

Nuclear Security Detection Architecture on National Nuclear Security Regulation –Case Study Indonesia

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Abstract

Nuclear Security Detection Architecture on National Nuclear Security Regulation - Case Study Indonesia. The objective of a nuclear security regime is to protect persons, property, society, and the environment from harmful consequences of a nuclear security event. The wide area of Indonesia's geographical condition, which consists of islands and waters (archipelagic country) becomes a challenge in conducting regulatory control on the utilization of nuclear energy, particularly from the aspect of nuclear security. The challenges on the oversight of nuclear security aspect become a concern both in the national and international levels if linked to potential acts of terrorism. The nuclear security begin to draw particular attention after an increasing number of terrorism threats increase some example of threats where are possible to occur anywhere with unpredictable time and method. Potential theft of nuclear materials to create IND (Improvised Nuclear Device), theft of radioactive materials to make RDD (Radiological Dispersal Device) and RED (Radiological Exposure Device), or potential act of sabotage both for nuclear facility/ installation, and transport of radioactive material or nuclear material. This oversight requires the integration of a nuclear security system and nuclear security measures described in the nuclear security detection architecture. Indonesia has established Radiation Portal Monitors (RPMs) in several main seaports to be used for the screening of individuals, vehicles, cargos or other entities for detection of illicit sources from or to the port. This review aims to determine and identify nuclear security architecture detection in national nuclear security regulation in Indonesia. This review uses literature review methodology through national nuclear security regulation, guidance from other countries, and IAEA publications. Nuclear security detection architecture is a framework that integrates the various technical and non-technical elements necessary to detect the illegal activities of nuclear material and other radioactive sources. Nuclear security detection architecture should be developed based on national nuclear security system or national detection strategy. The hierarchy of nuclear energy regulations in Indonesia is stipulated in Act No. 10 Year 1997. The regulation for nuclear security in Indonesia already exist, both at the level of government regulations (GR) and BAPETEN chairman regulations (BCR). There are two GRs related to nuclear security: GR No. 33 Year 2007 on the Safety Ionizing Radiation and the Security of Radioactive Sources and GR No. 54 Year 2012 on the Safety and Security of Nuclear Installations. At the level of BCR, there are BCR No. 1 Year 2009 on Physical Protection of Nuclear Instalation and Nuclear Material and BCR No. 6 Year 2015 on Security of Radioactive Sources. However the existing national nuclear security regulations in Indonesia may not describe prescriptively and specifically the concept of nuclear security detection architecture. Based on the obtained from gap analysis identification of national nuclear security regulations in Indonesia, there are several considerations to support the development of nuclear security detection architecture in Indonesia, they are (i) the development of a regulatory framework for national detection strategy or nuclear security detection architecture, (ii) the roles of the competent authorities on nuclear security systems and measures, and (iii) international cooperation to improve effectiveness related to the detection function. The development of a regulatory framework could consider the scope and national priorities, threats assessment, and assessment of the selection of nuclear security detection architecture. Threat assessment should be conducted to determine several things such as the amount of nuclear material and radioactive sources, enemy characterization (attributes, abilities, and tactics that can be used), strategic targets and locations, and locations where nuclear material and radioactive sources going in and out. The roles of the competent authorities is based on the duties and functions of each competent authority as well as cooperation and coordination mechanism among competent authorities.

Keywords: nuclear security, national, regulation, detection, architecture, development

Gender

Male

State

Indonesia

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Track Classification: CC: National nuclear security regulations