ASSESMENT OF IMPLEMENTATION OF INTEGRATION OF SAFETY CULTURE INTO REGULATORY PRACTICES AND DECISION MAKING PROCESS IN BAPETEN

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TM on Integration of Safety Culture into Regulatory Practices and the Regulatory Decision Making Process, 6-8 October 2014
Act No. 10 of 1997 on Nuclear Energy

• Safety culture is defined as characteristics and attitude of organization and individuals that emphasize the importance of safety.

• One of BAPETEN function is “to increase legal awareness of nuclear energy user in order to develop safety culture (article 15, point d).
BAPETEN Publication on Management System

- BCR No 4 of 2010 on Management system for facility and activity
- BAPETEN Management System
REVISION OF NUCLEAR SAFETY POLICY STATEMENT

NATIONAL NUCLEAR SAFETY POLICY (DRAFT)

OPERATIONAL SAFETY POLICY STATEMENT (DRAFT)

SAFETY & SECURITY POLICY STATEMENT (DRAFT)
SAFETY CULTURE

- Common way of life
- Collective mental programming
- The DNA of an organization
- A lot like breathing, you don’t think about it
- The way we do things around here
- Safety is in Our Heart and Mind
TARGET LEVELS

Human Performance Target Areas...

Organisations

Manager

Individuals

Safety Culture is not Possible Without Regulatory Compliance

An Error Reduction Approach
ROLE OF BAPETEN IN FOSTERING NUCLEAR SAFETY CULTURE OF THE LICENSEES

Safety Culture is not Possible Without Regulatory Compliance
FOSTERING SAFETY CULTURE OF LICENSEES

- Coordination meeting for safety culture implementation.
- Seminar on Nuclear Safety Culture
- Coordination FNCA Workshop on Nuclear Safety Culture.
- Give a lot of presentations & lectures on nuclear safety culture implementation & improvement (Batan & Radiation Protection Worker, Public).
- Assessment of Safety Performance Indicator (SPI) for Research Reactor and Non Reactor Installation
WORKSHOP & TRAINING OF NUCLEAR SAFETY CULTURE

• Workshop on Nuclear Safety Culture
• Workshop on Safety Culture Self Assessment (Tec doc 1321)
• Workshop on safety & security Culture Improvement
• Workshop on Safety Leadership
• Nuclear Safety Culture Implementation (Lecture for Training of radiation protection, 4 hour)
• Safety & Security Culture for Inspector (Lecture for Inspector training, 3 hour)

Next program
• Workshop on Safety Culture Oversight
• Workshop on safety Culture Self Assessment for regulatory Body
FOSTERING SAFETY CULTURE SELF ASSESSMENT

- TRAINING WORKSHOP ON SAFETY CULTURE SELF ASSESSMENT, 2005 BASED ON IAEA TEC DOC 1321.
- PRESENTATION THE RESULT OF SAFETY CULTURE ASSESSMENT TO THE TOP MANAGEMENT LEVEL BATAN & BAPETEN (FOR BETTER IMPLEMENTATION), 2006
- SAFETY CULTURE SELF ASSESSMENT BY FACILITY
- WORKSHOP SAFETY CULTURE SELF ASSESSMENT IMPLEMENTATION, 2008
BENCHMARKING FROM HSE CULTURE LADDER

- **Pathological**
  - Kami peduli selama kami tidak disalahkan

- **Reactive**
  - Safety itu penting, kami melakukan banyak hal setiap kali kami mengalami kecelakaan kerja

- **Calculative**
  - Kami sudah memiliki sistem untuk mengelola semua bahaya

- **Proactive**
  - Kami bekerja pada permasalahan-permasalahan yang masih kami temui

- **Generative**
  - Safety adalah bagaimana kami melakukan bisnis disekitarnya
**SCORING SHEET**

*Date: 06-04-01 Company: X-products*

<table>
<thead>
<tr>
<th>Description of Dimension</th>
<th>Pathological</th>
<th>Reactive</th>
<th>Calculative</th>
<th>Proactive</th>
<th>Generative</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Communicating HSE issues with the workforce?</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>B</td>
<td>Commitment level of Workforce</td>
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<tr>
<td>C</td>
<td>What are the rewards of good HSE performance?</td>
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<td>D</td>
<td>Who causes accidents?</td>
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<td></td>
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<tr>
<td>E</td>
<td>Balance between profit &amp; HSE</td>
<td>✓</td>
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<tr>
<td>F</td>
<td>Contractor management</td>
<td>✓</td>
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<tr>
<td>G</td>
<td>Are workers interested in competency?</td>
<td>✓</td>
<td>✓</td>
<td></td>
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<tr>
<td>H</td>
<td>What is the size/status of the HSE department?</td>
<td>✓</td>
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<td>I</td>
<td>Work Planning including PTW</td>
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<td>J</td>
<td>Work-site safety management techniques</td>
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<tr>
<td>K</td>
<td>What is the purpose of procedures?</td>
<td></td>
<td></td>
<td>✓</td>
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<tr>
<td>L</td>
<td>Incident/accident reporting/analysis</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>M</td>
<td>Hazard and unsafe act reports</td>
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<tr>
<td>N</td>
<td>What happens after an accident?</td>
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<td>O</td>
<td>Who checks HSE on a day to day basis?</td>
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<td>P</td>
<td>How do HSE meetings feel?</td>
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<tr>
<td>Q</td>
<td>Audits</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>R</td>
<td>Benchmarking, trends and statistics</td>
<td>✓</td>
<td></td>
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</tbody>
</table>

**Total ticks per column**

<table>
<thead>
<tr>
<th>A</th>
<th>2</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>18</td>
</tr>
</tbody>
</table>

**Sum total no. of ticks: N = Σa**

**Weighting factor**

| b | 1 | 2 | 3 | 4 | 5 |

**No. of ticks per column (a) x Weighting factor (b)**

**Sum total weighted scores: Total = Σ (a x b)**

**Calculate average HSE Culture Score: Total/N = 26/9 = 2.9**
Safety Principle SF-1

Integration of safety culture

3.13. “A safety culture that governs the attitudes and behaviour in relation to safety of all organizations and individuals concerned must be integrated in the management system. Safety culture includes:

- Individual and collective **commitment** to safety on the part of the leadership, the management and personnel at all levels;

- **Accountability** of organizations and of individuals at all levels for safety;

- Measures to encourage a **questioning and learning attitude** and to discourage complacency with regards to safety.”
Assessment of Integrated Safety Culture Into Regulatory Practices and Decision Making Process
Decision Making Process

Initiators:
- Petition for rulemaking
- Application for license/approval
- Findings for enforcement

DMP:
- Risk assessment
- Threat assessment
- Regulatory impact analysis

Regulatory Decision:
- New Regulation & Guides
- Rejection, License & Approval
- Enforcement: Suspension, Revocation, Penal provision

DSS
Decision Support System (DSS)

Management Information System (MIS)
BAPETEN: B@LIS and EVADOSE

Computer Codes. BAPETEN: PARET/ANL, MCNP, RELAP-5, MVP, SRAC, and SCALE

Regulation, guides, standards, best practices

Procedures, Working Instructions [including acceptance criteria]
IAEA Safety culture characteristics and attributes (GS-G-3.1)

Safety Culture Characteristics

- Safety is a clearly recognized value
- Leadership for safety is clear
- Safety is integrated into all activities
- Accountability for safety is clear
- Safety is learning driven
Leadership for safety is clear

Senior management is clearly committed to safety

Commitment to safety is evident at all management levels.

Visible leadership showing involvement of management in safety related activities.

Leadership skill are systematically developed

Management assures that there is sufficient and competent staff

Management seeks the active involvement of staff in improving safety

Management shows a continuous effort to strive for openness and good communications throughout the organization.

Managerial ability to resolve conflicts are necessary

Relationships between management and staff are built on trust.
Leadership for safety is clear

• The key element in effective safety leadership is empowering people at all ‘levels’ of the organisation to take a leadership role in safety by assisting them to both understand and believe in their role of being a safety leader.
Senior management is clearly committed to safety

- National Nuclear Safety Policy Statement
- BAPETEN Management System Policy Statement
- Operational Policy Statement

Slogan:
- SHE-QS is what we do business around here
- SHE-QS is our heart and mind

Practices:
- Management develop clear safety vision
- Management at all level sign the SHE-QS contract, as the fact integrity commitment of work safe implementation
- Effective SHE-QS Communication
- Develop KPI of SHE-QS and measure periodically
Commitment to safety is evident at all management levels

- All level management as the role model of safety implementation.
- Hold high safety standards, and work for them despite all doubts.
- Portray an image and interpret “what is going on” and “what should be going on.”
- Setting clear expectations. Only commit to what can deliver.
- Demonstrate what management say, commit to action. Decide, act, learn.
- Provide recognition in the workplace of those who “live” the safety values.
Visible leadership showing involvement of management in safety related activities

- Activate the program of Occupational Safety Health (OSH) month every February, to increase awareness of the safety, and create safety day.
- Involve of the safety behavior change program to reduce number of unsafe behavior in the workplace.
- Visiting the worksite to monitor safety, providing positive feedback
Leadership skill are systematically developed

• Interpersonal skills are as important as technical skills.
• Enhanced Safety Leadership skill for all levels.
• Used a suitable style for effective safety leadership “the right style—the right time—the right condition”.
• Provide support and encouragement and share learning.
• Increased Safety Leadership behavior, and as a learner continuously.
• Do all the relevant organizations ensure that appropriate arrangements for management of safety-related knowledge (including record management and report management) and knowledge transfer.
Management assures that there is sufficient and competent staff

• Prepare the training programs / Knowledge management / Coaching Mentoring Consulting

• Allocated budget for every employee to joint in or out company training.

• Your My Our (YMO) Story when doing coaching, this is the implementation of two ways effective safety communication program

• Develop the skills and confidence of people in undertaking their responsibilities
Management seeks the active involvement of staff in improving safety

worker involvement program and with the following mindset:

• Involvement of workers for the better SHES performance, and also good for your business

• If you don’t involve them, they think that you don’t care of them.

• And the most importance you must ask your worker, and this is practical way to help you find risk at your workplace to ensure and control HSSE run and raise of commitment level of worker to work with safe and health.

• Workplace where the workers involve to make decision of SHES is more safely and healthy.

• Your workers influenced by SHES through their action

• Usually workers are people who know well hazard at their workplace.
Management shows a continuous effort to strive for openness and good communications throughout the organization.

- Communicating frequently about safety
- Develop and communicate an Annual Safety Plan
- Communicate the plans and involve people to the extent considered necessary where all people understand the safety plans and goals and their individual and team roles to achieve the plan.
- Publicly display and discuss with people the safety expectations of the organisation owned and their personal commitment to achieve those expectation.
- Continual effort to strive for openness and good communication
- Conduct meeting which foster active communication among people which deliver real and practical outcomes
- Share safety alerts
- Be human and be with people.
- There is a two-ways communication process between management and worker regarding SHES issues. There is a process of asking and telling.
Involve the safety communication program

- Safety Pause
- Safety Briefing
- Safety Walk And Talk (SWAT)
- Top Management Dialog with staff
- Management Joint Inspection (MJI)
- Tool Box Meeting
- Communication tips for workplace safety messages
- SHES Publication & Blog
- Safety Report & Safety Bord
- Story telling
- Safety days
Managerial ability to resolve conflicts are necessary

• Management prepares the program to increase the capability for resolve the conflict.
• If it is difficult to solve the problem, take action with DSPA (Define/Structure/Prioritize issue/Action plan) concept.
• Provide effective leadership during crisis and emergency situations
• Don’t “walk past” issues.
Relationships between management and staff are built on trust.

- Empower people to take action to develop and keep a safe workplace.
- Take the lead when challenges occur and modify inappropriate safety behavior.
- Give feedback to reinforce positive behavior or correct unsafe/negative behaviors.
- Be open to feedback from others and be prepared to act on it.
- Enhanced of Personal Safety Leadership, take part with Coaching-Mentoring-Consulting.
- Reduce the power distance.
- Reward Staff for Better Safety Performance.
- Managers explain why the task is important, allow people to complete the task in their own way, give positive feedback.
- Gain individuals’ and group commitment to the safety outcomes and their collective and individual contribution to their achievement.
- Everyone who checks SHES hazards, observing himself and his colleagues.
## Characteristic: Safety is Clearly Recognized Value

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>REGULATORY PRACTICES</th>
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</thead>
<tbody>
<tr>
<td>High Priority to the safety, shown in documentation, communication and</td>
<td>- Nuclear Safety Policy Statement</td>
</tr>
<tr>
<td>decision making,</td>
<td>- BAPETEN Management System</td>
</tr>
<tr>
<td></td>
<td>- Decision Making Process</td>
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<tr>
<td>Safety is primary consideration in the allocation of resources,</td>
<td></td>
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<tr>
<td></td>
<td>- BAPETEN Management System</td>
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<td></td>
<td>- SOP for procurement</td>
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<tr>
<td>The Strategic business importance of safety is reflected in business plan</td>
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<tr>
<td></td>
<td>- Strategic Planning</td>
</tr>
<tr>
<td></td>
<td>- Annual Planning</td>
</tr>
<tr>
<td>A proactive and long-term approach to safety issues is shown in decision</td>
<td>Nuclear safety Policy statement, long-term policy paper for long-term strategic</td>
</tr>
<tr>
<td>making,</td>
<td>planning, DMP</td>
</tr>
<tr>
<td>Safety conscious behavior is socially accepted and supported both</td>
<td>Behavior Change Program, AWAS, STAR Concept, BBS, Just Culture</td>
</tr>
<tr>
<td>formal and informally,</td>
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</tbody>
</table>
Behavior Change Program

- Awareness for Safety (AWAS),
- IAEA STAR concept,
- STOP by DUPONT (benchmark)
- Behavior Base Safety Program
- Just Culture Program
Benchmarking from Best Practices: Journey of Safety Excellence Performance

- SHEQ Culture Gap Analysis

**Current Culture**
- Obtaining Baseline Data for improvement:
  - PSRM
  - Alpha assessment
- Method:
  - Questioner
  - Interview
  - Focus Group Discussion
  - Doc. Review
  - Field Verification

**SHEQ Management System**
- Leverage for changing:
  - Safety Performance
  - Key Performance Indicators
  - Risk Based Management System

**Preferred Culture**
- Interdependent Culture:
  - Team Commitment
  - Help Others to Conform
  - Networking Contributor
  - Care for Others
  - Value for each other
  - Team Goals
  - Organizational Pride

**Outcomes**
- Measure the level of goal achievement
- Measure the effectiveness of intervention
- Need to change intervention method and strategy?

Management System Audit
Benchmarking from Journey of safety culture improvement

= Safety Culture Vs Injury Rate =
<table>
<thead>
<tr>
<th>Safety is integrated into all activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust permeates the organization</td>
</tr>
<tr>
<td>Consideration for all types of safety, including industrial and environmental, security, is evident</td>
</tr>
<tr>
<td>Quality of documentation and procedure is good</td>
</tr>
<tr>
<td>Quality of processes, from planning to implementation and review is good</td>
</tr>
<tr>
<td>Individual have the necessary knowledge and understanding of work processes</td>
</tr>
<tr>
<td>Faktor affecting work motivation and also job satisfaction are considered</td>
</tr>
<tr>
<td>Good working condition exist with regards to time pressures, work load and stress</td>
</tr>
<tr>
<td>Cross-functional and interdisciplinary cooperation and teamwork are present</td>
</tr>
<tr>
<td>Housekeeping and material condition reflect commitment to excellence</td>
</tr>
</tbody>
</table>

35
Consideration for all types of safety, including industrial and environmental, security, is evident.
A PRODUCT THAT SATISFIES ALL REQUIREMENTS
Safety - Health – Environmental - Security – Quality - Economic - Others
Quality of processes, from planning to implementation and review is good.
Housekeeping and material condition reflect commitment to excellence.
### Characteristic: Accountability for Safety is Clear

<table>
<thead>
<tr>
<th>ATTRIBUTE</th>
<th>REGULATORY PRACTICES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate relationship with regulatory body exists, which ensures that the accountability for safety remain with the licensee,</td>
<td>Nuclear Safety Policy Statement, GR.</td>
</tr>
<tr>
<td>Roles and Responsibilities are clearly defined and understood</td>
<td>BAPETEN Management System, OTK, RB of J1, J2 Develop SHE-QS MS</td>
</tr>
<tr>
<td>There is high level compliance with regulations and procedures</td>
<td>Nuclear safety policy statement, SMB</td>
</tr>
<tr>
<td>Ownership for safety is evident at all organizational levels and by all individuals,</td>
<td>Nuclear safety policy statement, but a lot of improvement for implementation</td>
</tr>
</tbody>
</table>
Relationship with regulatory body exists, accountability for safety remain with the licensee

Nuclear safety policy statement, Gov.regulation stated that the main primary responsibility of safety remain with licensee.

Encourage safety positive attitude to licensee

• Always question: "Are we doing the right thing?".

• Create an environment that motivates people to obey the rules of safety and improve the performance of the past. SHE-QS is the real thing.

• SHE-QS performance is an indicator of 'good businesss performance’

• They tried to get involved as much as possible to see what might be wrong.

• All safety messages implemented and welcome

• Ashamed of making the mistakes, and use it to make something better. Everybody knows how to improve their safety performance.
Roles and Responsibilities are clearly defined and understood

BAPETEN Management System, Org.&Working instruction, Develop OHSES management system, OHSES Responsibilities” high-lights the operational responsibility of the line management, So, everybody know how to implement each element of OHSES management system.

<table>
<thead>
<tr>
<th>01. Policy &amp; Compliance</th>
<th>07. Safe Work Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>02. Responsibility</td>
<td>08. Incident Analysis &amp; Investigation</td>
</tr>
<tr>
<td>03. Overview &amp; Communication</td>
<td>09. Emergency Planning &amp; Response</td>
</tr>
<tr>
<td>04. Hazard Analysis</td>
<td>10. Inspecting, Audit &amp; Evaluation</td>
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<tr>
<td>05. Training, Skills &amp; Competence</td>
<td>11. Feedback and Improvement</td>
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<tr>
<td>06. Operating Procedures</td>
<td>12. off-the Job SHE-QS</td>
</tr>
</tbody>
</table>
There is high level compliance with regulations and procedures

- Prevention of all accidents, incidents.
- **Comply with all rules, relevant regulations**, procedure and other applicable standards of SHE-QS
- Developing and maintaining a culture that strives toward a SHE-QS.
- **Continually improving** the Safety and Health Management, Environmental Management and Quality Management Systems.
- Safety is everybodys responsibility and line management is directly accountable for preventing injuries and occupational illnesses, poor services as well as the security trouble.
Ownership for safety is evident at all organizational levels and by all individuals,

- safety slogan “safety is everybody’s concern” or “Safety is everybody’s responsibility”.
- BAPETEN developes several programs to implement these safety slogan or commitment, and also evaluate as the key performance indicator for all organizational level and for individual.
- The example of key performance indicator program:
  1. Safety Commitee Meeting
  2. Safety Walk And Talk
  3. Awareness for Safety (AWAS ) → Safety Observation Report Card
  4. Management Walk Through (MWT)
  5. Management Joint Inspection (MJI)
  6. Learning days
  7. Safety Campaign / Safety Talk
Safety is Learning Driven

- A questioning attitude prevail at all organizational levels
- An open reporting of deviations and errors is encouraged
- Internal and external assessments, including self assessment are used
- Organizational and operating experience (both internal & external to the facility) is used,
- Learning is enabled through the ability to recognize and diagnose deviations, formulate and implement solutions and monitor the effects of corrective actions
- Safety Performance indicators are tracked, trended, evaluated and acted upon,
- There is a systematic development of staff competencies
QUESTIONING ATTITUDE

An open reporting of deviations and errors is encouraged: SAFETY OBSERVATION CARD REPORT

- They try to get involve as much as possible to see what might be wrong.
- They see failure as something to be fixed and not for the blame.
- Management knows what is really going on, and workers willing to tell them.
- The bad news is really seen as a good opportunity to learn.
- All safety messages implemented and welcome.
- Everybody knows how to improve safety performance.
Internal and external assessments, including self assessment are used

- Internal & External assessment of regulatory Effectiveness (DMP&DSS)
- External assessment by IRRS next August 2015.
- Draft guidance for Safety culture self assessment of BAPETEN.
- Plan to do self assessment of safety culture next 2015
- Draft guidance of safety culture oversight for licensee.
- Plan to do oversight of safety culture for Licensee
Organizational and operating experience (both internal external to the facility is used, multilateral cooperation IAEA, EU, Euratom, Aseantom, ANSN, etc.

Bilateral Cooperation Other Regulatory Body & TSO

Benchmarking

National and Internal best practices

ISRS – DNV, IRSRS, TUV – ISO, MB, etc.
Learning is enabled through the ability to recognize and diagnose deviations, formulate and implement solution and monitor the effects of corrective actions.

Systemic Approach to Safety – The Interaction between Individuals, Technology and Organization

2015 National Workshop on ITO for Decision Making Process for Senior Manager
Safety Performance indicators are tracked, trended, evaluated and acted upon,

SPI for BAPETEN DMP

SPI for oversight

KPI for SMB

REGULATORY EFFECTIVENESS
There is a systematic development of staff competencies

- **Education, Training, Workshop & Seminar.**
  - Leadership & Management for safety
  - Safety & Security Culture improvement.
  - Safety & Security Culture self assessment
  - Safety & Security Culture Oversight
  - ITO for Regulatory Decision Making Process

- **Knowledge Management Program**
  - Focus Group Discussion & sharing knowledge
  - Coaching & Mentoring
  - Capturing & Repository of knowledge
The step to be recognized as a world-class Nuclear regulatory body

COMMITMENT FOR
SAFETY CULTURE IMPROVEMENT
Thank you very much for your attention