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## **Nuclear Forensics –An Integral Part of the Philippines’ National Response Plan for a Nuclear Security Event**

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Since the dropping of the first atomic bombs in Hiroshima and Nagasaki on August 1945, quoting the famous phrase, “the world has lived under the shadow of nuclear threat”. This was heightened by the Chernobyl nuclear accident in 1986 and magnified by the September 11, 2001 terrorist attack of the World Trade Center in the USA. Although the attack (more popularly termed as 911 attack) was not nuclear or radiological in manner, it imparted a worldwide chilling effect that such an act that is nuclear or radiological armed can be a possibility causing major damage and massive disruption. While the threat is global, nuclear security is a national responsibility. It is in this light that the Philippine Nuclear Security Plan was formulated by the Philippine Nuclear Research Institute (PNRI) specifically to address nuclear security and terrorism with nuclear forensic as an integral part of the plan.

Prior to the 911 attack, the Philippines was confronted by three (3) major internal security concerns: the local communist movement, the southern Philippines secessionist groups, and the home-grown and transnational kidnap for ransom groups, such as the Abu Sayyaf Group and others. To deter and overcome these threats, a ‘Strategy of Holistic Approach’ focused on the theme “Winning the Peace” was adopted under the National Internal Security Plan. However, after the 911 attack, the word ‘terrorism’ drastically changed the course of global and national security. The Philippines created its own definition and perspective on terrorism with the passage of Republic Act No. 9372 on March 6, 2007, An Act to Secure the State and Protect Our People from Terrorism, otherwise known as “The Human Security Act of 2007”. Included in this law as an act of terrorism is the use of any biological and/or chemical agent, or radioactive material, or nuclear device, explosive, firearm or other weapon, with the intent to endanger, directly or indirectly, the safety of one or more individuals or to cause great damage to property. With this new law, the National Plan to Address Terrorism and its Consequences was developed. Unfortunately, this plan was designed to cover hostage taking, bombing, sabotage, hijacking and piracy, but did not cover bioterrorism, chemical terrorism, radiological and nuclear terrorism, and cyber terrorism. As such, the Philippine Nuclear Security Plan (PNSP) was developed covering the three (3) strategy components of prevention, detection and response. Under the response strategy, a program to establish a forensic and investigation unit is included, as well as the development of plan and procedures to respond to incidents involving nuclear and other radioactive material, including seizure of such material by law enforcement authorities. The Nuclear Materials Research Section (NMRS) of PNRI was thus given the added function to “develop nuclear forensic analysis capabilities in support of nuclear material protection process so that in the event of an interdiction by Philippine law enforcement agencies involving illegal use or movement of radioactive material this capability may be used to develop and build a legal case against the perpetrators” . To date, several NMRS staff has undergone training on nuclear forensics taking advantage of offers from the International Atomic Energy Agency and other international organizations as part of the human resource development program of the PNSP.

Meanwhile, in 2003, the Megaports Initiative was established by the United State Government through the United State’s Department of Energy / National Nuclear Security Administration –Office of Second Line of Defense (USDOE/NNSA-SLD). The purpose of which is to screen container-cargoes for nuclear and other radiological materials being transported through the global maritime shipping network. In the Philippines, with financial and technical support from the USDOE/NNSA-SLD, radiation portal monitoring systems were installed at the Port of Manila, specifically at the South Harbor and Manila International Container Terminal. This will reduce the risk of illicit trafficking and thus preventing the acquisition and malevolent use of these nuclear and other radiological materials by terrorists.

In late 2011, PNRI staffs were instructed to inspect a suspected radioactive material that was seized during an operation by a government investigative agency since there had been reported news of smuggling incidents involving uranium in the Philippines as early as 2007. It was unfortunate however, that the suspected material was brought to the room where the PNRI staffs were planning on how to go through with the inspection at the crime scene. Fortunately, the yellowish metallic box bearing a U235 marking registered very low radioactivity. Evidently, there is a need for strengthening and reorientation of persons that will be involved in radiological crime scene investigations on the unique characteristics and required safety measures in the handling of radioactive materials, and more importantly, by equipping the PNRI with the basic instrumentation and skills in building the nuclear forensics capabilities of the Country.

## **Country and/or Institution**

PHILIPPINE NUCLEAR RESEARCH INSTITUTE

**Primary author:** Mr REYES, R. (Philippines)

**Co-authors:** Ms TABORA, E. (Philippines Nuclear Research Institute); Ms JULIETA, S. (Philippines Nuclear Research Institute); Ms LIM, W. (Philippines Nuclear Research Institute)

**Presenter:** Mr REYES, R. (Philippines)

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