Nuclear Training Excellence Project in Slovenské elektrárne

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Elaborated by:
Alena Kvočková, SAT Team Leader
Martina Tonkovičová, Project Manager
Martin Baláž, Nuclear Training Specialist
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Stock exchange
Enel is listed on the Milan stock exchange (~1.2 mln shareholders). 14 companies of the Group are listed on Milano, Madrid, Mosca, New York stock exchanges and in other Latin American countries.

Data as of Dec.2013
1. SE Production Portfolio

**NUCLEAR**
- Bohunice NPP 1010 MW
- Mochovce NPP 940 MW

**HYDRO**
- 35 HPPs 2 399 MW

**THERMAL**
- Vojany TPP 880 MW
- Nováky TPP 518 MW

**SOLAR**
- 2 MW

*Nuclear*: Excluding the decommissioned Bohunice V1 units (1&2) which are not owned by SE

*Thermal*: Including 4x110 MW installed off-line capacity at TPP Vojany II

*Hydro*: Including run-of-the-river plant VEGA (746,4 MW) which is operated by SE but owned by Vodohospodarska vystavba; Hydro fleet consist of pumped storage and run-of-the-river plants

As of Dec. 2013
1. 2013 Results

External Benchmark

Successful results our NPPs in 2013
2. Business Needs and Strategy

Training is part of the Core Business
Prime responsibility of the operating organization is to provide adequate training to all personnel.

"Training is as important as other station activities or is an important part of the station culture or core business."
(INPO Analysis of Training Program Probations Since 2006, July 2012)

Slovenské Elektrárne Vision in Nuclear training area:

Nuclear Training to be:

• Inevitable part of day-to-day work of station employees
• Tool for management and improvement of company performance
• Tool for knowledge retention inside company
3. Project Drivers

• **Core Business Needs**
  - Need to maintain good performance results in future
  - Generation exchange - experienced employees going to retire

• **Nuclear Training Dept.’s Self-assessment**
  - **Nuclear training weaknesses identified internally:**
    - Training is understood by line managers and supervisors
    - Limited involvement of line management into training process
    - Not targeted training programs - insufficient application of SAT methodology
    - Not sufficient quality and scope of practical and dynamic training
    - Very limited resources dedicated to nuclear training

• **Independent External Reviews**
  - significant improvements in nuclear training are necessary...
4. Organizational Change in Nuclear Training Project Preparation 2011/2012

As of the 1st of September 2012:

- Number of employees of the training units has increased from 16 to 45.
- Local nuclear training units created, directly subordinated to Plant Directors in order to keep close distance to the core business.
- Centralized training unit sets strategic guidelines and common methodology for the plants, and monitors their fulfillment.
5. Project Goals 2013-2015

• **Set and implement nuclear training in accordance with the best nuclear practice:**
  
  ✓ Change understanding of nuclear training by line management – nuclear training is part of core business
  ✓ Apply Systematic Approach to Training methodology thoroughly
  ✓ Develop and start implementing new training programs

• **Prepare practical training centers in EBO and EMO for real operation.**
6. Project Organization

5 project teams

- SAT Team
- Practical Training Team
- Continuing MCR Training Team
- Documentation and Licensing Team
- Change Management Team

- Project Steering Committee
- Project Sponsor
- Project Manager
7. Project Teams and Activities

SAT Team

2013 Activities & Outcomes

- **SAT methodology localization**
  - ✔ Benchmarking (ANAV, Pakš)
  - ✔ Experience from Laguna Verde, Mexico

- **Launching Training Committees**
  - ✔ Key role of line management

- **Conduction of analysis in both NPPs - Maintenance, Safety, Operation Depts.**
  - ✔ Cooperation with SMEs

- **Ensuring IT support tool - VISION**

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Diagram:

1. **Analysis**
2. **Design**
3. **Development**
4. **Implementation**
5. **Evaluation**

- **Training Program & Plan**
- **Training Needs**
- **Systematic Approach to Training**
- **Feedback Corrective Actions**
- **Training Conduction**

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Nuclear Training Excellence Project
7. Project Teams and Activities
SAT Team

2014 Activities & Outcomes

• Implement software VISION to support SAT
• Complete analysis in both NPPs (Maintenance, Safety, Operation) in VISION
• Conduct Design phase activities at Operation & Maintenance pilot units in both NPPs – develop practical training and on the job training programs
7. Project Teams and Activities

Practical Training Team

2013 Activities & Outcomes

• Practical training centers in NPPs Bohunice & Mochovce prepared for real operation

• Practical training at both NPPs responding to actual NPPs’ needs – topics followed within the project - e.g.:
  - Practicing execution of controls – for management & maintenance personnel (Mochovce) ~ 213 personnel trained
  - Practicing the use of EPT – for maintenance & operation personnel (Bohunice) ~ 387 personnel trained
  - Practicing scraping bearings - for foremen and site locksmith at maintenance (Bohunice) ~ 62 personnel trained
  - Practicing heat-up and operation of steam pipe line - for operational support (Mochovce) ~ 230 personnel trained

2014 Activities & Outcomes

• Standardize practical training in both NPPs based on SAT
7. Project Teams and Activities

Practical Training Team

NPP Mochovce  Practical Training Center
7. Project Teams and Activities

Practical Training Team

NPP Bohunice  Practical Training Center
7. Project Teams and Activities

Continuing MCR Training Team

2013 Activities & Outcomes

Launching of the team’s activities in 3Q/2013.

- New type of scenarios was developed for 2nd half of 2013, they were verified at a pilot training

2014 Activities & Outcomes

- Develop and verify in practice methodology for continuing MCR training scenarios and programs
- Develop and verify in practice methodology for evaluation of continuing MCR training quality
- Develop methodology for evaluation of operating crew performance during continuing MCR training
7. Project Teams and Activities

Documentation and Licensing Team

Purpose of this team is to ensure that changes within this project are in compliance with the requirements of the Nuclear Regulatory Authority of the Slovak Republic.

2014 Activities & Outcomes

• Prepare project plan and timeline for insourcing theoretical training
7. Project Teams and Activities

Change Management Team

Managing „soft“ aspects of change with a goal of securing its acceptance.

2013 Activities & Outcomes

• Searching for and responding to feedback on project activities
• Communication activities e.g. – presentations at regular line meetings, articles on project topics, motivation meetings of NPPs Top Management with SMEs
• Preparation of training on SAT for NPPs in cooperation with INPO

2014 Activities & Outcomes

• Realization of training on SAT for Top Management & training personnel
  ➢ 78 employees and 5 internal lectors on SAT trained
• Preparation and realization of trainings on SAT for lower management
  ➢ 400 employees to be trained
• Realization of trainings on VISION, support IT tool for SAT
  ➢ 50 employees to be trained
• Communication and resistance management
7. Project Teams and Activities

Change Management Team