International Conference on Human Resource Development for Nuclear Power Programmes Building and Sustaining Capacity

Human Resources Management in the Belgian TSO Bel V

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Content of Presentation

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2. Bel V Integrated Management System
3. Human Resource Management Process
   1. Administrative and Social HRM
   2. HRM by competences
4. Competence Gap Analysis
   1. Description of CGA process
   2. SARCoN pilot application
5. Training Programs
   1. Training Needs Assessment
   2. Systematic Approach to Training
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1. Belgian Regulatory Framework
1. Belgian Regulatory Framework (ct’d)

General Objectives of Bel V

1. **Perform controls** in nuclear safety and radiation protection in all nuclear installations of Belgium, including the nuclear power units

2. **Advise** the Belgian Authorities in the development of nuclear emergency plans, and play a role in the management of nuclear or radiological crisis

3. Carry out and **assess analyses performed in nuclear safety and radiation protection** and provide expertise in these fields. Such activities can be performed in support of the Belgian Regulatory Authority (FANC) or for international or foreign organizations
2. Bel V Integrated Management System

Bel V Quality Management System embedded in Integrated Management System.

1. Quality Manual with Quality Policy and Quality Objectives

2. Definition of 12 processes
   - Process mapping with Level 1, 2, (3), (4)

3. Development of procedures
2. Bel V Integrated Management System (ct’d)

- A01 Manage Bel V
- A02 Manage the accounts, Manage the projects
- A03 Acceptance/Licensing of installations
- A04 Operational inspection
- A05 (reserve)
- A06 Delivery and Management of expert services in NS and RP
- A07 Management of Expertise and Technical Quality
- A08 Human Resources Management
- A09 Purchasing Management
- A10 Financial Management
- A11 Support Management
- A12 QMS Management
3.2. HRM by Competences

Level 1

A08 Human Resources Management

Level 2

A08.00: Manage Human Resources
A08.01: Administrative and Social HRM
A08.02: HRM & HRD by competences
A08.03: Assess the HRM Process

Level 3

A08.02.01: Description of roles
A08.02.02: Competence gap analysis
A08.02.03: Training programmes
A08.02.04: Implementation of training
A08.02.05: Individual development plans
3.2. HRM by Competences (ct’d)

Reorganisation of HRM Process in October 2013

→ all activities related to Competence Management & Training included in A08, with the following steps:

1. Role descriptions with associated tasks (36 roles)
2. Competence gap analysis using SARCoN
   \( \text{SARCoN} = \text{Systematic Assessment of Regulatory Competence Needs} \)
3. Training programmes for staff based on Training Needs Assessment (SAT2, SAT3)
4. Implementation of training based on Training programmes (SAT4, SAT5)
5. Management of individual development plans
6. Yearly evaluation of personnel performance
3.2. HRM by Competences (ct’d)

1st STEP in the process: Role descriptions

All described following the template below:

1. Mission statement of the role
2. Description of activities and tasks
3. Hierarchical and functional position
4. Qualification requirements
5. Competence requirements
3.2. HRM by Competences (ct’d)

Difference between Qualification requirements

• Qualification can be defined as the combination of individual elements of the education, training and experience needed to meet the role/function description requirements.

Competence requirements

• Required competences for a given role, based on list of KSAs
• Competence = ability to put KSA into practice
• KSA = Knowledge – Skill - Attitude
Competence requirements

*Required competences for the role are defined by the supervisor on the basis of a reference list of KSAs. KSAs are associated to each of the quadrant of the IAEA competence model: refer to the procedure Q080202-01 describing the methodology for managing the competences of the Bel V staff (« competence gap analysis »)*
## Quadrant Model of Competence

<table>
<thead>
<tr>
<th>4. Competences related to personal and interpersonal effectiveness</th>
<th>1. Competences related to the legal, regulatory and organizational basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1 Analytical thinking and problem solving</td>
<td>1.1 Legal basis</td>
</tr>
<tr>
<td>4.2 Personal effectiveness and Self Management</td>
<td>1.2 Regulatory policies and approaches</td>
</tr>
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<td>4.3 Communication</td>
<td>1.3 Regulations and regulatory guides</td>
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<td>4.4 Team work</td>
<td>1.4 Management system</td>
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<td>4.5 Management and Leadership</td>
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<td>4.6 Safety Culture</td>
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<tr>
<th>3. Competences related to regulatory body’s practices</th>
<th>2. Competences related to technical disciplines</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Review &amp; Assessment</td>
<td>2.1 Basic Science &amp; Technology Competence</td>
</tr>
<tr>
<td>3.2 Authorization</td>
<td>2.2 Advanced Science &amp; Technology Competence</td>
</tr>
<tr>
<td>3.3 Inspection</td>
<td>2.3 Specialized Science &amp; Technology Competence</td>
</tr>
<tr>
<td>3.4 Enforcement</td>
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<tr>
<td>3.5 Development of regulations and guides</td>
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</tbody>
</table>
Step-by-step approach recommended by the SARCoN guidelines to identify the gap between the existing and the required competences.

Step 1: Regulatory functions

Step 2: Specific tasks

Step 3: Competence profiles

Step 4: Staff self-assessment

Step 5: Competence gap analysis

Step 6: Existing competences

Step 7: Training & Development, Reorganization, Recruitment or Outsourcing

Periodic Review
Competence Gap Analysis PROCEDURE

Content of Bel V procedure describing the CGA process:

1. General description of Competence Management
2. Description of Competence model IAEA (4 quadrants)
3. List of required competences
   1. Determine the main tasks related to each role in the role descriptions (steps 1 & 2)
   2. Develop a reference list of KSAs corresponding to the functions/tasks (step 3)
4. Implementation of SARCoN
   1. Determine the KSAs levels required for all functions (competence profiles) (step 3)
   2. Determine the KSAs level existing (self-assessment) (step 4)
   3. Evaluate the results of the self-assessment (with coach/supervisor) (step 4)
   4. Carry out the competence gap analysis (step 5)
5. Analyse the gaps in order to produce a map of gaps for the whole organisation
6. Prioritize the gaps and allocate resources to fill (some of) the gaps (step 6)

5. Methods of acquiring competences
SARCoN Pilot application

Steps 1-2 have been carried out.

For Step 3 → 2 competence profiles developed.

Pilot Application for step 4 of step-by-step approach:

1. Self-assessment of existing level of competence
   Fill in the existing level of KSA: 0, 1, 2 or 3 for all KSAs in Quadrants 1,2,3

2. Evaluation interview with coach or supervisor
   Compare the required KSA with the existing ones; validation of self-assessment with coach or supervisor
   • Step 5: carry out the competence gap analysis using the software tool (by the training manager); produce a map of gaps for each staff member involved in the pilot application.
   • Step 6: prioritize the gaps according to their importance and decide with the supervisors how to fill the gaps
5. Training Programs

Reorganisation of the Belgian nuclear regulatory sector in 2008

– Reinforcement of the resources & expertise
– More than 30 new engineers hired during last 6 years

Increased training needs
Systematic Approach to Training

• Training is 1 of methods to fill gaps (besides recruitment & outsourcing)
• When training is chosen, Bel V adopts IAEA Systematic Approach to Training (SAT), specifically developed to reach and maintain competences.

5 interrelated phases.
Systematic Approach to Training (ct’d)

1. Analysis of training needs
   – Organisational chart & role descriptions, including associated qualification/competence requirements
   – Educational profile and professional experience
   – Competence gap analysis
   – Training Needs Assessment (TNA)

2. Design of training programmes
   – Developed for each staff member, in particular for newcomers

3. Development of training courses or materials
   – Finding best available and appropriate training courses or materials

4. Implementation of training
   – By various methods: self-study, distant learning, internal and external classroom training sessions, on-the-job training or tutoring

5. Evaluation of the training effectiveness
Systematic Approach to Training (ct’d)

• Most of the training efforts towards newcomers

• An initial training programme for them includes
  – Work practices specific to Bel V
  – Basic technical training (Legislative and regulatory framework, Regulatory practices, Basic technical disciplines)
  – Specific Technical Training (specific to the position)
  – Non technical training (soft skills, attitudes)

• Bel V has developed internal classroom training sessions for newcomers structured on the IAEA SARCoN distributing training subjects in 4 quadrants
  – Legal basis & regulatory processes (Q1)
  – Technical disciplines (Q2)
  – Regulatory practices (Q3)
  – Personal & interpersonal effectiveness (Q4)
Systematic Approach to Training (ct’d)

• 23 technical oriented sessions
  – 5 in Q1
    (legal & regulatory framework in Belgium, introduction to SAR…)
  – 14 in Q2
    (basic principles of NS & RP, deterministic & probabilistic safety analysis, Safety culture, industrial safety, Emergency Preparedness & response, INES…)
  – 4 in Q3
    (regulatory practices for siting, licensing, inspections & modifications, decommissioning)

• 50 sessions given once or twice since 10/2009 (in 4 years)
  – Given by senior experts (mainly from FANC or Bel V)

• Q4 outsourced
  – Communication, meeting and management techniques…
Systematic Approach to Training (ct’d)

**Quadrant 1** (legal basis and regulatory processes)

Q1-1  QMS System
Q1-2  Legal and Regulatory Framework in Belgium
Q1-3  Context and activities of WENRA, Belgian Action Plan
Q1-4  NS Rules, Future Regulatory Framework
Q1-5  Introduction to Safety Analysis Reports of nuclear installations

**Quadrant 3** (regulatory practices: RC)

Q3-1  Regulatory practices for siting
Q3-2  Regulatory practices for construction and licensing
Q3-3  Regulatory practices for inspections and modifications
Q3-4  Regulatory practices for decommissioning
Quadrant 2 (technical disciplines: RS, NS)
- Q2-RS-1 Basics of radiation protection
- Q2-NS-1 Basic principles of Nuclear Safety / Basic safety concepts
- Q2-NS-2 Deterministic Safety Analysis
- Q2-NS-3 Probabilistic Safety Analysis
- Q2-NS-4 Accident Management
- Q2-NS-5 Operational Safety
- Q2-NS-6 Safety Culture
- Q2-NS-7 Scope & Boundaries of accident analysis
- Q2-Other-1 Industrial Safety
- Q2-Other-2 Physical protection
- Q2-Other-3 Transport of radioactive materials
- Q2-Other-4 Emergency Planning
- Q2-Other-5 International Nuclear Event Scale (INES)
- Q2-Other-6 Class 1 installations other than NPPs
6. Conclusions

- **2013: Reorganisation of HRM process to include SARCoN**
  - Role descriptions (+ associated tasks) X 2
  - CGA using SARCoN methodology included

- **PILOT application of CGA with SARCoN launched & completed**
  - 2 competence profiles (for 2 technical key roles) by 10 test persons
  - Self-assessment validated with coach/supervisor
  - Training Manager has performed CGA.
6. Conclusions (ct’d)

- Significant differences identified in interpretation of KSA content & level

- **Next steps:**
  - Thorough evaluation of pilot application
  - Define more detailed guidance !!

- **Future challenge:** Larger scale use of SARCoN