Members' enquiry, the project proponent team indicated that to meet the increase in demand for cremation service, the user department would gradually reprovision old cremators by new ones using new technology and increasing throughput. The Wo Hop Shek Crematorium would be the next crematorium planned

for the reprovisioning of its cremators. The user department had no plan to pursue centralization of cremation service in one single location in view of the need to provide convenient service to the public.

Landscape

20. The project proponent team noted Members' suggestion that due to its close proximity to schools and residential area, the crematorium should be designed in a proactive manner and should have enhanced landscape features in addition to mitigation measures.

Pathogenic emission and epidemiological monitoring

21. On pathogenic emissions, the project proponent team explained that pathogen would not cause any major concern and was hence not included in the EIA Report because the high temperature of the cremators at 850°C would have killed all pathogens and bacteria in question. Nonetheless, a Member expressed concern and requested the project proponent to conduct epidemiological monitoring of the crematorium during the operational stage and release the monitoring data to the public for information.

22. FEHD, the user department, conducted some research after the meeting on 23 February 2004 and informed the Subcommittee Chairman in writing that such monitoring was a new parameter which had not been covered in any previous EIA Studies. The Department of Health also confirms that, according to the current knowledge of evidence, all microorganisms are unable to survive the temperature of 850°C or above. As all microorganisms would be destroyed during the cremation of infected human bodies, there is no risk of transmitting infectious diseases through the aerial emissions from the cremation process. For the same reason, the Department of Health considers it not necessary to establish any monitoring on the level of microorganisms among the emissions form the crematorium and no such monitoring has been carried out. The letter from FEHD is at Annex A.

Conclusion

23. Members agreed to recommend the endorsement of the EIA report to the Council with the following conditions-

(a) to step up the frequency of monitoring work particularly stack monitoring

and monitoring on dioxin emission; and

(b) to monitor the cumulative air pollution impact under varying weather conditions.

The strategic environmental assessment on the Hong Kong 2030 Study

24. The broad-brush environmental comparison of the development options of the Hon Kong 2030 Study and an overview of the environmental issues related to the options were set out in working paper no. 30 of the Study which had been uploaded onto Planning Department's website. Members agreed that the working paper should be discussed at the EIA Subcommittee meeting if time was available. The main points of the discussion are set out in the following paragraphs.

Port development

25. Members noted that one of the assumptions adopted in the subject of port development was that according to the port development review conducted, the export trade in South China was growing substantially. No single port in the Mainland/Hong Kong could meet the full demands for container port services in the region. Hong Kong would be able to benefit from this development in view of its position as a trade, transportation and logistics hub. The points in question were therefore where Hong Kong people would like to have the port, and among other things, the impacts of those options on the environment.

26. Members in general did not object port development. However, the different options of port development had to be assessed on a like-for-like basis. The Southwest Tsing Yi option had the benefit of the existing infrastructure including roads, back-up area and related services for container terminals. As regards the Northwest Lantau option, additional infrastructure and associated facilities would be required to provide the necessary support services if the port was to be developed there. Members stressed that the implications of such additional infrastructure and associated facilities required in terms of the impacts to the environment should be taken into consideration in making a decision.

Consolidation versus decentralization

27. The consolidation pattern assumed that sites in the urban areas would be developed first and no New Development Area (NDA) in the New Territories would be

completed before 2020. It had the advantage of being more flexible in terms of planning. Members considered that the main trend development would be consolidation with some degree of decentralization. In view of the lack of space, new NDAs in the New Territories would be relatively small in future with an estimated population of around 100,000. Furthermore, there would be many constraints in increasing job opportunities in those developments.

The relationship between planning and transport

28. Members noted that strategic planning was extremely sensitive to policy changes. Hence, strategic planning and policy making were in many ways interactive. For example, the aspirations and views expressed by the public during stage I and II of the Hong Kong 2030 Study had been submitted to the Administration for consideration. One of the views expressed at that time was that strategic planning would be difficult if there was no population policy. It was believed that the subsequent announcement of the population policy was to a certain extent due to the interaction mentioned.

Zoning of agriculture land

29. Members pointed out that Hong Kong was one of economies in which agriculture played a very small role in its economic growth. However, most of the lands in the New Territories were zoned as agriculture land and such zoning had given rise to a lot of problems. Members considered that the zoning of agricultural land in the New Territories was a major outstanding planning issue to be dealt with in future. The Planning Department representative explained that the administration of rural and urban land were totally different. While urban land would be developed, rural land required proper management. At present, the Government mainly made use of the zoning mechanism to manage rural land. If a more proactive management approach was to be adopted, both the institutional management (including Government powers) and resources availability had to be reviewed.

EIA Subcommittee Secretariat
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