Safety Regulation of new NPP in Lithuania

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Nuclear Power Program in Lithuania

- Area - 65 300 km²
- Small nuclear power program:
  - One NPP – Ignalina NPP (2 RBMK-1500 units) – under decommissioning
  - Other nuclear facilities, related with spent fuel and radioactive waste management
  - New NPP – Visaginas NPP (EIA and site evaluation completed, proposed reactor technology – ABWR (Hitachi-GE))
Safety regulation strategy

• VATESI, as regulatory body for nuclear power safety, was created in 1991

• VATESI started preparing for licensing the design of new NPP in 2007, when correspondent National Energy Strategy was adopted by Parliament (Seimas)

• The preparation strategy included three milestones:

  1) Getting the necessary **competence**
  2) Upgrading the administrative **structure** of VATESI
  3) Drafting and improving **the legislation** governing the safety of nuclear power

*What is important for regulatory body to start and to continue effective preparation – to have **legal background** (National Energy Strategy, Law on Nuclear Power Plant or other) and **related decisions** concerning development of new NPP project*
Getting the necessary competence

Evaluation of VATESI’s staff demand

• The matrix with all additional functions was prepared by VATESI in 2007

• The aim of prepared matrix was to justify the request to Government for additional staff positions
Upgrading the administrative structure of VATESI

- Started in 2007, approved in 2008, some small changes was done 2009-2014
- Job positions: 75
- Directly reporting to the President and Government
- Head of VATESI appointed by President
- **VATESI regulation areas:**
  1) Nuclear safety
  2) Radiation safety at nuclear facilities
  3) Physical security
  4) Non-proliferation
  5) Transportation of nuclear fuel cycle materials
  6) Emergency preparedness
VATESI’s staff training

- **IAEA national projects:**
  1) LIT/9/009, Enhancing Capabilities in VATESI and Other Institutions in the Licensing of a New NPP, 2008-2011
  2) LIT/9/010, Strengthening the Nuclear Safety Regulatory Authority and Other Institutions in the Licensing of a New Nuclear Power Plant, 2012-2013
  3) LIT/9/012, Strengthening the Nuclear Safety Regulatory Authority and Other Institutions for the Possible Licensing of a New Nuclear Power Plant, 2014-2015 m
  4) LIT/9/014, Enhancing the Regulatory Infrastructure in Line with International Safety Standards, 2016-2017 m.

- **Examples of trainings:**
  - Training course on BWR/ABWR technology, NRC course R-104B (usually yearly, 3-4 employees)
  - Site evaluation in the nuclear regulatory process (European Nuclear Safety Training&Tutoring Institute, ENSTTI, 2015)

- **IAEA regional TC projects**

- **Other possibilities** (for instance, bilateral cooperation with Japan NRA)
Preparation of nuclear safety legislation (1)

- **2007**: evaluation of existing nuclear safety legislation and identifications of gaps.

- **2008**: started preparation of nuclear safety requirements for new NPP due to eliminate identified gaps. **The main achievements (published documents):**
  - **2010**: Nuclear Safety Requirements BSR-2.1.3-2010 “General requirements on site evaluation for nuclear power plants“.
  - **2011:**
    1) The amendments of the main laws - new versions of the Law on Nuclear Energy, the Law on Radioactive Waste Management, amendment to the Law on Radiation Protection and other and a new Law on Nuclear Safety were adopted
    2) Nuclear Safety Requirements BSR-2.1.4-2011 “Preparation and Use of the Nuclear Power Plant’s Safety Analysis Report“;
  - **2015**: Nuclear Safety Requirements BSR-2.1.5-2015 “Commissioning of Nuclear Power Plant”.

- **Preparation of remaining nuclear safety requirements for design and operation of new NPP is ongoing taking into account the actual status of implementation of new NPP project**
The Role of International Peer Reviews

- Final Summary Report (2\textsuperscript{nd} Extraordinary Meeting of the Contracting Parties to the CNS, 27-31 August 2012, Vienna, Austria):

  - International Peer Review missions involving experts from other Contracting Parties \textit{can play an important role in achieving and maintaining} a high level of safety with respect to nuclear installations”

    - Lithuanian participation in European “stress test” exercise and their peer review (12-15 March 2012)

    - IAEA expert missions to review draft national nuclear safety requirements (24-27 May 2010; 5-9 May 2014)

    - IAEA IRRS mission (planned 17-29 April 2016)

www.ensreg.eu/EU-Stress-Tests
STRUCTURE OF NUCLEAR SAFETY REGULATIONS

- Basic international, European Union and national legislation on nuclear power safety
  - Fundamental safety principles
  - Fields of regulation
    - Basic requirements and rules of safety
      - Organization of state regulation
      - Non-proliferation of nuclear weapons
      - Emergency preparedness
      - Management system
      - Decommissioning
      - Physical security
      - Fire safety
      - Safety assessment
      - Radiation protection
    - Special requirements and rules of safety
      - Requirements and rules on nuclear power plants safety
        - Site evaluation, design, construction, operation and decommissioning of nuclear power plants
        - Site evaluation, design, construction, operation and decommissioning of radioactive waste treatment and storage facilities
        - Site evaluation, design, construction, operation of radioactive waste repositories, surveillance of closed radioactive waste repositories
        - Requirements and rules on transportation of nuclear, fissionable and nuclear fuel cycle materials safety
        - Transportation of nuclear, fissionable and nuclear fuel cycle materials
      - Requirements and rules on radioactive waste management safety

Conclusions

• **Clarity** (Legal background and related decisions concerning development of new NPP project)

• **Competence** (identification of necessary functions; to engage proper number of experts; to arrange trainings)

• **Legislation** (in line with IAEA, EU, WENRA and other good practice)

• **International cooperation** (international peer reviews, training courses, sharing of experience)
Thank you!