



# **Company Emergency Response Team Audit Experience and Lessons**

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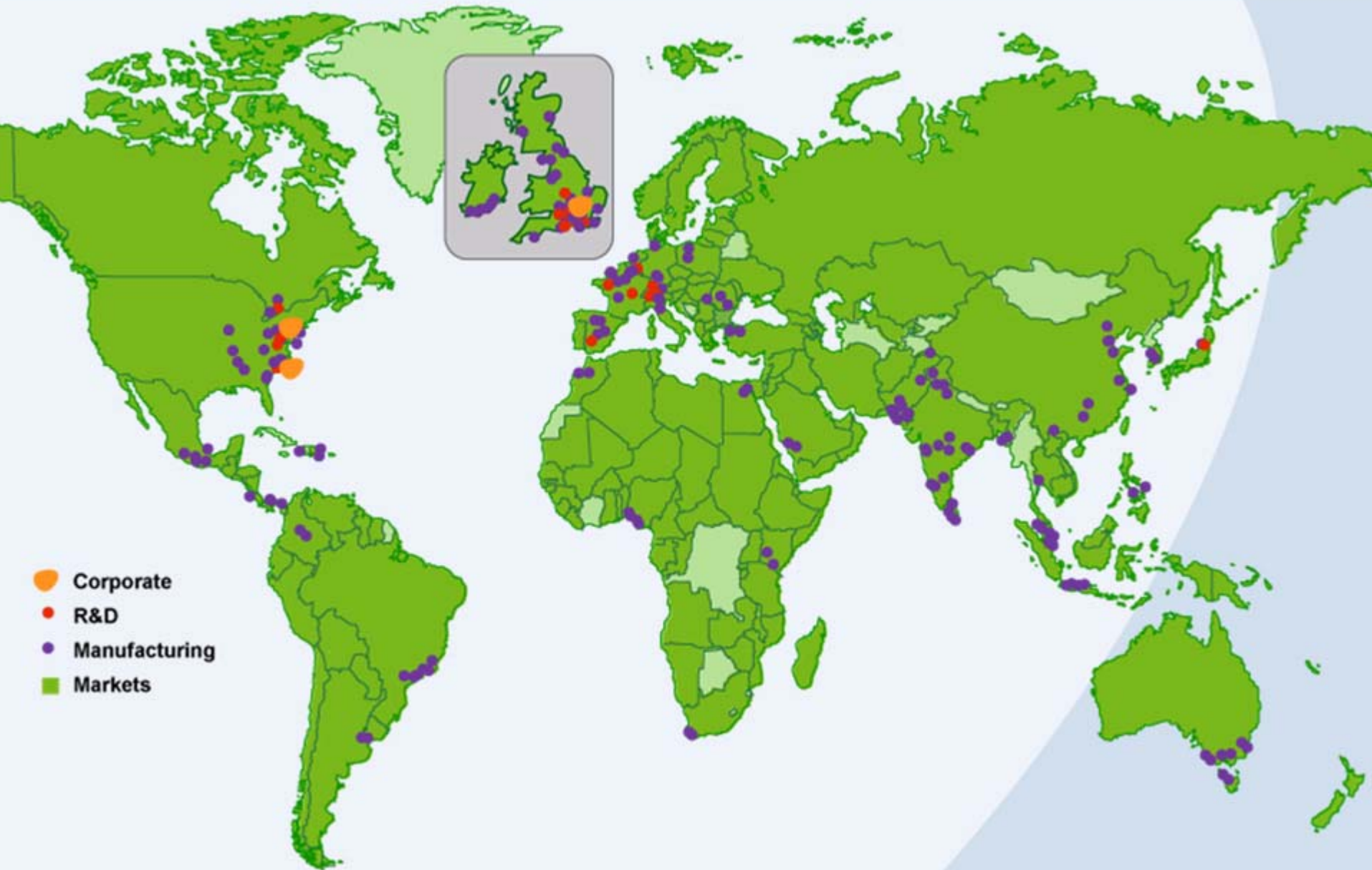
# Outline of Presentation

- Brief overview of GSK in Singapore
- CERT formation and challenges
- Benefits of CERT to GSK emergency preparedness
- Lessons from CERT audit
- Feedback to SCDF

# GSK Mission

**Our global quest is to improve the quality of human life by enabling people to do more, feel better and live longer.**

# Where Are We?



Our International region covers 80% of the world's population

# GSK Pharmaceutical Products

A leader in four major therapeutic areas :

- Anti-infectives
- Central Nervous System
- Respiratory
- Alimentary and metabolic

As well as a world leader in vaccines

# GSK IN SINGAPORE



# GSK BUSINESSES IN SINGAPORE

- Asia Pacific Headquarters
- Pharmaceuticals Business Unit
- Consumer Healthcare Business Unit
- Clinical Research & Development and Medical Affairs, Asia Pacific Headquarters
- Biologicals Clinical Research & Development Centre

## **Glaxo Wellcome Manufacturing Pte Ltd**

- **GI/Neurology CEDD at the Biopolis**
- **Biologicals bioprocessing collaboration at Science Park II**
- **Jurong, Primary Supply**
- **Jurong, R&D Chem Dev Pilot Plant**
- **Quality Road, Primary Supply**
- **Biologicals Vaccines Facility**

# Company Emergency Response Team (CERT)

The focus of this presentation is on the CERT practices at the GSK factory of Beecham Pharmaceuticals (Pte) Ltd at 38, Quality Road

# Why CERT is required ?

- Storage and use of highly flammable materials
  - Highly flammable liquids are stored in 29 bulk tanks in the tank farm (total = 870,000 litres)
  - 250 drums of organic solvents and reagents are kept in the Drum store (total = 50,000 litres)
  - Large amount of highly flammable solvents used for the manufacturing process in two production plants
  - two solvent recovery plants recovered about 85% of waste solvent generated from the two plants

While CERT is a requirement under the Fire Safety (Petroleum And Flammable Materials) Regulations 2005 for any premises storing more than 5,000 litres of flammable materials, GSK has established and maintained an in-house CERT since the company started its operation back in 1972.

# CERT Formation

- Site Main Controller (SMC) – Head of Production
- Site Incident Controller (SIC) – Production Lead
- Fire & Rescue Team - 8 production technicians from each shift
- First Aid Support – 4 technicians from each shift plus 2 day staff
- Fire Wardens – available for each building
- Roll-call Leaders – appointed to take roll call of employees, contractors and visitors during evacuation

# Formation of CERT

<b>F&amp;R and FA resources per shift</b>	<b>CERT</b>	<b>First Aid</b>	<b>Total</b>
<b>Trained</b>	<b>10</b>	<b>4</b>	<b>14</b>
<b>First Response</b>	<b>8</b>	<b>2</b>	<b>10</b>
<b>Back-up</b>	<b>2</b>	<b>2</b>	<b>4</b>
<b>Day Staff</b>		<b>2</b>	<b>2</b>

## 8 Men 1st Response

<b>1</b>	<b>x</b>	<b>Shift Team Leader</b>	<b>-</b>	<b>Leader (AIC)</b>
<b>2</b>	<b>x</b>	<b>Prod Tech</b>	<b>-</b>	<b>Conduct Search &amp; Rescue</b>
<b>3</b>	<b>x</b>	<b>Prod Tech</b>	<b>-</b>	<b>Operate hose / fire support</b>
<b>2</b>	<b>x</b>	<b>Prod Tech</b>	<b>-</b>	<b>Hazmat</b>

## Other Support Duties

<b>1</b>	<b>x</b>	<b>Mechanical Tech</b>	<b>-</b>	<b>Run Fire Pump</b>
<b>1</b>	<b>x</b>	<b>Electrical Tech</b>	<b>-</b>	<b>Sprinkler Operation</b>

# Challenges In Ensuring CERT Competency

Key challenges: Fire & Rescue Equipment and Training

- **Fire Wagon**

- A complete fire & rescue equipment.
- Mobile & move readily to incident location.

Two units of fire wagon are placed strategically on site.



# Challenges In Ensuring CERT Competency

## ● Fire & Rescue Training

The production plan cycle consists of two months of full manufacturing followed by one to two weeks shutdown for maintenance. To avoid incurring excessive overtime cost, all training will be scheduled during plant shutdown periods.

Fire & rescue training for CERT can only be conducted every two months when the plant is not in operation.

Hence training is prioritised based on the Training Needs Analysis faced challenges in setting priorities and delivering the training plan.

Click [here](#) Fire Training Programme

# Challenges In Ensuring CERT Competency

- **Practical Drills & Desk-top Exercises**

The best way of ensuring competency of CERT is through practical drills and emergency desk-top exercises.

GSK conducts two practical drills and two desk-top exercises annually to cover all the four shift teams. One of the drills will be conducted out of normal working hours or on weekend.

# Benefits of CERT to GSK emergency preparedness

- **Protect lives and properties**

- 1) Our moral obligation to staff and their families.
- 2) Enhance protection of lives and assets. CERT serves to supplement the site fire protection systems (e.g. automatic water sprinkler and deluge systems) by operating adjacent fire monitors or setting up handheld fire monitor/branch as well as rendering the rescue of casualties when required.

# Water monitors activated to provide cooling to adjacent storage tanks



# Casualties rescued by CERT members while SCDF searched for more casualties

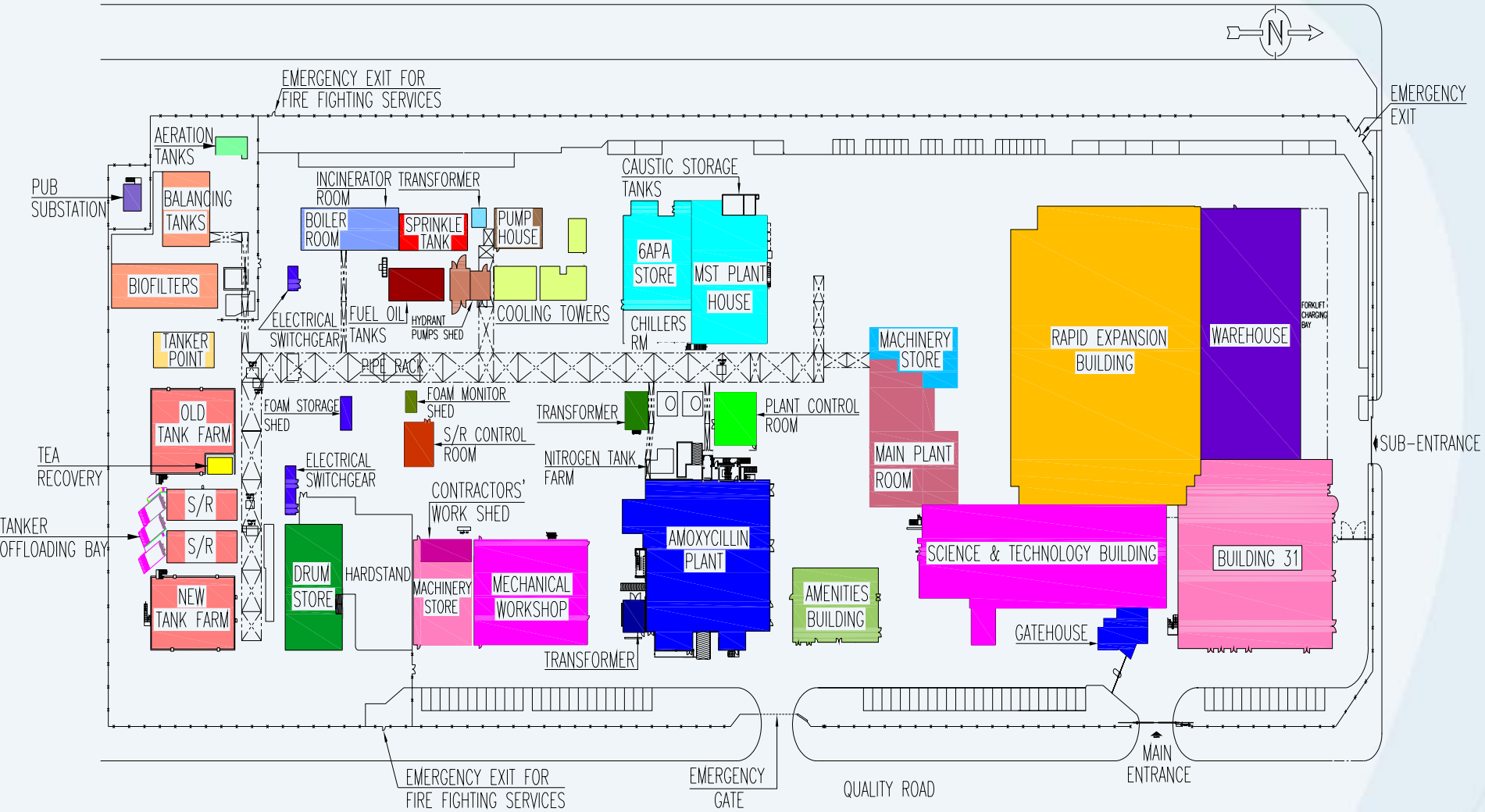


# Benefits of CERT to GSK emergency preparedness

- **Business Continuity**

- 1) Timely response of CERT will enable the fire to be controlled at its incipiency stage and thus reducing the loss of property and production. This will enhance the security of supply of pharmaceutical compounds to our customers by minimising business interruption.
- 2) Lower the insurance premium of the business.

# Factory Layout Plan



# CERT Audit on 8 May 2008 – Exercise Scenario

- **Fire**

A flash fire occurred when welding sparks ignited a small amount of MIBK (a highly flammable solvent) leaking from the manifold of F-6656 at the Tank Farm Area.

- **Casualties**

Two “dummy” were placed inside the bunded area (to be rescued by SCDF) while another two contractors acted as casualties and left outside (to be rescued by CERT)

**A simulated fire  
at F-6656**



# Lessons from CERT Audit

- **Incident verification and sizing up**

The SIC tasked the CERT Team Leader to conduct appreciation of the situation (AOS) after the CERT had gathered at the Assembly Area. However, AOS was delayed for 2 minutes as the CERT Team Leader (Shift Team Leader) in BA and fire suit had waited for another CERT member to complete donning BA set before getting into the incident site.

**Action by GSK:**

AOS must be conducted quickly by the SIC to make an assessment and prioritise tasks so that when the other CERT members arrived immediate deployment can be done.



# Lessons from CERT Audit

- **Activation and Response:**

The CERT gathered at the Assembly Area with the emergency equipment wagon within 1 minute and 35 seconds.

**No further action required by GSK.**

# Lessons from CERT Audit

- **PPE**

The CERT members were relatively slow in donning SCBA sets and fire suits.

**Action by GSK:**

Fire Officer to conduct SCBA refresher training for CERT.



# Lessons from CERT Audit

- **Conducting Mitigation Operations:**

- 1) Fire fighting tactics employed were good by operating fire monitors to cool the neighbouring tanks etc. However, casualty management can be improved. Four visible casualties lying outside the bund wall were by-passed by the CERT who were more concerned with fire fighting operations. Rescuers coming across nearest casualties should evacuate them immediately.
- 2) The two casualties rescued and evacuated to First Aid Point (FAP) were not decontaminated.

## **Action by GSK**

Fire Officer to remind CERT on prompt rescue and decontamination of casualties.



# Lessons from CERT Audit

- **Conducting Mitigation Operations:**

3) Water curtain not used to protect CERT members while rescuing casualties.

## Action by GSK

Fire Officer to emphasize the protection of CERT members during rescue operation in the fire training programme.

Lessons from CERT Audit



# Lessons from CERT Audit

- **Incident Command Post (ICP)**

SMC managed the emergency at the Control Center but did not log in the key activities and response.

**Action by GSK:**

SMC to ensure that event log is in use to capture all activities including resources deployed at the operational ground, roll call status, notification of neighbours, liaison with authorities, etc



# Lessons from CERT Audit

- **Linking with SCDF**

The security staff led SCDF to the FICP where the SIC provided relevant information on the incident to SCDF. The SIC did not lead the SCDF Commander into the incident site.

**Action by GSK**

SIC to note that since the CERT Team Leader was managing the ground operations for this incident, the latter should lead the SCDF commander into the incident area.

- **Support Operations**

Evacuation was carried out by the fire warden with all staff accounted for. After handing over the operations to SCDF, the ERT withdrew from the incident site.

**Action by GSK**

CERT should continue to assist SCDF till the end of operation.

# Lessons from CERT Audit

- **Other proposals by SCDF:**

The site factory layout plan should be available in the Fire Wagon for reference and strategic planning if required between the SCDF Ground Commander and SIC.



- **Final audit Assessment by SCDF – Passed**

Lessons from the audit had been shared with the other shift CERT members.

# Feedback to SCDF

- **Areas that SCDF have done well**

1) Advance notice was given to the company.

GSK received notice of CERT audit about two months prior to actual audit. This has provided GSK with sufficient time to adjust its production plan to accommodate for the audit.

2) SCDF conducted briefing for CERT prior to and immediately after the audit.

This allows GSK to seek clarification with SCDF regarding the audit requirements, audit findings and areas for improvement.

# Feedback to SCDF

- **Proposed area for Improvement**

- 1) Spark Arrestor for SCDF appliances and ambulances**

SCDF fire appliances and ambulances should be installed with spark arrestor to enable the vehicles to drive into any hazardous areas safely.

# Spark Arrestor



Demarcation  
for high fire  
risk area

Spark  
arrestors are  
available  
in the cabinet  
for installation  
on vehicles  
entering  
high fire risk  
area

# Spark Arrestor



To be installed onto  
the vehicle exhaust  
pipe

# CERT & SCDF – A successful CERT Audit

