

## INTERNATIONAL REGULATORY DEVELOPMENT PARTNERSHIP (IRDP)

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### 1. Introduction

Nuclear Energy enters a renaissance era. Several countries consider nuclear as one of their energy resources. For example at the present Vietnam just sign an agreement with Russia for their first nuclear power plants, Malaysia expected that the first nuclear power plant will be operated and commercially available in around the year of 2021. Thailand, Singapore and Indonesia also consider having nuclear power plant in the time frame around 2025.

Each country recently tries to prepare their regulatory infrastructure for their first nuclear power plant.

The problems are each country doesn't have enough human resource and experience in preparing the nuclear power plant regulations infrastructure. The remains regulations resource is from IAEA which are too general to implement and USNRC which are too detail and difficult to implement for the lack of human resources.

Therefore this International Regulatory Development Partnership (IRDP) could be the solutions for the demand of regulatory infrastructure preparations for those countries who's want to emerging nuclear power plant in their country.

### 2. Purpose of IRDP

The International Regulatory Development Partnership (IRDP) assists countries with emerging nuclear power programs in developing organizational and programmatic resources for regulatory oversight. The program consists of three principal elements:

- Assistance in the development of regulatory agency infrastructure: organization, staffing, training, and technical support.
- Development of a nuclear regulatory program: laws, regulations, and regulatory guidance.
- Development and delivery of training for regulatory agency management and staff.

All work is conducted in accordance with an action plan that is jointly developed by NRC contractor staff and the management of the participating regulatory agency.

### 3. Program and Product of IRDP

#### 3.1. Document Assistant

The program proceeds in two major steps: producing generally applicable generic documents and customizing these documents to the needs of each

country. Producing generic documents has principally been the responsibility of Advanced Systems Technology and Management, Inc. (AdSTM) staff, many of whom are former NRC managers with extensive regulatory experience. Customizing the documents is done by in-country regulatory personnel with support from AdSTM.

The program has used guidance produced by the International Atomic Energy Agency (IAEA) and by countries with nuclear regulatory experience; especially smaller countries such as Finland. The program has made extensive use of NRC documents, including the code of federal regulations (10CFR), the Standard Review Plan (NUREG-0800), regulatory guides, and review standards.

Here are several documents that have been produced from this program:

- G-OV-AP Action Plan
- G-OV-I Inspection
- G-OI-OS Organizational Structure
- G-OI-ST Staffing, Training, and Support
- G-OI-QP Qualification Program
- G-TR-S Siting Requirements
- G-TR-L Licensing
- G-RG-S Siting Review Guide
- G-RG-CP Construction Permits

#### 3.2. Training and Workshop Assistant

Early in the evolution of the IRDP, it was recognized that support to emerging regulatory programs had to go beyond consultation to agency management. It was important for the key safety and regulatory concepts to be engendered in the staff of the agencies at the earliest possible stage. IRDP committed to providing direct training as the most efficient and effective approach to achieving this goal. Training has become an increasingly important aspect of the program. The IRDP has developed and delivered a broad range of regulatory training programs. Development of new training modules is a key ongoing aspect of the program.

Here are several training program that have been conducted on this program:

- Nuclear Executive Workshop
- Fundamentals of Reactor Safety
- Fundamentals of Reactor Regulation
- Industry Codes and Standards
- Nuclear Quality Assurance
- Siting Requirements for Nuclear Reactors

#### 4. Possibility of Implementations IRDP in Indonesia

The International Regulatory Development Partnership (IRDP) has been introduced to BAPETEN chairman on August 8, 2010. Review of this IRDP program now has been conducted in BAPETEN in order to make several special framework programs.

##### 4.1. Document Assistant

Indonesia has been prepared the nuclear regulatory infrastructure for nuclear power plant since year 2005. The requirement has been produced mostly based on the IAEA guide and regulations.

In 2008, Indonesia Nuclear Energy regulatory Agency (BAPETEN) has been stipulated several regulations for site such as (reference from IAEA Safety guide):

- BAPETEN Chairman No.1 year 2008 on “Evaluation of Seismic Hazards for Nuclear Power Plants Safety Guide”
- BAPETEN Chairman No.2 year 2008 on “Evaluation of volcanologist for Nuclear Power Plants Safety Guide”
- BAPETEN Chairman No.3 year 2008 on “Dispersion of Radioactive Material in Air and Water and consideration of Population Distribution in Site Evaluation for Nuclear Power Plants Safety Guide”
- BAPETEN Chairman No.4 year 2008 on “Geotechnical Aspects of Site Evaluation and Foundations for Nuclear Power Plants
- BAPETEN Chairman No.5 year 2008 on “Meteorological Events in Site Evaluation for Nuclear Power Plants”
- BAPETEN Chairman No.6 year 2008 on “External Events Excluding Earthquakes in the Design of Nuclear Power Plants Safety Guide”

In 2009, Indonesia Nuclear Energy regulatory Agency (BAPETEN) has been stipulated several regulations for Limiting and conditions of NPPs operations including related with nuclear materials such as (reference from IAEA Safety guide):

- BAPETEN Chairman No.1 year 2009 on “Requirement for nuclear material physical protections”
- BAPETEN Chairman No.2 year 2009 on “DIQ Management”
- BAPETEN Chairman No.3 year 2009 on “Operational Limits and Conditions and

#### Operating Procedures for Nuclear Power Plants Safety Guide”

In 2010, Indonesia Nuclear Energy regulatory Agency (BAPETEN) has been stipulated several regulations for emergency preparedness of nuclear reactors including related with nuclear materials such as (reference from IAEA Safety guide):

- BAPETEN Chairman No.1 year 2010 on “Preparedness and Response for a Nuclear or Radiological Emergency Safety Requirements”
- BAPETEN Chairman No.3 year 2010 on Design of Nuclear materials management for nuclear power plant”.

All the BAPETEN chairman references are from IAEA regulations, there is a difficulties in creating the review guide since the IAEA regulations remains too general. Therefore there’s some opportunity in creating guide and review guide from IRDP by revise or adjust the chairman regulations.

##### 4.2. Training and Workshop Assistant

Up to now, several special training and workshop has been conducted related with siting for nuclear power plant cooperation’s with IAEA. However a comprehensive program which is offer in IRDP needs to implements.”

#### 5. Conclusion

The International Regulatory Development Partnership (IRDP) could assists countries with emerging nuclear power programs in developing organizational and programmatic resources for regulatory oversight.

Indonesia needs to implement IRDP on their regulations infrastructure preparations to make their regulations meaningful.

#### REFERENCE

- [1] Act No. 10/1997, BAPETEN, 1997.
- [2] NUREG 0800, Standard Review Plan for the review of SAR for NPPs, USNRC, 2007.
- [3] BAPETEN regulations year 2008-2010.
- [4] Internal meeting results 11August 2010 Washington DC with International Relations Team of USNRC.
- [5] USNRC International Regulatory Development Partnership (IRDP) online.