Example of Safety Culture assessment in Slovenské elektrárne

Technical Meeting on Developing Improvement Programmes for Safety Culture Assessments

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Slovenské elektrárne sú spoločnosťou skupiny Enel

ENERGIA PRE ŽIVOT
Slovenské Elektrárne is an Enel Group Company

- 32 countries
- 96 capacity (in GW)
- 15.7 EBIDTA (billion €)
- 61 costumers (in millions)
- 69 employees (thousands)
Slovenské Elektrárne, a. s.

**VISION**
To be the **safest**, most innovative and competitive **energy producer** in Central-Eastern Europe creating value for our customers, shareholders and employees.

**MISSION**
To **produce** and **supply** safe, affordable and environmentally friendly **energy** for all our customers.

**PRODUCER**
SE produces electricity and heat. It is the largest power generating company in Slovakia and one of the largest in Central and Eastern Europe.

**OPERATOR**
SE operates 31 hydro, 2 nuclear and 2 thermal power plants, owns directly 4,520 MW of gross capacity.
Slovenské elektrárne as a Nuclear Utility

- 31 units, 1653 MW
- 2 units, 926 MW
- 2 units, 1940 MW
- 2 units, 1.9 MW
NPP Sites EBO & EMO

EBO

Per unit: 505 MWe
since 2012

EMO

Per unit: 470 MWe
since 2008
NPP Mochovce 3&4

MO 3&4

<table>
<thead>
<tr>
<th>Reactors PWR</th>
<th>Reactors</th>
<th>Peak at MO34</th>
<th>Contractors</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 x 500</td>
<td>GEN-III</td>
<td>5 200 workers</td>
<td>150</td>
</tr>
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</table>

Peak at MO34 5 200 workers
Enel Nuclear Policy since 2011

Nuclear Safety is overriding priority above all our activities

Safety Policy of our operating organization - license holder is in line with international best practices and nuclear technology is recognized as special and unique

Safety culture is assessed regularly based on eight principles for strong safety culture in nuclear utilities
"The focus is on nuclear safety, although the same principles apply to radiological safety, industrial safety and environmental safety."

Principles for a Strong Nuclear Safety Culture

- Nuclear Safety
- Radiological Safety
- Industrial Safety
- Environmental Safety
Safety Culture - Assessment Basis

- SE Manual SE/MNA-134.01
  Assessment and monitoring of SC

- The Utilities Service Alliance (USA)

- WANO Guideline GL 2006-02:
  Principles for a Strong Nuclear Safety Culture
Safety Culture Assessment
Monitoring & Assessment of Safety Culture

Based on *WANO GL - INPO Principles for a Strong Nuclear Safety Culture*

1. Everyone is personally responsible for nuclear safety.
2. Leaders demonstrate commitment to safety.
3. Trust permeates the organization.
4. Decision-making reflects safety first.
5. Nuclear technology is recognized as special and unique.
6. A questioning attitude is cultivated.
7. Organizational learning is embraced.
8. Nuclear safety undergoes constant examination.
SE assessment & monitoring of SC
Based on SE Guideline „SE/MNA-134.01“

SC Self-assessment
Integrated with other self-assessment activities

SCI (indicators monitoring)
Observations
SC surveys (biannual)
Interviews

Independent assessment
Biannual frequency and Line independent

Focused SC assessment (in case of specific events)
Observations
Independent assessment
Interviews

Feedback – Corrective measures – Continuous improvement
SAFETY CULTURE ACTION PLAN
Independent Safety Culture Assessment

- Organized **biannually** by Nuclear Oversight

- **Independent** Assessment team:
  - Nuclear Oversight unit
  - INPO
  - Nuclear Safety Advisory Committee
  - Other power-station companies (e.g., ENDESA)
  - SE experienced specialists in SC

- **Assessment methodology:**
  - Review of **SC survey results**
  - **Interviews** and **groups discussions**
  - Field and **meeting observations**

- Since 2012 assessment has been extended also to Conventional power plants and SE central functions
Safety Culture assessment process in 2014

Questionnaire Survey
April-June 2014

Interviews
Sep-Oct 2014

Preliminary report
(Exit meeting)
10 Oct 2014

Final report
31 Oct 2014

SE Action plan

Site Action plans

Conventional Nuclear
MO34 HQ
SC Communication plan (1/2)
28 April – 6 June 2014

**APRIL**
- 15

**MAY**
- 15
- 9

**JUNE**
- 28
- 12
- 26
- 28

**SLOVENSKÁ ENERGETIKA**
**HANDOUT**
**INTRANET**
**E - MAIL**
**Posters + Totem**
**TV screens**

SCS
SC Communication plan (2/2)
<table>
<thead>
<tr>
<th>Location</th>
<th>2014</th>
<th>2012</th>
<th>Change</th>
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<tbody>
<tr>
<td>Bohunice</td>
<td>78.2%</td>
<td>(77.6%)</td>
<td>▲</td>
</tr>
<tr>
<td>Mochovce</td>
<td>94.1%</td>
<td>(82.7%)</td>
<td>▲</td>
</tr>
<tr>
<td>MO34</td>
<td>89.4%</td>
<td>(68.3%)</td>
<td>▲</td>
</tr>
<tr>
<td>Hydro</td>
<td>91.6%</td>
<td>(91.7%)</td>
<td>▼</td>
</tr>
<tr>
<td>Novaky</td>
<td>97.0%</td>
<td>(96.8%)</td>
<td>▲</td>
</tr>
<tr>
<td>Vojany</td>
<td>91.6%</td>
<td>(91.7%)</td>
<td>▼</td>
</tr>
<tr>
<td>Headquarters</td>
<td>67.4%</td>
<td>(79.7%)</td>
<td>▼</td>
</tr>
<tr>
<td><strong>SE Total</strong></td>
<td><strong>83.61%</strong></td>
<td><strong>(82.4%)</strong></td>
<td>▲</td>
</tr>
</tbody>
</table>
Positive

Principle 8 „Nuclear safety undergoes constant examination“

Negative

Principle 1 „Everyone is personally responsible for nuclear safety“
Principle 2 „Leaders demonstrate commitment to safety“
Principle 3 „Trust permeates the organization“
Safety culture assessment by principles (Survey & Interviews)

Survey results (2014)

- 104 interviews
- 3 meeting/field observations
- 2,010 individual data points (interviews)
- 271,118 individual data points (questionnaire)

Interviews results (2014)

Principle 3: Trust permeates the organization
Leaders and managers moderate the organizational culture through their behaviours and actions.

Make an effort to understand your leadership styles and organizational/safety culture.

Select leaders/managers who will “live” and promote a strong safety culture focused on developing people and processes.
2014 Safety Culture Assessment - Action Plan

- Consists of 21 focused actions

- Main focus on:
  1. Organizational changes
  2. Knowledge management
  3. Regular information to the top management
  4. Reporting of near-misses
  5. System of safety awards
Overall **Safety Action Plan** is approved by Director General in January and covers main three areas:

1. Nuclear safety and radiation protection
2. Industrial, occupational & fire safety
3. Environmental safety
Safety Culture Assessment in 2016

- Apply the same methodology as in 2010, 2012, 2014
- Focus on preparation and planning phase
- Review events caused by human factor
- Analyze findings from WANO Corporate peer-review (September 2015)
Traits of a Healthy Nuclear Safety Culture

The organization’s core values and behaviors reflect a collective commitment by all nuclear professionals to make nuclear safety the overriding priority.

PA – Personal Accountability
- Standards
- Job Ownership
- Teamwork

QA – Questioning Attitude
- Nuclear Recognized as Special and Unique
- Challenge the Unknown
- Challenge Assumptions
- Avoid Complacency

CO – Effective Safety Communication
- Work Process Communications
- Basis for Decisions
- Free Flow of Information
- Expectations

LA – Leadership Safety Values and Actions
- Resources
- Field Presence
- Incentives, Sanctions, and Rewards
- Strategic Commitment to Safety
- Change Management
- Roles and Responsibilities
- Constant Examinations
- Leader Behaviors

WP – Work Processes
- Work Management
- Design Margins
- Documentation
- Procedure Adherence

RC – Environment for Raising Concerns
- SCWE Policy
- Alternative Process for Raising Concerns

DM – Decision-Making
- Consistent Process
- Conservative Bias
- Accountability for Decisions

PI – Problem Identification and Resolution
- Identification
- Evaluation
- Resolution
- Trending

CL – Continuing Learning
- Operating Experience
- Self-assessments
- Benchmarking
- Training

WE – Respectful Work Environment
- Respect is Evident
- Opinions are Valued
- High Level of Trust
- Conflict Resolution

Individual Commitment

Management Commitment

Management Systems
Traits of a Healthy Nuclear Safety Culture

The organization’s core values and behaviors reflect a collective commitment by all nuclear professionals to make nuclear safety the overriding priority.
Thank you for your attention.