

The Australian Nuclear Science and Technology Organization (ANSTO) and the Philippine Nuclear Research Institute (PNRI) Collaboration on Nuclear Forensics and Border Protection

The Australian Nuclear Science and Technology Organization (ANSTO) and the Philippine Nuclear Research Institute (PNRI) signed a Memorandum of Understanding (MOU) last January 2021. The partnership of ANSTO and PNRI covers a wide range of applications, such as Nuclear Forensics, Emergency Preparedness, Border Security Protection, Environmental Protection, Radiation Safety, and Advanced Materials and Technologies using neutron scattering and synchrotron radiation-based measurements. Both agencies celebrated the signing of the MOU with the Department of Science and Technology's (DOST) Secretary Dr. Fortunato "Boy" T. de la Peña highlighting the signing of the MOU in the DOST Weekly Reports and Nuclear Australia, Quarterly Newsletter of the Australian Nuclear Association, featuring an article in the March 2021 issue.

One of the key areas of collaboration that has been highlighted in the MOU is in Nuclear Forensics, a field that is relatively new to the PNRI. But with the capability in nuclear technology of PNRI, and the partnership of ANSTO in terms of training and capacity-building, PNRI will be able to integrate into this field. Through the introduction of ANSTO, PNRI is now a member of the International Technical Working Group (ITWG) on Nuclear Forensics, led by the USA and Europe, and supported by the International Atomic Energy Agency (IAEA). In the 25th ITWG-Nuclear Forensics Conference last June 17, 2021, which was attended by participants from America to Asia, PNRI made a virtual presentation on the Nuclear Forensics Initiative in the Philippines. The ITWG-Nuclear Forensics community welcomed warmly the membership of the Philippines as Thailand and the Philippines are the only countries in the Southeast Asian region who are members of the international group.

As part of the activities of the ITWG-Nuclear Forensics, an international exercise on nuclear forensics capabilities called Collaborative Materials Exercise (CMX) is done wherein participating laboratories all over the world do a "mock" nuclear forensics exercise. For this year, the PNRI will join the CMX exercise in September 2021 and ANSTO, being senior members of the ITWG-Nuclear Forensics has extended their experience and are guiding the PNRI team who will be conducting the nuclear forensics investigation for the 1st time. Preparation of the workplan, processes and documentation were prepared by the PNRI CMX Team with consultation meetings with the ANSTO Team.

To fund the research initiatives and activities of PNRI in the area of Nuclear Forensics and Border Protection, the program "Nuclear Forensics for Border Protection and National Security" was included in its Long-Term Nuclear Research and Development Plan. Four (4) projects were included in the program, namely:

Project 1: Ammonium Nitrate (AN) and Explosives Characterization as a Link to the Source of Origin in PH and the SEA region

Project 2: Nuclear Forensics Capacity building for the Department of National Defense and the Philippine National Police

Project 3: Analysis on Radioactive Tracers on the West Philippine Sea

Project 4: X-ray Imaging and Nuclear Forensics for the detection of contraband at the Philippine Ports

All these projects are envisioned to be in close collaboration with ANSTO.

With ANSTO as the lead agency, and PNRI its partner, a Regional Cooperative Agreement (RCA) pre-concept proposal for the 2024-25 project cycle was submitted last August 2021 with the title, "Leveraging Nuclear Science and Technology to Strengthen Border and Nuclear Security". ANSTO (Australia) and PNRI (Philippines) were to jointly promote and coordinate this regional project to foster collaboration with interested RCA Government Parties to strengthen regional capability in areas including border security and nuclear forensics. Although the pre-concept proposal did not push through, other proposals are being crafted to strengthen and continue the ANSTO and PNRI collaboration.

Primary authors: SAMSON, Vallerie Ann (Philippine Nuclear Research Institute); Dr BLAGOJEVIC, Ned (Australian Nuclear Science and Technology Organisation)

Co-authors: Dr BAUTISTA, Angel VII (Philippine Nuclear Research Institute); Mrs SALABIT, Ma. Teresa (Philippine Nuclear Research Institute); Mrs RAMIREZ, Jennyvi (Philippine Nuclear Research Institute); Mr JAGONOY, Arvin (Philippine Nuclear Research Institute); Mr CABALLAR, Patrick Jay (Philippine Nuclear Research Institute); Mrs DINGLE, Cheri Anne (Philippine Nuclear Research Institute); Dr BULL, Tegan (Australian Nuclear Science and Technology Organisation)

Presenter: SAMSON, Vallerie Ann (Philippine Nuclear Research Institute)

Session Classification: Oral Session #1 – Legal Framework and the CPPNM/A

Track Classification: 1. Nuclear Forensics Capability Building: Initiation and Sustainability: 1.1 Lessons Learned and New Virtual Initiatives for Nuclear Forensics Capacity Building considering the pandemic