BAPETEN Human Resource Development
SESSION 6
Cross-Cutting Regulatory Areas
International Conference on Effective Nuclear and Radiation Regulatory Systems
Lukman HAKIM
Head of Training Centre - BAPETEN
The Hague, The Netherlands
4–7 November 2019
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INTRODUCTION
HR Development - The key to realizing the Vision of Indonesia Gold 2045

RPJM IV (2020-2024)

Realizing Indonesian society which:
INDEPENDENT
ADVANCED
FAIR
PROSPEROUS
Through accelerating development in various fields by emphasizing the establishment of a solid economic structure based on competitive advantage in various regions supported by:
QUALIFIED AND COMPETITIVE EXCELLENT HR

HR FOCUS

1. Basic Services and Social Protection
2. Qualified and Competitive Excellent HR
3. Nation Character Building

VISION 2045

INDEPENDENT ADVANCED FAIR PROSPEROUS

Ref: Dr. Ir. Setiawan W, Dipl. SE, M.Eng, Developing The Competence of Gov. Employee in The Framework of Implementing Talent Management, Coordination Meeting, Jakarta, May 2, 2019
GOV. EMPLOYEES COMPETENCY DEVELOPMENT POLICY DESIGN

NATIONAL LEVEL COMPETENCY DEVELOPMENT

INSTITUTION LEVEL COMPETENCY DEVELOPMENT

PLAN
1. Inventory requirements
2. Verification
3. Validation

IMPLEMENTATION
1. Compliance with job competency standards and career development
2. The suitability of the plan and the implementation

GE COMPETENCY DEVELOPMENT RIGHTS
MANAGERIAL
SOCIO CULTURAL
TECHNICAL

CAREER MANAGEMENT
- CAREER PATTERN
- CAREER MANAGEMENT
- TALENT MANAGEMENT

TALENT MANAGEMENT

COMPETENCY DEVELOPMENT
- PROFILE OF GE
- JOB - COMPETENCY STANDARD
- PERFORMANCE ASSESSMENT
- COMPETENCY ASSESSMENT

Reff: Dr. M. Taufiq, DEA, Changes in paradigm and the direction of competency development policy, Coordination Meeting, Jakarta, May 2, 2019
BAPETEN - Human Resource Development

**EXTERNAL ENVIRONMENT**
- IAEA REGULATION
- GOVERNMENT REGULATION
- TECHNOLOGY
- ECONOMIC

**INTERNAL ENVIRONMENT**
- CULTURE
- STRUCTURE
- EMPLOYEE SKILLS
- PAST STRATEGY

**Review and Evaluation of Human Resource Strategies**

- **Building HR Resource**
- **Creating HR Practise**
- **Ensuring HR Professionalism**

**Process Diagram**
- Performance Management
- Sourcing & Recruiting
- Talent Strategy & Plan
- Compensation
- Leadership Development
- Succession Plan
- Learning & Development

**Outcomes**
- Talent Workforce People
- Leaders Leadership
- Culture Workplace Process

**Serving external and internal Stakeholder**
- Analitics
- Leadership
- Customer
- Staff

Knowing The External Business Realities

BAPETEN

**Strategy**
Based on national plan 2015-2019, BAPETEN has prioritize its activities to be 3 main goals: (2)
1. Safety development of medical patient and enhancing radiological safety in all radiation applications.
2. Enhancing coordination among authorities and developing national nuclear securities.
3. Developing regulatory capacity to face new non-commercial NPP

(2) BAPETEN strategic plan 2015 - 2019
BAPETEN has been developing a comprehensive capacity building program to support national nuclear program in Indonesia based on the IAEA capacity building concept consists of:

<table>
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<tr>
<th>Education and Training (ET)</th>
<th>HRD</th>
<th>NKM</th>
<th>Nuclear Network</th>
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<td>Building Competences</td>
<td>Effective HR Management</td>
<td>Preserving NK</td>
<td>Building Comp.</td>
</tr>
<tr>
<td>Preserving nat. comp. on NST</td>
<td>Preventing NK Loss</td>
<td>Preventing NK Loss</td>
<td>Stakeholder Involvement</td>
</tr>
<tr>
<td>Public Outreach</td>
<td>Harvesting NK</td>
<td>Harvesting NK</td>
<td>Public Outreach</td>
</tr>
</tbody>
</table>

- **Education & Training**
  - Human Resource Development (HRD)
    - Effective HR Management
    - Preserving NK
    - Preventing NK Loss
    - Harvesting NK
  - Knowledge Management (KMM)
    - Building Comp.
    - Stakeholder Involvement
    - Public Outreach
    - Expert Exchange
    - Tech. Mat’l Sharing

- **Nuclear Network**
  - Government
  - Operators
  - TSOs
  - Educational Institutions
  - Others
BAPETEN - Competency Development Model (2)

**POLICY:**
1. GR NO. 11/2017 Gov. Employees MANAGEMENT
2. M. Administrative and Bureaucratic Reform (MABR) NO. 38/2017 Gov. Employees COMPETENCY STANDARDS

**COMPETENCY:**
1. MANAGERIAL
2. SOCIO CULTURAL
3. TECHNICAL

**MINIMAL:** Min. 20 Lesson-hours annually

**MEASUREMENT:**
1. JPT: ASSESSMENT CENTER
2. OTHER: MANAGEMENT

Ref: Dr. M. Taufiq, DEA, Changes In Paradigm and The Direction of Competency Development Policy, Coordination Meeting, Jakarta, May 2, 2019
BAPETEN - Competency Development Model (3)

**4. Personal and interpersonal effectiveness**
- 4.1 Analytical thinking and problem solving
- 4.2 Personal effectiveness and self-management
- 4.3 Communication
- 4.4 Team work
- 4.5 Managerial competences
- 4.6 Safety Culture

**3. Regulatory body’s practices**
- 3.1 Review and assessment
- 3.2 Authorization
- 3.3 Inspection
- 3.4 Enforcement
- 3.5 Development of regulatory documents

**Social-Cultural : Q4**
- Plurality in Social-cultural environment

**Competence Development**
GR 11/2017

**BAPETEN Competence -2018**
(GR 11/2017)

- 58%
- 21%
- 21%

- more than 20 Lesson-hours annualy
- Min. 20 Lesson-hours annualy
- Didn't Attend

**Reff:** Act. No. 5/2014; GR 11/2017 & MR

**Reff:** https://gnssn.iaea.org/regnet/rcm/sc/Pages/SARCoN.aspx
# BAPETEN Competence Needs Assessment Process

(Ea. Cluster FRZR)

## Tabel dan Grafik Profil Kompetensi Unit Kerja DIFRZR

<table>
<thead>
<tr>
<th>Kuadran</th>
<th>Kompetensi</th>
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</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Dasar Hukum</td>
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<tr>
<td>1.2</td>
<td>Kebijakan</td>
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<tr>
<td>1.3</td>
<td>Peraturan</td>
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<td>1.4</td>
<td>Sistem m.</td>
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<tr>
<td>2.1</td>
<td>Teknologi</td>
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<tr>
<td>2.2</td>
<td>Teknologi</td>
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<tr>
<td>2.3</td>
<td>Teknologi</td>
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<tr>
<td>3.0</td>
<td>Teknik As</td>
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<tr>
<td>3.1</td>
<td>Evaluasi</td>
</tr>
<tr>
<td>3.2</td>
<td>Inspeksi</td>
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<tr>
<td>3.3</td>
<td>Teknik In</td>
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<tr>
<td>3.4</td>
<td>Penegakan</td>
</tr>
<tr>
<td>3.5</td>
<td>Pengemb.</td>
</tr>
<tr>
<td>4.1</td>
<td>Kemampuan</td>
</tr>
<tr>
<td>4.2</td>
<td>Efektifitas</td>
</tr>
<tr>
<td>4.3</td>
<td>Komunikasi</td>
</tr>
<tr>
<td>4.4</td>
<td>Kerja San</td>
</tr>
<tr>
<td>4.5</td>
<td>Manager</td>
</tr>
</tbody>
</table>

- **Law Enforcement**
- **Investigation Tech.**
- **Management System**
- **Team Work**

[Diagram showing competencies and proficiency levels]

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*Note: The diagram shows proficiency levels in various competencies with colors indicating different groups or units.*
BAPETEN Training Process

SARCoN
Interview with Management

TNA

Define Objective
Develop Lesson Plan
Develop / Acquire Material
Select Trainer / Leader
Select Methods
Schedule The Program

Planning

Deliver Program

Education

Training

Organizing training

Classical

Non-Classical

Accredited Institution
(Soft Skill/Q4)

SIKOPEL
Senior Staff / Retired Staff

Universities

Education and Training Evaluation

Evaluation
Staffing – Regulation, Authorization, Assessment & Inspector

Inspector, Regulation, Authorization, Assessment

<table>
<thead>
<tr>
<th></th>
<th>Existing</th>
<th>Estimated Regulatory Staff Required</th>
<th>Regulatory Staff To Be Educated &amp; Trained (New Comer)</th>
<th>Regulated Staff to be trained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>42</td>
<td>70</td>
<td>2</td>
<td>12</td>
</tr>
<tr>
<td>Regulation</td>
<td>41</td>
<td>60</td>
<td>6</td>
<td>11</td>
</tr>
<tr>
<td>Licensing</td>
<td>62</td>
<td>101</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Inspector</td>
<td>168</td>
<td>225</td>
<td>10</td>
<td>57</td>
</tr>
</tbody>
</table>

EXISTING

REGULATORY STAFF TO BE EDUCATED & TRAINED (NEW COMER)

REGULATED STAFF TO BE TRAINED

ESTIMATED REGULATORY STAFF REQUIRED
In anticipation for the first nuclear power plant in Indonesia, BAPETEN has to be able to assess the future need for competent regulatory staffs. There must be clear separation between the role of regulatory body and external Technical Support Organization (TSO).
# IAEA HRD Approach for 1st Nuclear Power Programs

## Milestone 1: Pre-project
- **Phase 1:** Pre-project
  - Considerations before a decision to launch a nuclear power program is taken

## Milestone 2: Pre-project
- **Phase 2:** Project Decision Making
  - Preparatory work to the construction of a nuclear power plant after a policy decision has been taken

## Milestone 3: Construction
- **Phase 3:** Construction
  - Activities to implement a first nuclear power plant

## Milestone 4: Operation / decommissioning
- **Phase 4:** Operation / decommissioning
  - Operation of the first nuclear power plant

### HRD Target
- NEPIO

### HRD Requirements

<table>
<thead>
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<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
<th>Phase 4</th>
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<tbody>
<tr>
<td><strong>NEPIO</strong></td>
<td><strong>Decision makers</strong></td>
<td><strong>Project Managers</strong></td>
<td><strong>Operational / decommissioning Managers</strong></td>
</tr>
<tr>
<td><strong>Knowledge and skills needed to support a nuclear programme identified by NEPIO</strong></td>
<td><strong>Business/Technical Experts</strong></td>
<td><strong>Manufacturing personnel</strong></td>
<td><strong>Operator / TSO</strong></td>
</tr>
<tr>
<td><strong>Plan to develop and maintain the human resource base developed</strong></td>
<td><strong>Sufficient human resources to issue bid request are in place</strong></td>
<td><strong>O/M Personnel</strong></td>
<td><strong>Regulator</strong></td>
</tr>
<tr>
<td><strong>Initial education and training for remaining human resources</strong></td>
<td><strong>All human resources to commission and operate the first nuclear power plant</strong></td>
<td><strong>Regulator</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Educational and training programs for continuing flow of qualified people are underway</strong></td>
<td><strong>All human resources to operate and decommissioning the first nuclear power plant</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Educational and training programs for sustaining the competence of all area;</strong></td>
<td></td>
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</tbody>
</table>

*Ref: Milestones in the Development of a National Nuclear Energy Series, No. NG-G-3.1, IAEA, 2007*
# BAPETEN Training Programs by Course

## NPP Phase

<table>
<thead>
<tr>
<th><strong>BAPETEN Training Center Program</strong></th>
<th><strong>Phase 1</strong> Pre-project</th>
<th><strong>Phase 2</strong> Project Decision Making</th>
<th><strong>Phase 3</strong> Construction</th>
<th><strong>Phase 4</strong> Operation / decommissioning</th>
</tr>
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<tr>
<td>Interregional TC on Siting Methodology for Nuclear Facilities</td>
<td>TC- Evaluation of the Safety Analysis Document of NPP</td>
<td>TC Regulatory Control of Nuclear Site Evaluation and Inspection during the Siting, Construction and Operation</td>
<td>Training programs for project management, Siting, construction, operation / decommissioning NPP</td>
<td>TC Regulatory Inspections (Oversight) during siting construction, operation / decommissioning phases</td>
</tr>
<tr>
<td>TC on Nuclear Power Planning and Project Management for Middle-level Managers in Developing countries</td>
<td>TC on Nuclear Security, Nuclear Materials Protection, Control and Accountability during sitting, construction, operation / decommissioning phases</td>
<td>TC Risk Management during Siting, Construction, Operation / decommissioning phases</td>
<td>TC Risk Management during Siting, Construction, Operation / decommissioning phases</td>
<td>TC Risk Management during Siting, Construction, Operation / decommissioning phases</td>
</tr>
<tr>
<td>Nuclear Energy Policy and Nuclear Power Project Management for High-level Decision - makers in emerging countries (Bilateral)</td>
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<td></td>
<td>Courses</td>
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<tr>
<td>IAEA/Interregional TC on Nuclear Energy Policy, Planning and Project Management</td>
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<td>Courses</td>
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<tr>
<td>IAEA RTC on Safety Assessment for Nuclear Reactor</td>
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<td></td>
<td>- Waste Management</td>
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<tr>
<td>IAEA Regional workshop on ANSN in NPP - Technology</td>
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<td></td>
<td>- Operation training</td>
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<td>TC Regulatory Framework</td>
<td></td>
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<td></td>
<td>- Mechanical engineering</td>
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<td>- Electrical engineering</td>
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<td>- I&amp;C engineering etc</td>
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<td>- QA &amp; QC</td>
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## Challenges

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<td>Compliance with Laws and Regulation</td>
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<td>Management Changes</td>
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<td>Workforce Training and Development</td>
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<td>Adapting to Innovation</td>
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<tr>
<td>Compensation</td>
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<tr>
<td>Understanding Benefits Packages</td>
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<tr>
<td>Recruiting Talented Employees</td>
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<tr>
<td>Retaining Talented Employees</td>
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</table>
Conclusion

- BAPETEN HRD is defined as development of BAPETEN staff by providing the right environment where each individual may grow to his fullest potentialities;
- BAPETEN HRD are viewed as total knowledge, skills, creative abilities, talents and aptitudes of BAPETEN’s workforce as well as values, attitudes and beliefs of BAPETEN individuals involved, and
- BAPETEN HRD is an ongoing and dynamic process that believes in the need for the development of sustainable personnel to face innumerable challenges in carrying out BAPETEN functions.