Nuclear and Radiological Emergency Preparedness and Response Capability

The Department of Science and Technology – Philippine Nuclear Research Institute (DOST-PNRI) maintains a National Radiological Emergency Preparedness and Response Plan (RADPLAN), which was put to the test during the Fukushima Nuclear Power Plant Accident in Japan in 2011.



Training course participants perform exercise on surface contamination monitoring and decontamination.

Purpose of the RADPLAN

The RADPLAN aims to establish an organized emergency response capability for timely and effective response actions by various government and non-governmental organizations during peacetime nuclear or radiological emergency. The National RADPLAN is currently being revised and updated based on the lessons learned from the Fukushima-Daiichi nuclear power plant accident, and on the recent developments concerned with nuclear security and terrorism and in the General Safety Requirements (GSR) Part 7 of the International Atomic Energy Agency (IAEA).



PNRI conducts Follow-up Training Course on Nuclear Emergency Preparedness and Response.



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Environmental Radiation Monitoring

The Department of Science and Technology -Philippine Nuclear Research Institute (DOST – PNRI) monitors radiation in the environment as part of its radiological surveillance program

for public protection and safety. This program is undertaken through measurement of ambient gamma radiation and analysis of the radioactivity of environmental samples collected in different parts of the Philippines.



Marine Radiotion Monitoring

The Department of Science and Technology - Philippine Nuclear Research Institute (DOST - PNRI) has been undertaking marine radioactivity measurements to assess the possible impact of any radioactive discharges brought about by the Fukushima Daiichi Nuclear Power Plant in 2011.



Samples of seawater, sediment and biota were collected in sampling locations along the Pacific seaboard and in the West Philippine Sea. The samples collected are analyzed for presence of radio-nuclides cesium-134 and cesium-137, which are fission products and indicators of radionuclide contamination following a nuclear accident.

ASPAMARD

Data generated from this project are submitted to the Asia-Pacific Marine Radioactivity Database (ASPAMARD), which is a compilation of available data on key anthropogenic and natural radio-nuclides in seawater, sediment and biota in the seas located in the Asia-Pacific region. DOST – PNRI is the ASPAMARD focal point.

Management of CTBTO Stations in the Philippines

The Philippines, through the Department of Science and Technology – Philippine Nuclear Research Institute (DOST – PNRI) has been participating in the global monitoring of radiation released in the environment from nuclear testing and accidents as part of its commitment under the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

This commitment entails continuous management of the daily operation (24/7) and maintenance of the RN52 radionuclide monitoring station in Tanay, Rizal and the National Data Center at PNRI.

Significance of the CTBTO Stations

- Primary capabilities of the stations are for environmental radioactivity monitoring and nuclear emergency preparedness of the Philippines
- Radiological data from the stations can be used in the confirmation of occurrence of a nuclear event in the Asia-Pacific region.
- Can be used in other civil and scientific applications



Data from the RN52 Station helped PNRI in monitoring the radioactive plume as it passed through the Philippine Area of Responsibility (PAR) and in the monitoring of its possible implications to human health and the Philippine environment.

Establishment of On-line Environmental Radiation Monitoring System in the Philippines

DOST-PNRI is establishing a network of on line radiation monitoring system throughout the Philippines which will continuously measure radiation levels across the country and provide real-time information to emergency responders and decision makers. Nationwide radiation levels will be monitored with automatic monitoring stations installed on different provinces, with initial five monitoring stations to cover the entire country.





The first radiation monitoring station located at the PNRI grounds started operation in December 2014.

Location of Monitoring Stations to be installed

The equipment to be installed will measure the ambient radiation levels in the environment, every 5 minutes for 24 hours in a day continuously. The radiation levels from the stations will be transmitted and accessed on-line to monitor increase in radiation levels during radiation emergencies.

Significance of Online Radiation Monitoring System

- Will strengthen the emergency preparedness and response capabilities during events leading to extensive release of radioactive substances to the air
- Timely actions can be undertaken during radiation emergencies to ensure the safety of the public