

Ref: PD/550/03/21

**LAMMA POWER STATION EXTENSION**

**ENVIRONMENTAL PERMIT NO.  
EP-071/2000/C**

**LAND CONTAMINATION AVOIDANCE PLAN**

**November 2019**

**Revision 3**



**Projects Division**  
*The Hongkong Electric Co., Ltd.*  
香港電燈有限公司


香港電燈有限公司  
The Hongkong Electric Co., Ltd.



**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	<u>Land Contamination Avoidance Plan (Revision 3)</u>
Date	<u>15 November 2019</u>
Certified by	 <u>(Mr. IP Tat-Yan, Environmental Team Leader)</u>
Verified by	 <u>Mr. Y T Tang</u> (AECOM Asia Company Limited, Independent Environmental Checker)

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### APPENDIX

Generation Division Administration Standing Instruction No. 42:  
Chemical Spillage Control and Emergency Evacuation Procedure

1. INTRODUCTION

The Environmental Impact Assessment (EIA) for the construction and operation of a 1,800MW Gas-fired Power Station at Lamma Power Station Extension (LMX) has been completed and approved by the Environmental Protection Department (EPD) under the Environmental Impact Assessment Ordinance (EIAO) (AEIAR-010/1999, hereafter referred to as the approved EIA report). An Environmental Permit (EP-071/2000/C) has also been issued by EPD stipulating the environmental requirements pursuant to the construction and operation of Lamma Extension.

Clause 4.9 of the EP set out requirements with regard to the preparation of a Land Contamination Avoidance Plan as follows:-

*The Permit Holder shall deposit with the Director no later than three months prior to the commissioning of the first 300MW unit a Land Contamination Avoidance Plan which shall take into account the recommendations in Section 9.4, Part B of the EIA Report.*

The EIA report recommended that should proper land contamination avoidance practice be implemented for operation of the project, there would be no unacceptable environmental impact. The first unit L9 has been in operation since 2006 and a Land Contamination Avoidance Plan (Revision 1) was deposited to EPD in May 2006 to fulfill the EP requirements. For the new units L10, L11 & L12 which are under construction and are scheduled for commercial operation in 2020, 2022 and 2023 respectively, Selective Catalytic Reduction (SCR) system will be featured for reducing the NO<sub>x</sub> emission. A review paper was submitted to EPD in April 2013 providing an overview for the SCR. In accordance with EPD's letter of 14 June 2013, the adoption of SCR system would not constitute a material change under the EIAO and no variation to the existing EP is required. Nevertheless, the Land Contamination Avoidance Plan shall be updated taking consideration of the adoption of SCR system.

This document serves to fulfill the above EP condition with an objective as to formulate appropriate operational practices and precautionary measures for prevention of land contamination at Lamma Extension.

2. LEGISLATION AND STANDARDS

The following legislation, guidelines and codes of practice related to the management of wastes are used as a basis to evaluate the levels of contamination and to develop of this report:

- Guidance Note for Contaminated Land Assessment and Remediation;
- Waste Disposal Ordinance, in particular the Waste Disposal (Chemical Waste) (General) Regulation;
- Water Pollution Control Ordinance, in particular Part III on prohibited discharges and deposits;

- A Guide to the Chemical Waste Control Scheme;
- A Guide to the Registration of Chemical Waste Producers;
- Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes;
- Code of Practice on Handling, Transportation and Disposal of Polychlorinated Biphenyl (PCB) Waste;
- Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste; and
- Technical Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.

3. SPECIFIC CONSIDERATIONS FOR SCR SYSTEM

Operation of the SCR requires injection of ammonia in the flue gas path to undergo catalytic reaction with NO<sub>x</sub> to form water and nitrogen. Urea pellets will be adopted as reagent feedstock for conversion to gaseous ammonia for NO<sub>x</sub> removal in the SCR system in view that urea itself is not classified as a hazardous substance and is not regulated as dangerous goods in Hong Kong under the Dangerous Goods Ordinance (Cap 295). In addition, urea is not considered as hazardous chemical under the Guidance Note for Contaminated Land Assessment and Remediation and as such no potential land contamination is caused by urea.

For the SCR catalyst, it consists mainly of titanium oxide (TiO<sub>2</sub>), tungsten oxide (WO<sub>3</sub>), sulphur trioxide (SO<sub>3</sub>), sodium oxide (Na<sub>2</sub>O), potassium oxide (K<sub>2</sub>O), silicon dioxide (SiO<sub>2</sub>) and vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>). All the chemicals presented in the SCR catalyst are not listed under the Risk-Based Remediation Goals (RBRGs) for Soil & Soil Saturation Limit or Risk-Based Remediation Goals (RBRGs) for Groundwater and Solubility Limit. As such no potential land contamination is caused by SCR catalyst.

4. POTENTIAL SOURCES OF LAND CONTAMINATION

The potential sources of land contamination during the operation of Lamma Extension are identified below based on the EIA Report for Lamma Extension.

- Oil spillage; and
- Chemical spillage.

5. PREVENTATIVE MEASURES

5.1 Preventative Measures for Oil Spillage

Oil pipes are of welded joint connection to minimize the chance of leakage, and the majority of them are installed above ground. For underground pipelines, they are housed inside concrete trenches to minimize the potential for land contamination. The trenches are provided with cover plates to allow for servicing or inspection. Routine inspection of the oil pipelines will be conducted to check for any leakage of oil. Oil storage tanks are located in area with impermeable floor and bunding of capacity to accommodate 110% of the volume of the largest oil storage tank to confine the spilled oil if necessary.

#### 5.2 Preventative Measures for Chemical Spillage

All chemicals and chemical wastes generated from Lamma Extension are stored in dedicated storage areas of existing Stores at Lamma Power Station. Used or expired chemicals, deteriorated synthetic lube oil, expired or non-usable paint and similar materials are collected at Lamma Power Station and disposed of by licensed collectors on a regular basis.

#### 5.3 Training and Exercises

To ensure that appropriate actions are taken promptly in the event of an oil or chemical spillage, and to prevent land contamination, HK Electric's Chemical Control Standards and Procedures and Standing Instructions for Handling and Disposal of Hazardous Substances and Dangerous Goods which are currently used for the Lamma Power Station is also applied to Lamma Extension. In addition, training is provided to relevant staff so that they can respond effectively to the emergency situation. The following topics are covered in the training:

- Familiarization with resources to combat oil and chemical spillage;
- General methods to deal with oil and chemical spillage; and
- Procedures for emergency drills.

In addition, the following drills will be scheduled in regular basis:

- Full drill on a simulated oil spillage;
- Full drill on a simulated chemical spillage; and
- Familiarization training exercise.

### 6. EMERGENCY PROCEDURES FOR OIL AND CHEMICAL SPILLAGE

A standing instruction *Generation Division Administration Standing Instruction No. 42 – Chemical Spillage Control and Emergency Evacuation Procedure* is already in place to give instant guidelines on course of action in case of chemical spillage in Lamma Power Station. This document is also applicable in Lamma Extension.

Any spillage within the Lamma Extension is required to report to the engineer-in-charge of the shift with the following details:

- Location of spillage;
- Source and possible cause of spillage; and
- Extent of spillage.

The engineer-in-charge of the shift is required to attend to the spillage and initiate any appropriate health and safety and environmental actions to confine and clean up the spillage. If required, advice from the Chief Generation Chemist will be sought. The prime objectives in combating a spill are:

- To identify and isolate the source of the spillage as soon as possible;
- To contain the oil or chemical spillage and avoid infiltration into soil and discharge to sea;
- To remove oil or chemical using absorbent materials;
- To use dispersants to emulsify the oil, as required; and
- To clean up the contaminated area using appropriate detergent.

In the event of an oil spillage along the oil pipelines or oil storage tank area, pumping system can be stopped immediately with closing of appropriate isolating valves. The oil product is then removed using absorbent materials or other means and put into appropriate drums, labeled as chemical waste, and taken by a licensed collector for further handling.

## 7. RECORDING OF INCIDENTS

After any incident, the engineer-in-charge of the shift is required to compile a detailed report including the following information:

- Details of the incident;
- Estimate of the amounts of spillage/leakage; and
- Actions taken.

The report is used to evaluate any environmental impacts due to the spillage and to assess the effectiveness of the measures taken, so that improvements can be made to the response procedures for future incidents.

In case where the spillage/leakage may result in significant contamination of an area or risk of pollution, the EPD will be informed immediately.

## 8. CONCLUSION

The EP for the Lamma Extension Project requires HK Electric to set out measures for prevention of land contamination. The possible sources of land contamination in the operation of Lamma Extension have been reviewed which include the oil and chemical spillages.

This document has formulated appropriate operational practices and precautionary measures for prevention of land contamination problem. With the above practices and measures duly implemented, the potential for land contamination due to the operation of Lamma Extension is expected to be minimal.



**THE HONGKONG ELECTRIC CO., LTD.**  
**香港電燈有限公司**



**GENERATION DIVISION - Divisional Work Instruction**

Administration Standing Instruction Number : **ASI/42**

Title : Chemical Spillage Control and Emergency Evacuation Procedure  
 Language : English, Chinese  
 Prepared/Revised by : Jimmy P.W. Woo      Date First Issued : 28 Jul 1995  
 Revision : 9      Date Revised : 29 Mar 2018  
 Review Party : CGC      Effective Date : 29 Mar 2018  
 Endorsed by Gas Advisor : L.M. Chiu

Approved By : GM(G)

Rev. No.	Rev. Date	Item No.	Details of Revision
0	28/07/95		Original issue
2	27/08/96	2.4	Added
3	29/08/98	2.2, 2.5 & 2.6	Amended
4	22/05/00	4	Title amended and major revision Plant Chemical Spillage Control and Evacuation Procedure added
		5	Chemical Spillage (During Transportation) Control and Evacuation Procedure added
		6	Relocated from the original item 4 "Drill", and drill frequency amended
5	16/11/07	All	1) (OPS) added to Shift Fire Team Captain in the context to clearly indicate that this person is from OPS Department 2) "Fire Section" changed to "F&S"
		2.6	"Principle" changed to "Principal"
		2.7	"Unit L7 boiler house" replaced by "New Control Building"
		5.7	First sentence rephrased
		5.9	"Fog" changed to "scene"
		6.1	1) "Practice drills" changed to "Drill" 2) FO title changed to FSO

Rev. No.	Rev. Date	Item No.	Details of Revision
6	30/10/09	2.12, 3.12, 4.12, 5.14 4.8  Distribution List	SCOP No. 18 replaced by SCOP No. 87  Rewritten to include "where applicable, the use of Vetter set high pressure sealing system to stop leakage" 1) CDD deleted 2) IT newly added
7	22/11/13	2.5, 3.1, 4.2, 4.3 & 5.2 2.7 4.1 Distribution List	"he" revised to "he/she"  "new F&S Building" revised to "F&S Building" Acid Cleaning Plant added "P&A" changed to "HR&A" "Store" changed to "GCD/Warehouse & Logistics Section (Lamma)"
8	07/12/15	Distribution List	HR&A changed to HR
9	29/03/18	All  2.4, 3.3, 4.4 & 5.4	SGC, SCE and CE title changed to CGC, COE and SOE respectively due to title review in March 2018 Pagers 057 and 062 deleted

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2. LABORATORY CHEMICAL SPILLAGE CONTROL AND EVACUATION PROCEDURE
3. D.G. STORES CHEMICAL SPILLAGE CONTROL AND EVACUATION PROCEDURE
4. PLANT CHEMICAL SPILLAGE CONTROL AND EVACUATION PROCEDURE
5. CHEMICAL SPILLAGE (DURING TRANSPORTATION) CONTROL AND EVACUATION PROCEDURE
6. DRILL

## 1. **INTRODUCTION**

Chemical spillage in a laboratory, storage area or during transportation is not uncommon. Normally, spillage is minor and can be combated quickly with the use of anti-dote. However, there may be times when large quantities of chemical are released when container is broken and the situation becomes out of control. Under such circumstances, it is necessary to evacuate the accident scene.

Situations that may lead to evacuation are illustrated by the following examples:

- a. release of hydrazine or ammonia from a broken carboy/drum in the Dangerous Goods (D.G.) Stores, or during transportation;
- b. co-spillage of a volatile alkali (e.g. hydrazine, ammonia) and a strong alkali (e.g. caustic) in the laboratory;
- c. co-spillage of a volatile acid (e.g. hydrochloric acid, nitric acid) and sulphuric acid in the laboratory;
- d. release of a whole bottle of volatile organic solvent (e.g. ether, methanol) in the laboratory; and
- e. chemical spillage of acid/alkali from plant storage tanks or associated piping.

This instruction details the steps to follow when a hazardous chemical spillage occurs in the laboratory, the D.G. Stores, in the vicinity of chemical tanks or during transportation, to such an extent that evacuation is required.

## 2. **LABORATORY CHEMICAL SPILLAGE CONTROL AND EVACUATION PROCEDURE** <<<SGC title changed to CGC, SCE title changed to COE & CE title changed to SOE

- 2.1 When a massive chemical spillage occurs, leave the room immediately and close the doors of the room. Notify other personnel in the laboratory to leave as well.

If any chemical has come into contact with the eyes or skin, wash thoroughly using the nearest eye washer and water tap. Discard any clothing that may have been contaminated.

- 2.2 Activate the laboratory emergency ventilation system by operating the break glass button at the west laboratory exit (when the emergency ventilation system is activated, the air-conditioning system in the ground floor and first floor of New Control Building will be tripped automatically). Report to the shift Senior Operations Engineer (SOE) in Central Control Room 1 (CCR1) (Pax 5410 or emergency hotline 5333) immediately that a chemical spillage incident has occurred.

- 2.3 The person making the report must clearly state the following:

- a. location of the room in which chemical spillage has occurred;
- b. nature of the spilled chemical if it is known;

- c. extent of the chemical spillage; and
- d. name, department, section and telephone number.

2.4 Upon receiving the chemical spillage report, the shift SOE in CCR1 should:

- a. note down all the details given (items 2.3 a-d) and then immediately;
- b. inform the following persons:
  - Fire & Security (F&S) Control Room (Pax 5361) <<<Pager 062 deleted
  - Shift Fire Team Captain (OPS)
  - Chief Generation Chemist (CGC) <<<Pager 057 deleted
  - Chief Operations Engineer (COE) (CCR1)

2.5 The person who caused or discovered the spillage should give full details of the incident to the Chemist-in-charge and stay in a safe area in the vicinity of the laboratory unless he/she is injured or unconscious. He/She should not be allowed to leave unless instructed by the CGC or his deputy or the shift Fire Team Captain (OPS).

2.6 The Chemist-in-charge should immediately organize two personnel to guard the East Entrance and West Entrance to prevent other people from entering the laboratory mistakenly. They should remain there until the area is cordoned off by the Fire Team. Warning notice should be placed at these entrances as well as the 1/F exit to the west stair. The Chemist-in-charge should then give as much information as possible concerning the chemical to the Principal Firemen and shift Fire Team Captain (OPS). In order that the Chemist-in-charge may be easily identified by the firemen, he should wear a fluorescent vest obtainable from the Emergency Safety Equipment Cabinet.

In the event that spillage occurs outside office hours, the shift SOE should be responsible for ensuring this procedure is carried out.

2.7 All other personnel should evacuate to the open ground between the F&S Building and New Control Building.

2.8 Security should cordon off the building with a minimum distance of 25 m.

2.9 Only firemen, equipped with breathing apparatus and suitable protective clothing, can enter the laboratory to inspect the scene. F&S should be responsible to take note of prevailing wind direction and give advice to approach the scene from the up-wind direction. The firemen should ensure that nobody is trapped inside the Laboratory and arrange to ventilate the affected area by opening the windows, installing electric fans at door/windows, etc. under the advice of the CGC or his deputy or the shift Fire Team Captain (OPS). Firemen on inspecting the scene should also note any details on bottles/containers of the spilled chemical & report to CGC or his deputy or the shift Fire Team Captain (OPS) upon leaving the scene. If the firemen could not positively identify the spilled chemical, they should accompany the laboratory personnel wearing protective equipment and breathing apparatus to enter the scene again to do the identification.

- 2.10 Laboratory personnel fully equipped with breathing apparatus and other personal protective clothing and equipment (boots, rubber gloves, etc.) may then enter the scene to stop and clean up the spillage. Organic solvent should be recovered to waste solvent container. Acid/alkali after neutralization can be flushed down the sinks or floor drains with water.
- 2.11 When there is injury and/or casualty, appropriate first aid should be applied and Administration Standing Instruction (ASI)/12 should be followed.
- 2.12 In handling the spilled chemical, the procedure in the Safety Code of Practice (SCOP)/87 and relevant Material Safety Data Sheet should be followed. No single person should carry out the job. Advice from the CGC or his deputy should be sought. Those persons who are responsible for cleaning up the spilled chemical must decontaminate their body, clothing and equipment immediately after leaving the scene.
- 2.13 The CGC or his deputy is responsible for the supervision on the clean up work. The affected area should not be considered safe until declared as such by the CGC or his deputy.

**3. D.G. STORES CHEMICAL SPILLAGE CONTROL AND EVACUATION PROCEDURE <<<SGC title changed to CGC, SCE title changed to COE & CE title changed to SOE**

- 3.1 When a massive spillage occurs, the person(s) first discover the incident should evacuate and close the door of the D.G. Stores Room. He/She should guard the entrance at a safe location, until the Fire Team arrives to prevent other people from entering the room and at the same time call for help from anyone nearby and report the incident to the shift SOE in CCR1 (Pax 5410 or emergency hotline 5333).
- 3.2 The person making the report must clearly state the following:
- a. location of the room in which chemical spillage has occurred;
  - b. nature of the spilled chemical if it is known;
  - c. extent of the chemical spillage; and
  - d. name, department, section and telephone number.
- 3.3 Upon receiving the chemical spillage report, the shift SOE in CCR1 in CCR should:
- a. note down all the details given (items 3.2 a-d) and then immediately;
  - b. inform the following persons:
    - F&S Control Room (Pax 5361) <<<Pager 062 deleted
    - Shift Fire Team Captain (OPS)
    - CGC (Pax 5202) <<<Pager 057 deleted
    - COE (CCR1)

- 3.4 The person(s) discovering the incident/making the report should wait in the vicinity at a safe distance and at an up-wind position until the firemen arrive and should not leave unless instructed by the CGC or his deputy or the shift Fire Team Captain (OPS).
- 3.5 Security should cordon off the scene with a minimum distance of 25 m.
- 3.6 Only firemen, equipped with breathing apparatus and suitable protective clothing, can open the door to inspect the extent of spillage. Firemen on inspecting the scene should note any details on containers of the spilled chemical and report to CGC or his deputy or shift Fire Team Captain (OPS) upon leaving the scene. If the Firemen could not positively identify the spilled chemical, they should accompany laboratory personnel wearing protective equipment and breathing apparatus to enter the scene again to do the identification.
- 3.7 Should spillage of flammable liquid occur and the liquid has not been ignited, the ignition sources should be isolated and the wind direction should be noted by F&S. Sufficient standby jets should be laid out to cover possible ignition or explosion risk.
- 3.8 When spillage of chemicals gives off flammable and/or toxic gases/vapour, all other personnel in the vicinity of the affected area should be kept away at a safe distance and at an up-wind position.
- 3.9 Laboratory personnel, fully equipped with breathing apparatus and other personal protective clothing and equipment (boots, rubber gloves etc.) may then enter the scene to stop and clean up the spillage. Because of the massive quantities that may be involved, it is best to recover as much as possible of the spilled liquid in empty containers and then neutralize/clean up the residue on floor.
- 3.10 Waste chemicals recovered will be subsequently handled by Chemistry Section.
- 3.11 When there is injury and/or casualty, appropriate first aid should be applied and ASI/12 should be followed.
- 3.12 In handling the spilled chemical, the procedure in the SCOP/87 and relevant Material Safety Data Sheet should be followed. No single person should carry out the job and advice from CGC or his deputy should be sought. Those persons who are responsible for cleaning up the spilled chemical must decontaminate their body, clothing and equipment immediately after leaving the scene.
- 3.13 The CGC or his deputy is responsible for the supervision on the clean up work. The affected area should not be considered safe until declared as such by the CGC or his deputy.

**4. PLANT CHEMICAL SPILLAGE CONTROL AND EVACUATION  
PROCEDURE <<<SGC title changed to CGC, SCE title changed to COE & CE title changed to SOE**

- 4.1 Spillage of chemical may occur in various chemical plants such as Demineralization Plant, Effluent Treatment Plant, FGD Waste Water Treatment Plant and Acid Cleaning Plant. Spillage can either occur at the chemical tanks, pumps or associated piping.

- 4.2 Upon discovery of a chemical spillage, a person who is familiarized with the plant operation procedure can try to stop the spillage by shutting off relevant isolation valves (including the tank farm drain valve) if the situation is SAFE to do so. No matter the isolation is successful or not, he/she should report it to the shift SOE in CCR1 (Pax 5410 or emergency hotline 5333) without delay.
- 4.3 When making the report, he/she must clearly state the following:
- a. location of the plant where the chemical spillage occurs;
  - b. nature of the spilled chemical if it is known;
  - c. extent of the chemical spillage; and
  - d. name, department, section and telephone number.
- 4.4 Upon receiving the chemical spillage report, the shift SOE in CCR1 should:
- a. note down all the details given (items 4.3 a-d) and then immediately;
  - b. inform the following persons:
    - F&S Control Room (Pax 5361) <<<Pager 062 deleted
    - Shift Fire Team Captain (OPS)
    - CGC (Pax 5202) <<<Pager 057 deleted
    - COE (CCR1)
- 4.5 The person(s) who discover the incident or make the report should wait in the vicinity at a safe distance and at an up-wind position until the firemen arrive. He/She should not leave the scene unless instructed by the CGC or his deputy, or the shift Fire Team Captain (OPS).
- 4.6 Security should cordon off the scene with a minimum distance of 25 m.
- 4.7 Only firemen, equipped with breathing apparatus and suitable protective clothing, can approach/enter the scene for inspecting the details of spillage. Before entering the scene, make sure the tank farm drain, if any, is closed so as to confine the impact. Firemen should then report the condition to the CGC or his deputy, or the shift Fire Team Captain (OPS) who should take appropriate steps to prevent the spilled chemicals from entering storm drains or leaking into the sea. Use sorbant/sand to confine the leakage if necessary.
- 4.8 In case the spillage is serious and cannot be stopped by shutting off the relevant isolation valves (e.g. valve is passing), the leakage where applicable, may be stopped/minimized by using insertion pad or the Vetter set high pressure sealing system. If the spillage creates a fountain of liquid, firemen should use water jet to counteract the fountain so that mist produced can be minimized.



- 4.9 After the spillage is stopped or minimized, laboratory personnel, fully equipped with personal protective clothing and equipment may enter the scene to clean up the spillage. Because of the massive quantity that may be involved, the best practice is to recover as much as possible the spilled liquid in empty containers and then neutralize/clean up the residue on the floor.
- 4.10 Waste chemical recovered shall be handled by Chemistry Section.
- 4.11 When there is injury and/or casualty, appropriate first aid should be applied and ASI/12 should be followed.
- 4.12 In handling the spilled chemical, the procedure in the SCOP/87 and relevant Material Safety Data Sheet should be followed. No single person should carry out the job and advice from the CGC or his deputy should be sought. Those persons who have entered the scene must decontaminate their body, clothing and equipment immediately after leaving the scene.
- 4.13 The CGC or his deputy is responsible for the supervision on the clean up work. The affected area should not be considered safe until the equipment is proved free of leakages.

**5. CHEMICAL SPILLAGE (DURING TRANSPORTATION) CONTROL AND EVACUATION PROCEDURE** <<<SGC title changed to CGC, SCE title changed to COE & CE title changed to SOE

- 5.1 Whenever chemical spillage occurs during transportation, the driver/operator should immediately turn off the engine of the transportation vehicle.
- 5.2 If the spillage is minor, the driver/operator may attempt to stop/confine the spillage in case it is considered SAFE to do so. He/She should wear adequate personal protective equipment in handling chemical spillage. The case should then be reported to the shift SOE in CCR1 (Pax 5410 or emergency hotline 5333) immediately afterwards.
- 5.3 In case of a major chemical spillage, the case should be reported to CCR immediately.

When making the report, the person must clearly state the following:

- a. location where the chemical spillage occurs;
  - b. nature of the spilled chemical if it is known;
  - c. extent of the chemical spillage; and
  - d. name, department, section and telephone number.
- 5.4 Upon receiving the chemical spillage report, the shift SOE in CCR1 should:
- a. note down all the details given (items 5.3 a-d) and then immediately;

- b. inform the following persons:
- F&S Control Room (Pax 5361) <<<Pager 062 deleted
  - Shift Fire Team Captain (OPS)
  - CGC (Pax 5202) <<<Pager 057 deleted
  - COE (CCR1)

- 5.5 The person(s) who discover the incident or make the report should wait in the vicinity at a safe distance and at an up-wind position until the firemen arrive. He/She should not leave unless instructed by the CGC or his deputy, or the shift Fire Team Captain (OPS).
- 5.6 Security should cordon off the scene with a minimum distance of 25 m.
- 5.7 For spillage of liquid, the firemen equipped with breathing apparatus and suitable personal protective equipment should place the container with the leakage point facing upward. Adequate quantity of sorbant/sand should be used to guard any nearby storm drains against the spilled liquid so as to prevent it from entering the sea. Firemen should then report to the CGC or his deputy, or the shift Fire Team Captain (OPS) the identity of the spilled chemical. If the firemen cannot positively identify the spilled chemical, they should accompany laboratory personnel equipped with suitable personal protective equipment to enter the scene again to do the identification.
- 5.8 In case of spillage of chemical powder, the firemen should immediately cover the powder with a plastic sheet so as to minimize its lifting by wind.
- 5.9 For spillage of liquid nitrogen, all personnel should be evacuated well outside the foggy area and nobody should attempt to enter the scene for whatever purpose. Keep the area well ventilated and remedial work to stem the flow of liquid or gas should not be undertaken until it is safe to do so. Call the gas supplier for assistance if necessary.
- 5.10 When spillage of chemicals gives off flammable and/or toxic gases/vapour, all other personnel in the vicinity of the affected area should be kept away at a safe distance and at an up-wind direction. Firemen should lay out sufficient standby water jet to guard against possible ignition or explosion risk.
- 5.11 Laboratory personnel who are fully equipped with breathing apparatus and protective clothing and equipment should then enter the scene to clean up the spillage. Recover as much as possible the spilled liquid with an empty container and then neutralize/clean up the residue on the floor.
- 5.12 Waste chemical recovered shall be handled by Chemistry Section.
- 5.13 If there is an injury and/or a casualty, appropriate first aid should be applied and ASI/12 should be followed.

5.14 In handling the spilled chemical, the procedure in the SCOP/87 and relevant Material Safety Data Sheet should be followed. No single person should carry out the job and advice from the CGC or his deputy should be sought. When handling chemical spill, those persons should restrain to a limited area to minimize cross contamination. Persons who leave the scene must immediately decontaminate their body, clothing and equipment.

5.15 The CGC or his deputy is responsible for the supervision on the clean up work. The affected area should not be considered safe until declared as such by the CGC or his deputy.

**6. DRILL <<<SGC title changed to CGC**

Drill should be organised by the CGC and Fire & Security Officer and carried out at least once a year to familiarize with the above procedures.

/bc

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Detail Distribution List : GEN; T&D; PD; HR; IT; PA; TD; GCD/Warehouse & Logistics Section (Lamma)