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Increasing Role of Nuclear Forensic to Support Nuclear Security Events Investigation in Indonesia

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The writing purpose are to identify the existing nuclear forensic capability and its role in nuclear security events investigation in Indonesia, compare them to IAEA recommendation and analyzing the gap for the improvement.

The scope are currently national capabilities, traditional and nuclear forensic, and also recommendation for the improvement.

The assessment of national capabilities in nuclear forensic is needed due to Indonesia is an archipelago country and located in the middle of the earth. So internationally, these made Indonesia to be one of the world trade lines, and nationally many of its trade is done by the sea line. We have a lot of access through the sea port, but not all sea ports have a real portal monitor. This could make possibility for the movement of illicit trafficking sources from one island to another, or could address Indonesia to be a transit point or even addressing Indonesia to be a target country for international illicit trafficking. Development of nuclear forensics also needed to enable international cooperation through nuclear forensics community, either through GICNT, nuclear forensics ITWG or through facilitation by the IAEA.

The method assessment by identify national capabilities based on: existing plan and procedures, ISE (Integrated Safety Evaluation) reports 2012 to IAEA, and also from the evaluation of national field exercise then compare them to international requirements and recommendations.

In order to achieve sustainable nuclear safety, nuclear security, which covered emergency preparedness aspect, Indonesia have made a national commitment to adhere to international treaty and convention. Since 2006 we established a national response organization related to nuclear events namely OTDNN. The stakeholder are from nuclear emergency preparedness and response, and also nuclear security. At the end of 2007, this organization established their joint procedure, which developed from stakeholder's procedure, but give attention to the radiation protection as well as radioactive safety and nuclear security. We also have had a regular exercise and drill based on this joint procedure in order to evaluate the existing capabilities and get feedback for its improvement. Based on our field exercise and drill, we still have weakness for the awareness of radiation aspect among the first responder. Therefore we need to make an arrangement how to respond effectively without destroy any traditional or nuclear forensic evidence.

Nuclear security is now become world issue and nuclear forensics is one component in an on-going national programme for nuclear security. In order to support our commitment, we are now in the beginning step to establish Indonesia Center of Excellence On Nuclear Security and Emergency Preparedness (ICONSEP). The primary role of ICONSEP is to facilitate the development of human resources and the provision of support services on several levels to ensure the long-term sustainability and effectiveness of nuclear security and nuclear emergency preparedness in Indonesia. For nuclear forensic development it also include the effort to combine the expertise of traditional forensic and nuclear forensic capability. Base on IAEA Nuclear Security Series No. 2, there are several aspects need to be improve, they are:

1. Capability in incident response. The Police will coordinate with BAPETEN and BATAN as the radiological expert. Our weakness are in the arrangement for the evidence holding site, since we don't have this arrangement yet and also the arrangement to transport the radioactive evidence. We also need to improve our capability in evidence collection, since collection of traditional forensic evidence might interfere with the collection of radioactive evidence.

2. Capability in nuclear forensic laboratory. So far only BATAN which has competent staff in handling radioactive contaminated evidence and also for current standard, but their instruments need to be re-assessed according to the latest technology. BAPETEN is on-going process to establish their laboratory. We also need to establish our national nuclear forensics library so we can determine ownership of the material as soon as possible.
3. Capability in nuclear forensic analysis and traditional forensic analysis, we need to improve our attribution capability since we very rarely deal to this kind of investigation.
4. Capability in nuclear forensic interpretation. Expert who have both expertise in radioactive material and traditional forensic analysis is very lacking. Therefore we need to develop our human resources to meet this requirement.

Based on these findings we need to make an action plan, the recommendation are:
 year 1 to 2 are development for the incident response capabilities;
 year 2 to 5 are development for national nuclear forensic library, resource development for competent staff and laboratory; and
 year 5 to 10 are human resource development for nuclear forensic analysis and interpretation.

Since the responsibility for nuclear security rests entirely with individual States, we need to develop our nuclear security system which cannot be separated from the nuclear forensic capabilities.

Country and/or Institution

Indonesia/ BAPETEN

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