



Cross Border Nuclear Safety Emergency Governance

Daya Bay Contingency Plan



**Security Bureau
Hong Kong Special Administrative Region Government**



Cross Border Nuclear Safety Emergency Governance

- Nuclear Power Stations at Daya Bay
- Other nuclear power stations in Guangdong Province



Nuclear Power Stations at Daya Bay





Nuclear Power Stations at Daya Bay

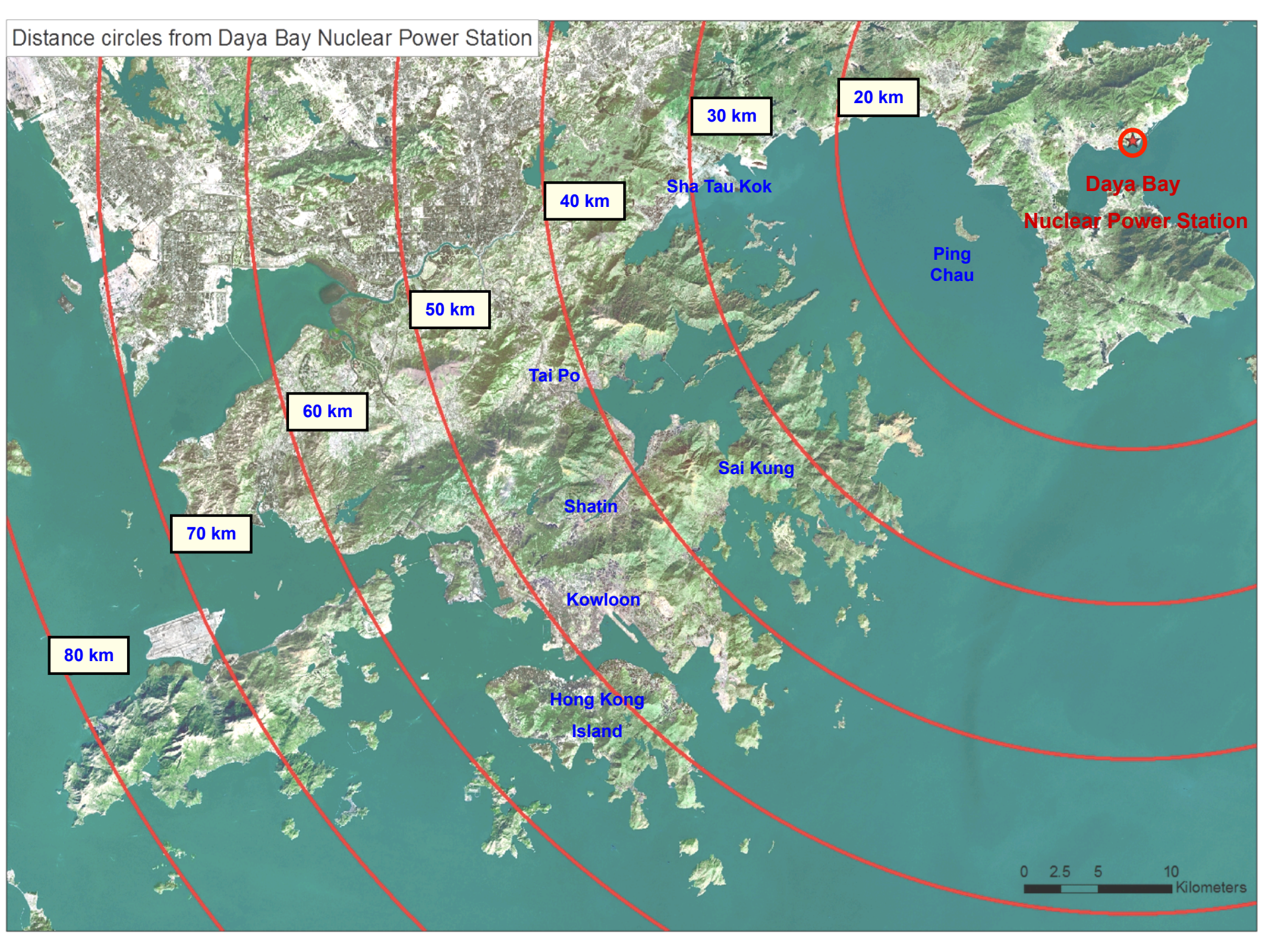
Two Power Stations

- Guangdong Daya Bay Nuclear Power Station
- Ling Ao Nuclear Power Station

Location

- Daya Bay in Longgang District, Shenzhen
- 12 km Northeast of Hong Kong (Ping Chau)
- 50 km from Tsimshatsui

Distance circles from Daya Bay Nuclear Power Station



**Daya Bay
Nuclear Power Station**

Ping
Chau

Sha Tau Kok

40 km

30 km

20 km

50 km

Tai Po

60 km

Sai Kung

70 km

Shatin

Kowloon

80 km

Hong Kong
Island

0 2.5 5 10 Kilometers

Other nuclear power plants in Guangdong Province

- Newly built or under planning or construction
- Yangjiang – 240 km from HK
- Taishan – 130 km from HK
- Lufeng – 180 km from HK





Daya Bay Contingency Plan (DBCP)

- Based on 1987 Consultancy Study by the UK Atomic Energy Authority
- In place since 1994
- Set out emergency measures to be taken in Hong Kong in the event of a nuclear accident which may result in release of radioactive material off-site
- Review conducted in 2012 in light of the Fukushima accident



Daya Bay Contingency Plan (DBCP)

- Notification of nuclear incidents
- Radiation monitoring
- Consequence assessment
- Emergency response
- Public information



Notification of Nuclear Incidents

Notification by Guangdong Authorities

- Official notification channel between HKSAR and Guangdong
 - HK : Security Bureau
 - Guangdong : PEACO (Prevention and Emergency Administrative Commission Office of Guangdong Province for Nuclear Accident of Civil Nuclear Facility)



Notification of Nuclear Incidents

Notification by Guangdong Authorities

- Follow IAEA's classification system:
 - Emergency standby
 - Plant emergency
 - Site emergency
 - Off-site emergency



Notification of Nuclear Incidents

Notification by Guangdong Authorities

- Off-site emergency : immediate
- Site emergency : within two hours of the accident
- Plant emergency and emergency standby : within 24 hours

廣東省核管辦



Notification of Nuclear Incidents

Notification by IAEA

- United Nations Convention on Early Notification of a Nuclear Accident
- State notification to IAEA
- HKO to receive information from IAEA





Radiation Monitoring



Environmental Radiation Monitoring Programme

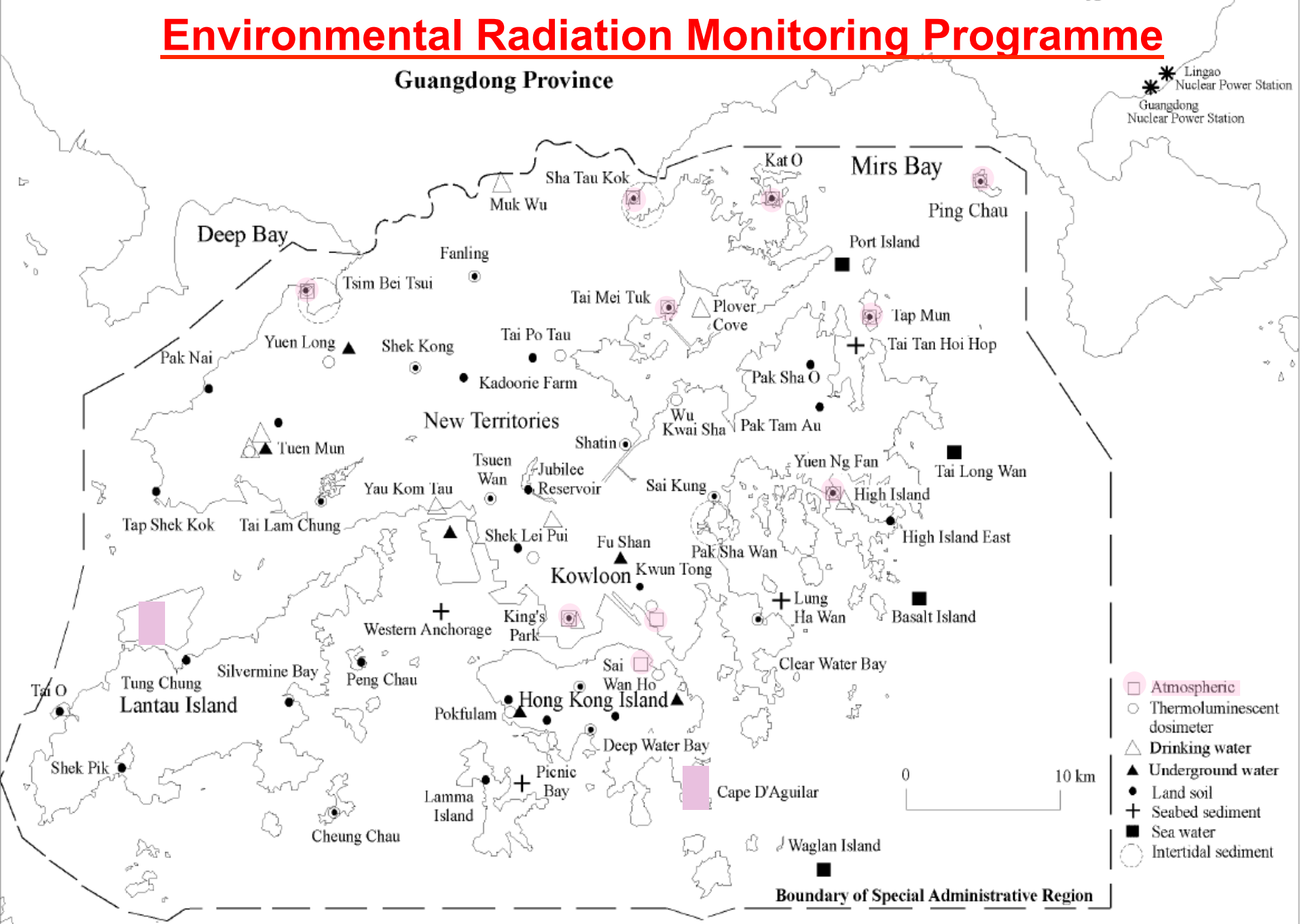
- Run by Hong Kong Observatory (HKO)
- Radiation monitoring network with 12 radiation monitoring stations across the territory
- Aerial monitoring system
- Radiological survey



Environmental Radiation Monitoring Programme

Guangdong Province

 Lingao Nuclear Power Station
 Guangdong Nuclear Power Station



- Atmospheric
- Thermoluminescent dosimeter
- Drinking water
- Underground water
- Land soil
- Seabed sediment
- Sea water
- Intertidal sediment

Boundary of Special Administrative Region



Radiation Monitoring

- Testing of environmental samples
 - Drinking water
 - Sea water
 - Underground water
 - Soil
 - Sediment
 - Foodstuff





Radiation Monitoring

Online Water Contamination Monitoring System

- Run by Water Services Department (WSD)
- Two identical systems at Muk Wu Pumping Station (near Man Kam To)
- Monitor incoming water from Guangdong
- HKO and WSD alerted on detection of abnormalities





Radiation Monitoring

Livestock Contamination Monitoring System

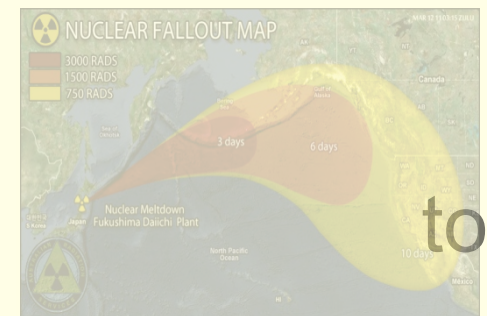
- Run by Food and Environmental Hygiene Department (FEHD)
- Monitor the radioactivity of livestock at Man Kam To and Lok Ma Chau Control Points and Sheung Shui Slaughterhouse
- Screening of imported poultry
- Routine food screening



Consequence Assessment

Accident Consequence Assessment System (ACAS)

- Computerised system based on real-time meteorological data, information on radiological releases, etc
- Simulate the dispersion of radiological releases
- Predict the radiation dose to public





Possible Consequences

- Exposure to radioactive plume
- Ingestion of contaminated foodstuff and drinking water
- Contaminated persons and cargos





Emergency Response

Activation of DBCP

- Observation Level ← **Emergency Standby**
- Ready Level ← **Plant Emergency**
- Partial Activation Level ← **Site Emergency**
- Full Activation Level ← **Off-Site Emergency**





Emergency Response - Countermeasures

Exposure to Radioactive Plume (within 20km Emergency Planning Zone)

- Sheltering
- Evacuation
- Distribution of iodine tablets





Emergency Response - Countermeasures

Ingestion of Contaminated Foodstuff and Drinking Water

- Monitoring of food
- Monitoring of livestock and poultry
- Monitoring of water





Emergency Response - Countermeasures

Ingestion of Contaminated Foodstuff and Drinking Water

- Mainland authorities will monitor food produced within the 50km range from Daya Bay
- Stop export of contaminated food to HK



Emergency Response - Countermeasures

Contaminated Persons and Cargos

- Boundary control measures
- Monitoring of incoming cargos
- Monitoring / Decontamination of persons who have been within the hot zone





Public Information

- Information Policy Committee to advise on media strategy
- Combined Information Centre
- Press briefing
- Overseas information
- Dedicated DBCP Website
- To provide timely and accurate information to public





Cross-boundary Cooperation

HKSARG in Close Collaboration with Relevant Mainland Authorities:

- Enhance cross-boundary nuclear safety
- Strengthen notification mechanisms
- Maintain smooth flow of information
- Enhance emergency preparedness on both sides
- Strengthen public confidence



Cross-boundary Cooperation

Regular Exchange and Cooperation

- Annual review with Guangdong authorities
- Regular meetings and seminars
- Participation in exercises
- Exchange of environmental radiation monitoring results between Hong Kong and Guangdong
- Participation in IAEA events as part of Chinese delegation



Public Trust Building in Emergency Governance

- Emergency Preparedness
 - Emergency Response System
 - Daya Bay Contingency Plan
 - Effective and efficient response
 - IAEA standards and international best practices
 - Regular training, review and exercises



Public Trust Building in Emergency Governance

- Cross-boundary Collaboration
 - Notifications, communication and cooperation e.g. drills & exercises, training, IAEA conferences, etc.
- Public Communication and Education
 - Information transparency
 - Education programmes on nuclear safety
 - DBCP website





「居安思危」

**“be prepared for danger
in times of peace”**