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The Hongkong Electric Co., Ltd.

港燈
HK Electric

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) ORDINANCE, CAP. 499

ENVIRONMENTAL PERMIT NO. EP-071/2000/C

LAMMA POWER STATION EXTENSION ENVIRONMENTAL MONITORING & AUDIT PROGRAMME AT OPERATIONAL PHASE

Report Title	Monthly EM&A Report (May 2015)
Date	11 June 2015
Certified by	(Mr. IP Tat-Yan, Environmental Team Leader)
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EXECUTIVE SUMMARY

This is the 103rd monthly Environmental Monitoring and Audit (EM&A) report for the Project "Operation of Lamma Power Station Extension" prepared by the Environmental Team (ET). This report presents the results of impact monitoring on air quality, noise, water quality and environmental audit for the operation of the said project in May 2015.

Air quality, noise and water quality monitoring were performed. The results were checked against the established Action/Limit (AL) levels. The implementation status of the environmental mitigation measures, Event/Action Plan and environmental complaint handling procedures were also checked.

Plant Availability

Unit L9 was fully available in the reporting month.

Environmental Monitoring Works

Environmental monitoring works, as mentioned in the EM&A Manual (Operational phase), were performed during the operation of Lamma Power Station Extension in the reporting period.

Air Quality
No exceedance of Action and Limit levels for stack NOx was recorded in the reporting month.

Noise
No exceedance of Action and Limit levels for noise was recorded in the reporting month.

Water Quality
No exceedance of Action and Limit levels for water quality was recorded in the reporting month.

Implementation Status of Environmental Mitigation Measures

Environmental mitigation measures were implemented in the reporting month.

Environmental Complaints

No complaint against the Project was received in the reporting month.

Future Key Issues

Key issues to be considered in the coming month include:

Air Impact
- To continuously monitor the stack NOx for Lamma Power Station Extension.

Noise Impact

- To continuously monitor the noise for Lamma Power Station Extension.

Water Impact

- To continuously carry out the water quality monitoring for Lamma Power Station Extension.

Concluding Remarks

The environmental performance of the project was generally satisfactory.

1. INTRODUCTION

The operational phase Lamma Power Station Extension commenced in mid October 2006 following the completion of erection works and commissioning tests for Unit L9. The Environmental Team (hereinafter called the "ET") was formed within The Hongkong Electric Co., Ltd. (HK Electric) to undertake Environmental Monitoring and Audit for "Operation of Lamma Power Station Extension" (hereinafter called the "Project"). Under the requirements of Section 6 of Environmental Permit EP-071/2000/C, an EM&A programme for impact environmental monitoring set out in the EM&A Manual (Operational Phase) is required to be implemented. In accordance with the EM&A Manual, environmental monitoring of air quality, noise and water quality are required for the Project.

This report summarizes the environmental monitoring and audit work for the Project for the month of May 2015.

1.1 Plant Availability

Unit L9 was fully available in the reporting month.

1.2 Summary of EM&A Requirements

The EM&A program requires environmental monitoring for air quality, noise and water quality. The EM&A monitoring work for air quality, noise and water quality are described in Sections 2, 3 and 4 respectively.

The following environmental audits are summarized in Section 5 of the report:

- Environmental monitoring results;
- The implementation status of environmental protection and pollution control / mitigation measures.

The future key issues for the Project will be reported in Section 6 of this report.

2. AIR QUALITY

2.1 Monitoring Requirements

In accordance with the EM&A Manual (Operational Phase) for Lamma Extension, stack NOx is continuously monitored. Stack NOx monitoring data would be checked against the Action/Limit Levels stated in the EM&A Manual. The monitoring frequency is shown in Table 2.1 below:

Table 2.1 Air Quality Monitoring Parameter and Frequency

Parameter	Frequency
Hourly Average Stack NOx	Continuous

2.2 Summary of Results and Observations

Monitoring of stack NOx was conducted during the operation of Unit L9 in the reporting month. A monthly summary of monitoring data is shown in Appendix C.

No Action/Limit Level exceedance on stack NOx was recorded in the reporting month.

3. NOISE

3.1 Monitoring Requirements

In accordance with the EM&A Manual for Lamma Extension (Operational Phase), continuous noise monitoring at Ash Lagoon is carried out to calculate the noise arising from the operation of Lamma Extension at the critical NSR at Hung Shing Ye. Baseline noise levels are applied for correction to the noise monitoring data. The data after corrections would be checked against the Limit Levels specified in the EM&A Manual.

The noise monitoring location is shown in Figure 3.1. The monitoring parameter and frequency are shown in Table 3.1 below:

Table 3.1 Noise Monitoring Parameter and Frequency

Parameter	Frequency	Time Period
30-min L_{Aeq}	continuous	0700-2300 hrs and 2300-0700 hrs of next day

3.2 Summary of Results and Observations

Continuous noise monitoring was conducted at the monitoring station at Ash Lagoon. The monitoring results are shown in Appendix D.

No Action/Limit Level exceedance on noise was recorded in the reporting month.

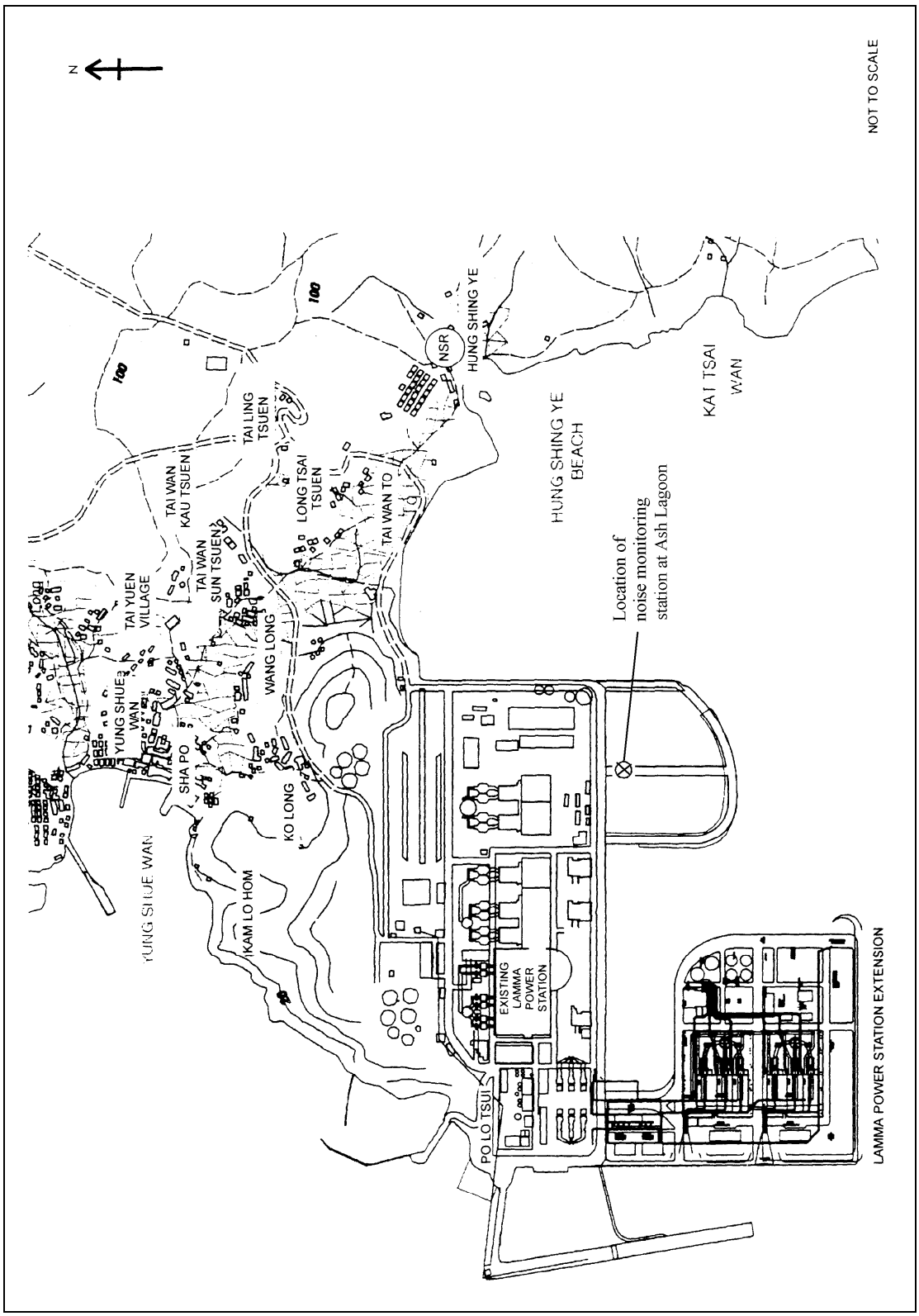

Figure 3.1 Location of Noise Monitoring Station

4. WATER QUALITY

4.1 Monitoring Requirements

In accordance with the EM&A Manual for Lamma Extension (Operational Phase), the monitoring requirements for the EM&A work should strictly follow the discharge licence for L1-L9 & GT57 issued under the Water Pollution Control Ordinance (WPCO).

The parameters as stated in Table 4.1 were monitored and checked against the Action/Limit Levels as given in Appendix B.

Table 4.1 Water Quality Monitoring Parameters and Frequencies

Item	Parameters	Frequencies
1	Cooling Water Temperature Rise	Daily
2	Total Residual Chlorine	Bi-weekly
3	Temperature of Blowdown Effluent	At least twice per year
4	Suspended Solids from Blowdown Effluent	At least twice per year
5	Grease & Oil from Blowdown Effluent	At least twice per year
6	Scum of foam in ambient water	Daily

4.2 Summary of Results and Observations

Monitoring of various parameters as listed in Table 4.1 above was carried out during the operation of Unit L9 in the reporting month. A monthly summary of the data is shown in Appendix E.

The data recorded for the monitoring parameters were all below their corresponding Action/Limit Levels. No Action/Limit level exceedance was recorded in the reporting month. There was no foam present within 500 meters of Hung Sing Ye Beach in the reporting month. Details of the foam observation report are also given in Appendix E. The effluent quality was generally satisfactory.

5. ENVIRONMENTAL AUDIT

5.1 Review of Environmental Monitoring Procedures

The environmental monitoring procedures were regularly reviewed by the Environmental Team. No modification to the existing monitoring procedures was recommended.

5.2 Assessment of Environmental Monitoring Results

Monitoring results for Air Quality, Noise and Water Quality

The environmental monitoring results for air quality, noise and water quality in May 2015 presented in Sections 2, 3 and 4 respectively are summarized in Table 5.1.

Table 5.1 Summary of Action/Limit Level Exceedances on Monitoring Parameters

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
Air					
1	Stack NOx	01/05/15 31/05/15	0	0	
Noise					
1	Noise levels at the critical NSR at Hung Shing Ye calculated by the noise alarm monitoring system	01/05/15 31/05/15	0	0	
Water					
1	Cooling Water Temperature Rise	01/05/15 31/05/15	0	0	
2	Total Residual Chlorine	01/05/15 31/05/15	0	0	
3	Temperature of Blowdown Effluent	01/05/15 31/05/15	N.A.	N.A.*	

Item	Parameter Monitored	Monitoring Period	No. of Exceedances In		Event/Action Plan Implementation Status and Results
			Action Level	Limit Level	
4	Suspended Solids from Blowdown Effluent	01/05/15 31/05/15	N.A.	N.A.*	
5	Grease & Oil from Blowdown Effluent	01/05/15 31/05/15	N.A.	N.A.*	
6	Inspection of Scum/Foam in ambient water	01/05/15 31/05/15	0	0	

Note: * Monitoring was not scheduled in the reporting month

Land Contamination

There was no land contamination incident happened in the reporting month.

Waste Management

Waste management practice was properly implemented for operation of the project as outlined in the Waste Management Plan for Lamma Power Station Extension. There was no unacceptable environmental impact on waste management in the reporting month.

5.3 Implementation Status of Environmental Mitigation Measures

Mitigation measures detailed in the permits and the EM&A Manual (Operational Phase) are required to be implemented. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix F.

5.4 Implementation Status of Event/Action Plans

The Event/Action Plans for air quality, noise and water quality extracted from the EM&A Manual (Operational Phase) are presented in Appendix A.

5.5 Implementation Status of Environmental Complaint Handling Procedures

In May 2015, no complaint against the Project was received.

Table 5.2 Environmental Complaints Received in May 2015

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

Table 5.3 Outstanding Environmental Complaints Carried Over

Case Reference / Date, Time Received / Date, Time Concerned	Descriptions / Actions Taken	Conclusion / Status
Nil	N/A	N/A

6. FUTURE KEY ISSUES

6.1 Outage Plan for the coming 3 months

No major outage plan for the coming three months.

6.2 Key issues for the coming month

Key issues to be considered in the coming month include:

Air Impact

- To continuously monitor the stack NOx for Lamma Power Station Extension.

Noise Impact

- To continuously monitor the noise for Lamma Power Station Extension.

Water Impact

- To continuously carry out the water quality monitoring for Lamma Power Station Extension.

7. CONCLUSION

Environmental monitoring was performed as required in the reporting month. All monitoring results were checked and reviewed.

No Action/Limit level exceedance on stack NOx was recorded in the reporting month

No Action/Limit level exceedance on noise was recorded in the reporting month.

No Action/Limit level exceedance on water quality parameters was recorded in the reporting month.

Environmental mitigation measures recommended in the EM&A Manual for the operational activities were implemented in the reporting month. No complaint against the Project was received in the reporting month. No prosecution was received for this Project in the reporting period.

The environmental performance of the Project was generally satisfactory.

Appendix A Event/Action Plans

Table A.1 Event/Action Plan for Air Quality

Exceedance	ET Leader	IEC	Operations Engineer
Action Level			
Exceedance of one sample	Identify source; Inform IEC verbally; Repeat measurement to confirm finding.	Check monitoring data submitted by ET Leader and advise ET Leader for any finding.	Rectify any unacceptable practice; Amend any working methods if appropriate.
Exceedance of two or more consecutive samples	Identify source; Inform IEC verbally; Repeat measurement to confirm finding; Increase monitoring frequency; Discuss with Operations Engineers on remedial actions required; If exceedance stops, discontinue additional monitoring.	Check monitoring data submitted by ET Leader and advise ET Leader for any finding; Verify the implementation of the remedial measures;	Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions.
Limit level			
Exceedance of one sample	Repeat measurement to confirm finding; Identify the source(s) of the impact. Verbally inform IEC and EPD of the exceedance as soon as practicable; Discuss with Operations Engineers on remedial actions required; Increase monitoring frequency; Assess the effectiveness of the remedial actions and keep IEC and EPD informed of the results.	Check monitoring data submitted by ET Leader and advise ET Leader of any finding; Verify the implementation of the remedial measures.	Take immediate action to avoid further exceedances; Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions.
Exceedance of two or more consecutive samples	Identify source; Identify the source(s) of the impact. Verbally inform IEC and EPD of the exceedance as soon as practicable; Repeat measurement to confirm finding; Increase monitoring frequency; Carry out analysis on existing control procedures to determine possible mitigation to be implemented; Discuss with Operations Engineers on the remedial actions to be taken; If exceedance stops, discontinue additional monitoring.	Provide feedback and advise ET Leader/Operations Engineers on the effectiveness of the remedial actions proposed by them; Verify the implementation of the remedial measures.	Take immediate action to avoid further exceedance; Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions; Check the suspected defective parts if the problem still does not come under control.

Table A.2 Event/Action Plan for Noise

Exceedance	ET Leader	IEC	Operations Engineer
Action Level	If the complaint against Lamma Extension operation is valid, identify the source(s) of the noise and propose remedial measures if necessary;	Verify the implementation of the remedial measures.	Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions.
Limit Level	Check monitoring data to confirm findings; Identify the source(s) of the impact. If the exceedance is found to be valid and due to the Lamma Extension operation, verbally inform IEC and EPD of the exceedance as soon as practicable; Discuss with Operations Engineers on remedial actions required.	Check monitoring data submitted by ET Leader and advise ET Leader of any finding; Verify the implementation of the remedial measures.	Take action to avoid further exceedance; Discuss with ET Leader on the remedial actions required; Implement the agreed remedial actions.

Table A.3 Event/Action Plan for Water Quality

Exceedance	ET Leader	IEC	Operations Engineer
Action Level			
Exceedance on one sampling day	Identify source(s) of impact; Verbally inform IEC.	Check monitoring data submitted by ET Leader and advise ET Leader for any findings.	Rectify unacceptable practice; Amend any working methods if appropriate.
Exceedances on more than one consecutive sampling day	Identify source(s) of impact; Verbally inform IEC; Repeat in-situ measurements to confirm findings; Discuss with Operations Engineers on remedial actions required; Increase monitoring frequency; If exceedance stops, discontinue additional monitoring.	Check monitoring data submitted by ET Leader and advise ET Leader for any finding; Verify the implementation of the remedial measures.	Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions.
Limit Level			
Exceedance on one sampling day	Identify the source(s) of impact; Verbally inform IEC and EPD of the exceedance, as soon as practicable; Repeat measurement to confirm finding; Discuss with Operations Engineers on remedial actions required; Increase monitoring frequency; Assess the effectiveness of the remedial actions and keep IEC and EPD informed of the results.	Check monitoring data submitted by ET Leader and advise ET Leader for any finding; Verify the implementation of the remedial measures.	Take immediate action to avoid further exceedance; Discuss with ET Leader on remedial actions required; Implement the agreed remedial actions.
Exceedances on more than one consecutive sampling day	Identify the source(s) of impact; Verbally inform IEC and EPD of the exceedance as soon as	Provide feedback and advise ET Leader/Operations Engineers on the effectiveness of the remedial	Take immediate action to avoid further exceedance; Discuss with ET Leader on

Exceedance	ET Leader	IEC	Operations Engineer
	practicable; Repeat measurement to confirm finding; Discuss with Operations Engineers on remedial actions required; Increase monitoring frequency; Carry out analysis on existing control procedures to determine possible mitigation to be implemented; If exceedance stops, discontinue additional monitoring.	actions proposed; Verify the implementation of the remedial measures.	remedial actions required; Implement the agreed remedial actions; Check the suspected defective parts if the problem still does not come under control.

Appendix B Action and Limit Levels for Air Quality, Noise and Water Quality Monitoring

B.1 Air

Parameter	Frequency	Action	Limit
Hourly Average Stack NOx (Natural Gas)	Continuous	81 mg/Nm^3	90 mg/Nm^3
Hourly Average Stack NOx (Light Oil)	Continuous	135 mg/Nm^3	150 mg/Nm^3

Note: Expressed as at 0ºC, 101.325kPa, dry and corrected to 15% O_2 condition.

B.2. Noise

Parameter	Frequency	Action	Limit
Noise Levels at the critical NSR at Hung Shing Ye calculated by the noise alarm monitoring system	Continuous	When more than one complaint is received within two weeks, which are concerning the same event or location	a. 60 dB(A) in $L_{Aeq,30\ min}$ (07:00-23:00 hrs) b. 50 dB(A) in $L_{Aeq,30\ min}$ (23:00-07:00 hrs on next day)

B.3 Water

Monitoring Area / Location	Parameters to be Monitored	Frequency	Concentration Not to Be Exceeded	Action	Limit
Trade Effluent Cooling Water	Temperature	Daily, when the combined cycle unit is operating	Temperature at outfall should not exceed that at intake by > 10°C	9.5°C	+10°C above intake
	Total Residual Chlorine	Bi-weekly, when the combined cycle unit is operating	0.5mg/L	0.47 mg/L	0.5 mg/L
Trade Effluent Boiler Blowdown	Temperature	At least twice per year, when the combined cycle unit is operating	40°C	-	40°C
	Suspended Solids	At least twice per year, when the combined cycle unit is operating	30 mg/L	-	30 mg/L
	Grease & Oil	At least twice per year, when the combined cycle unit is operating	20 mg/L	-	20 mg/L
Marine waters cooling water outfall	Scum of foam in ambient water	Daily, when the combined cycle unit is operating	No scum within 500 m of Hung Shing Ye Beach	When scum passes the station south-west corner and north-west corner	No scum within 500 m of Hung Shing Ye Beach

Appendix C Air Quality Monitoring Results

Site: Lamma Power Station – Unit L9

Month: May 2015

Monthly Summary of Stack NOx

Date	Daily Maximum Stack NOx concentration (mg/Nm^3)[#]
1/5/2015	47
2/5/2015	47
3/5/2015	44
4/5/2015	45
5/5/2015	47
6/5/2015	49
7/5/2015	46
8/5/2015	45
9/5/2015	46
10/5/2015	46
11/5/2015	48
12/5/2015	54
13/5/2015	48
14/5/2015	46
15/5/2015	45
16/5/2015	47
17/5/2015	46
18/5/2015	46

Date	Daily Maximum Stack NOx concentration (mg/Nm^3)#
19/5/2015	46
20/5/2015	43
21/5/2015	49
22/5/2015	48
23/5/2015	45
24/5/2015	44
25/5/2015	43
26/5/2015	45
27/5/2015	42
28/5/2015	42
29/5/2015	43
30/5/2015	45
31/5/2015	43

Note: # - Hourly average value. Expressed as at 0ºC, 101.325kPa, dry and corrected to 15% O_2 condition.

Appendix D Noise Monitoring Results

Site: Lamma Power Station Extension
Measurement Location: Ash Lagoon
Measurement Parameter: 30-min Leq (07:00-23:00 hrs and 23:00-07:00 hrs on next day)

Date	Time	Calculated Noise Level at NSR at Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))
		Max	Avg	
01/05/2015	07:00-23:00	---	---	60
01/05/2015	23:00-07:00	---	---	50
02/05/2015	07:00-23:00	---	---	60
02/05/2015	23:00-07:00	---	---	50
03/05/2015	07:00-23:00	---	---	60
03/05/2015	23:00-07:00	37	35	50
04/05/2015	07:00-23:00	---	---	60
04/05/2015	23:00-07:00	33	28	50
05/05/2015	07:00-23:00	---	---	60
05/05/2015	23:00-07:00	36	33	50
06/05/2015	07:00-23:00	---	---	60
06/05/2015	23:00-07:00	40	35	50
07/05/2015	07:00-23:00	---	---	60
07/05/2015	23:00-07:00	40	34	50
08/05/2015	07:00-23:00	---	---	60
08/05/2015	23:00-07:00	36	33	50
09/05/2015	07:00-23:00	---	---	60
09/05/2015	23:00-07:00	37	34	50
10/05/2015	07:00-23:00	---	---	60
10/05/2015	23:00-07:00	36	34	50
11/05/2015	07:00-23:00	56	52	60
11/05/2015	23:00-07:00	40	36	50
12/05/2015	07:00-23:00	50	45	60
12/05/2015	23:00-07:00	43	35	50
13/05/2015	07:00-23:00	42	39	60
13/05/2015	23:00-07:00	38	34	50
14/05/2015	07:00-23:00	---	---	60
14/05/2015	23:00-07:00	37	34	50
15/05/2015	07:00-23:00	---	---	60
15/05/2015	23:00-07:00	38	34	50
16/05/2015	07:00-23:00	49	45	60
16/05/2015	23:00-07:00	43	36	50
17/05/2015	07:00-23:00	---	---	60

Date	Time	Calculated Noise Level at NSR at Hung Shing Ye (dB(A))		Limit Noise Level (dB(A))
		Max	Avg	
17/05/2015	23:00-07:00	38	33	50
18/05/2015	07:00-23:00	---	---	60
18/05/2015	23:00-07:00	37	31	50
19/05/2015	07:00-23:00	---	---	60
19/05/2015	23:00-07:00	37	30	50
20/05/2015	07:00-23:00	---	---	60
20/05/2015	23:00-07:00	45	38	50
21/05/2015	07:00-23:00	---	---	60
21/05/2015	23:00-07:00	38	35	50
22/05/2015	07:00-23:00	---	---	60
22/05/2015	23:00-07:00	43	36	50
23/05/2015	07:00-23:00	40	39	60
23/05/2015	23:00-07:00	47	37	50
24/05/2015	07:00-23:00	---	---	60
24/05/2015	23:00-07:00	46	37	50
25/05/2015	07:00-23:00	32	30	60
25/05/2015	23:00-07:00	38	34	50
26/05/2015	07:00-23:00	43	41	60
26/05/2015	23:00-07:00	36	31	50
27/05/2015	07:00-23:00	---	---	60
27/05/2015	23:00-07:00	37	34	50
28/05/2015	07:00-23:00	---	---	60
28/05/2015	23:00-07:00	38	34	50
29/05/2015	07:00-23:00	---	---	60
29/05/2015	23:00-07:00	40	35	50
30/05/2015	07:00-23:00	---	---	60
30/05/2015	23:00-07:00	40	36	50
31/05/2015	07:00-23:00	---	---	60
31/05/2015	23:00-07:00	41	34	50

Note: 1. "--- " represents the measured noise monitoring data lower than the established notional background level/discarded under strong wind.

2. Pursuant to the EM&A Manual (Operational Phase), the corrections for accounting the differences of barrier attenuations and atmospheric absorption attenuations for the noise alarm station and noise sensitive receiver are 5 dB(A) and 2 dB(A) respectively.

Appendix E Summary Results and Observations on Water Quality Monitoring

Maximum Outlet Temperature Rise (Deg. Celsius) of Cooling Water at C.W. Outfall No.3 Serving L9 Condensers

Weighted by Flowrates of Individual Streams (May 2015)

Date	Maximum Outlet Temperature Rise (Deg. Celsius)
1/5/2015	8.2
2/5/2015	8.2
3/5/2015	8.3
4/5/2015	8.4
5/5/2015	8.4
6/5/2015	8.4
7/5/2015	8.3
8/5/2015	8.3
9/5/2015	8.4
10/5/2015	8.5
11/5/2015	8.4
12/5/2015	8.3
13/5/2015	8.4
14/5/2015	8.3
15/5/2015	8.3
16/5/2015	8.3
17/5/2015	8.3
18/5/2015	8.3
19/5/2015	8.5
20/5/2015	8.5
21/5/2015	8.5
22/5/2015	8.4
23/5/2015	8.4
24/5/2015	8.5
25/5/2015	7.5
26/5/2015	8.4
27/5/2015	8.5
28/5/2015	8.5
29/5/2015	8.5
30/5/2015	8.6
31/5/2015	8.6

Total Residual Chlorine Level at C.W. Outfall No. 3 (May 2015)

Date of sampling	15/05/2015	29/05/2015
Total Residual Chlorine, mg/L	0.40	0.40

Blowdown from Unit L9 Steam Turbine and HRSG to C.W. Outfall No. 3 (May 2015)

Source of discharge	HSRG	Steam Turbine
Suspended Solid, mg/L	#	#
Grease & Oil, mg/L	#	#
Temperature, Deg. Celsius	#	#

Note: # Monitoring was not scheduled in the reporting month. The last monitoring was carried out in March 2015.

Observation of Scum Formation in Marine Waters Mixing Zone at Lamma Power Station Extension (May 2015)

Date	Observation
1/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
2/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
3/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
4/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
5/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
6/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
7/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
8/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
9/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
10/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
11/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall

Date	Observation
12/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
13/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
14/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
15/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
16/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
17/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
18/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
19/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
20/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
21/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
22/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
23/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
24/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
25/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
26/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
27/5/2015	No scum within 500m of HSY Beach, NW/SW corner of the Station & CW Outfall
28/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
29/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
30/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2
31/5/2015	No scum within 500m of HSY Beach & NW/SW corner of the Station; Some foam outside CW Outfall and defoamer added to Outfalls No.1 & No.2

Note: The water spraying system at C.W. Outfall No.1 was in service in the reporting month.

Appendix F Summary of EMIS

EM&A Log Ref.	Mitigation Measures	Implementation Status
	AIR QUALITY	
A1	Implement the gas-fired units as base-load units. For the existing power station, the more efficient units incorporating FGD and low NOx systems shall be operated first under normal situation to meet system demand. In case of any deviations from this, EPD shall be notified of the details and circumstances for the deviation.	Complied
A2	HK Electric shall undertake annual revisions and update of its GHG emissions inventory, which covers all HK Electric existing facilities and new extension, for at least the six GHGs specified under the Kyoto Protocol (CO2, CH4, N2O, HFCs, PFCs and SF6). The inventory shall be established and maintained in accordance with the latest IPCC Guidelines or any other guidelines issued by Government, with details documented for regular reviews and updates. The inventory shall be reported on an annual basis, including actual figures and targets for the previous and current years, as well as the next year's forecast. Discrepancies for actual versus target figures and actions for improvement or enhancement shall be discussed. HK Electric shall update the inventory according to the figures of the electricity load forecast, upon every subsequent review by the Government. This shall also be reported in the annual report. (The annual report of GHG emissions inventory shall be deposited with the Director of Environmental Protection within three months after the end of the reporting period.)	Complied
	WATER QUALITY	
B1	No further mitigation measures were found to be necessary provided the discharge of cooling water and residual chlorine are kept below the rates assumed in the water quality assessment*. *All discharges of effluent/wastewater shall be controlled through licensing under the *Technical Memorandum for Effluents Discharged into Drainage and Sewerage Systems. Inland and Coastal Waters*, issued under Section 21 of the *Water Pollution Control Ordinance*.	Complied
	NOISE	
C1	HK Electric shall implement the gas-fired units for based-load operation to minimize the noise generated from the existing units.	Complied
	LANDSCAPE & VISUAL IMPACTS	
D1	No mitigation measures were considered necessary.	N/A

EM&A Log Ref.	Mitigation Measures	Implementation Status
	LAND CONTAMINATION AND WASTE MANAGEMENT	
E1	HK Electric shall maintain records of the following items: - integrity testing of light oil tanks; - daily inspection of the light oil tanks and bunded areas; - quantities of oily waste and sludge generated from oil interceptors and chemical waste generated from operation of the power station; - deposal oil oily waste/sludge and chemical waste to licenced site; - quantities of chemical and chemical waste; - incident of spillage and remediation actions; and - emergency response training and drills.	Complied
	MARINE ECOLOGY	
F1	No mitigation measures were considered necessary.	N/A
	FISHERIES	
G1	No mitigation measures were considered necessary.	N/A
	RISK ASSESSMENT	
H1	No mitigation measures were considered necessary.	N/A