

Human Resources points of attention for the nuclear decommissioning industry: Ignalina NPP experience



Tomas Liukaitis

Director of Corporate Affairs & Administration



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Ignalina NPP

Design and operation



Design: Unique, 2 × RBMK-1500 water-cooled, graphite-moderated channel-type power reactors. Designed and staffed for fully autonomous operation



Capacity: Intended to supply NW region of former USSR (not Lithuania). After independence, one unit could produce 80% of Lithuanian electricity demand



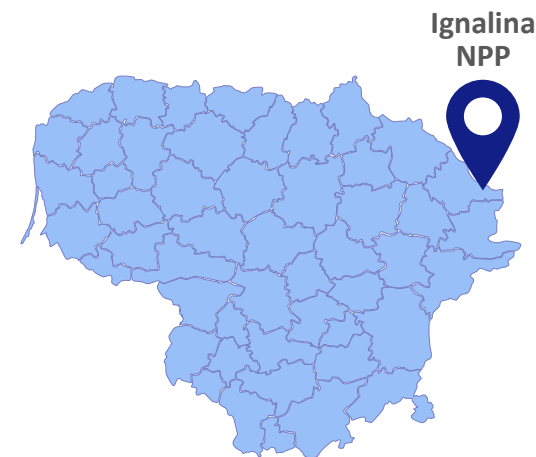
Operation:

Unit 1 commissioned Dec 1983 / closed Dec 2004

Unit 2 commissioned Aug 1987 / closed Dec 2009



Early closure: Required to facilitate EU accession. **First decommissioning of RBMK-type NPP**



Ignalina NPP

Decommissioning



Strategy: Decided by Government – **immediate** dismantling performed by the plant’s operational workforce. Final Decommissioning Plan issued 2005



Progress: Planning started 2001. Investment projects to open waste-routes started 2003. Dismantling within plant started 2010 (Unit 1) and 2014 (Unit 2)



Licensing: Plant is still licensed as “operating” because of nuclear fuel in the reactor units. Fuel remains due delay in completing new spent fuel interim storage



Schedule and cost: Completion by end 2038
Cost approx. 2.6 billion euro (no risks, no inflation)



Staffing: A key factor in immediate dismantling that is being implemented using INPP’s own resources. INPP by far the main employer in the region



INPP human resources points for attention

Transformation of an operating NPP to a decommissioning company has significant influence on human resources management



Challenges

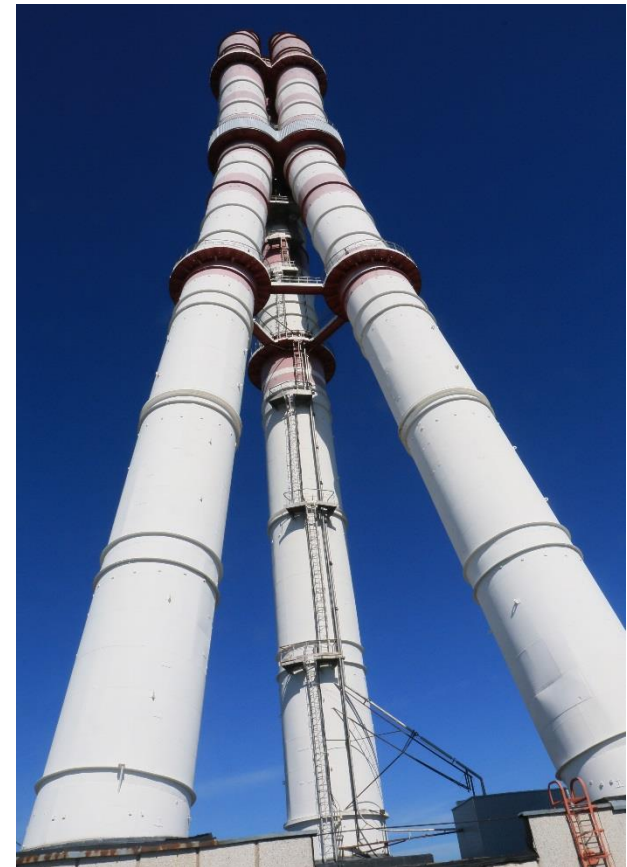
Organizational changes according to the needs of different decommissioning phases

Long-term staff planning strategy for decommissioning demands

Development of required decommissioning competences and staff training

Staff retention strategy according to the requirements in decommissioning activities

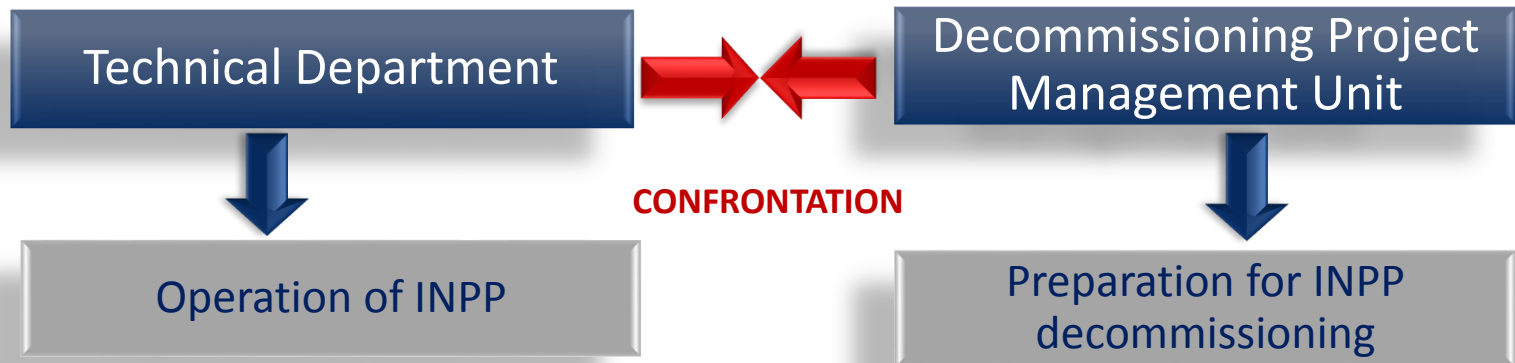
Staff ageing and recruitment of young professionals to key positions



Transformation to Decommissioning Organization



Organizational changes in 2000-2009



- DPMU established in 2000 for preparation for decommissioning
- DPMU accumulated project management, planning competences, external consultancy services, but lacked adequate specialist RBMK technical expertise for decommissioning



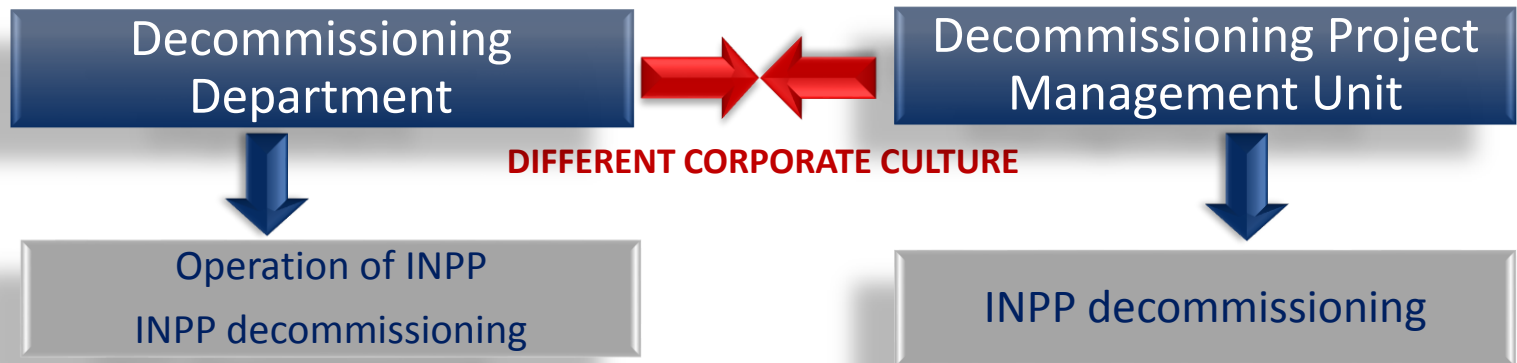
Challenge: Top managers completely focused on operation and only reservedly committed to decommissioning, lack of technical skills in DPMU

Solution: Increase the role of the Technical Department in Decommissioning

Transformation to Decommissioning Organization



Organizational changes in 2010-2012



- DD responsible for operation and decommissioning activities while DPMU responsible for key decommissioning projects management
- Technical knowledge and project management skills accumulated in two separate units (DD vs DPMU)
- As a result – delays in implementing key decommissioning projects (Interim Spent Fuel Storage Facility, Solid Waste Management Facilities) and tense relationship with contractors



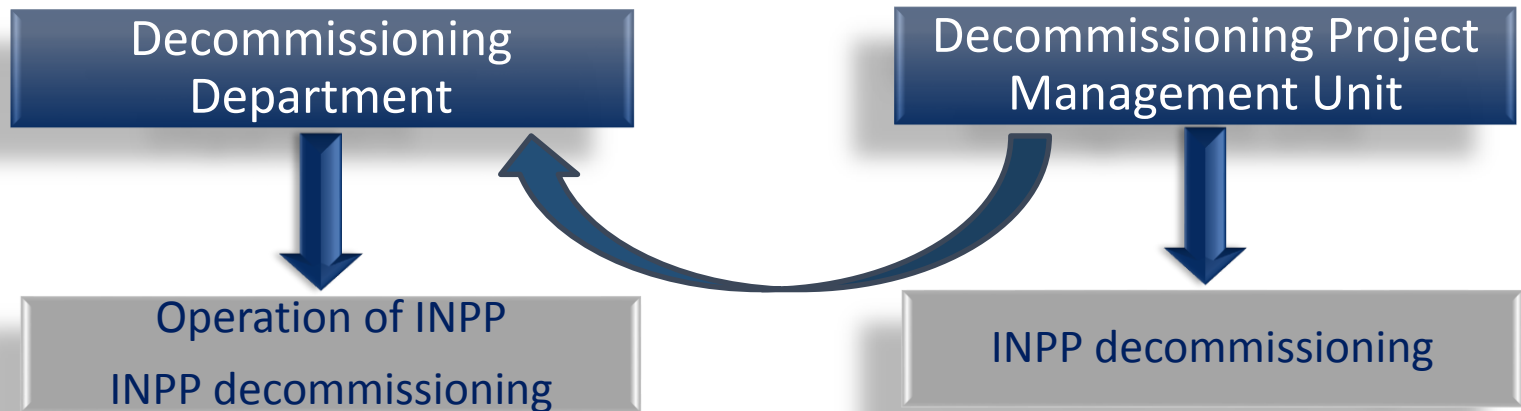
Challenge: to integrate activities of two separate units for efficient decommissioning planning and implementation

Solution: Join the two units led by one experienced Senior Manager

Transformation to Decommissioning Organization



Organizational changes in 2012-2014



- DPMU integrated into Decommissioning Department
- Technical knowledge and managerial skills accumulated in one structural unit
- Decommissioning Department staff responsible for operational activities and key decommissioning projects



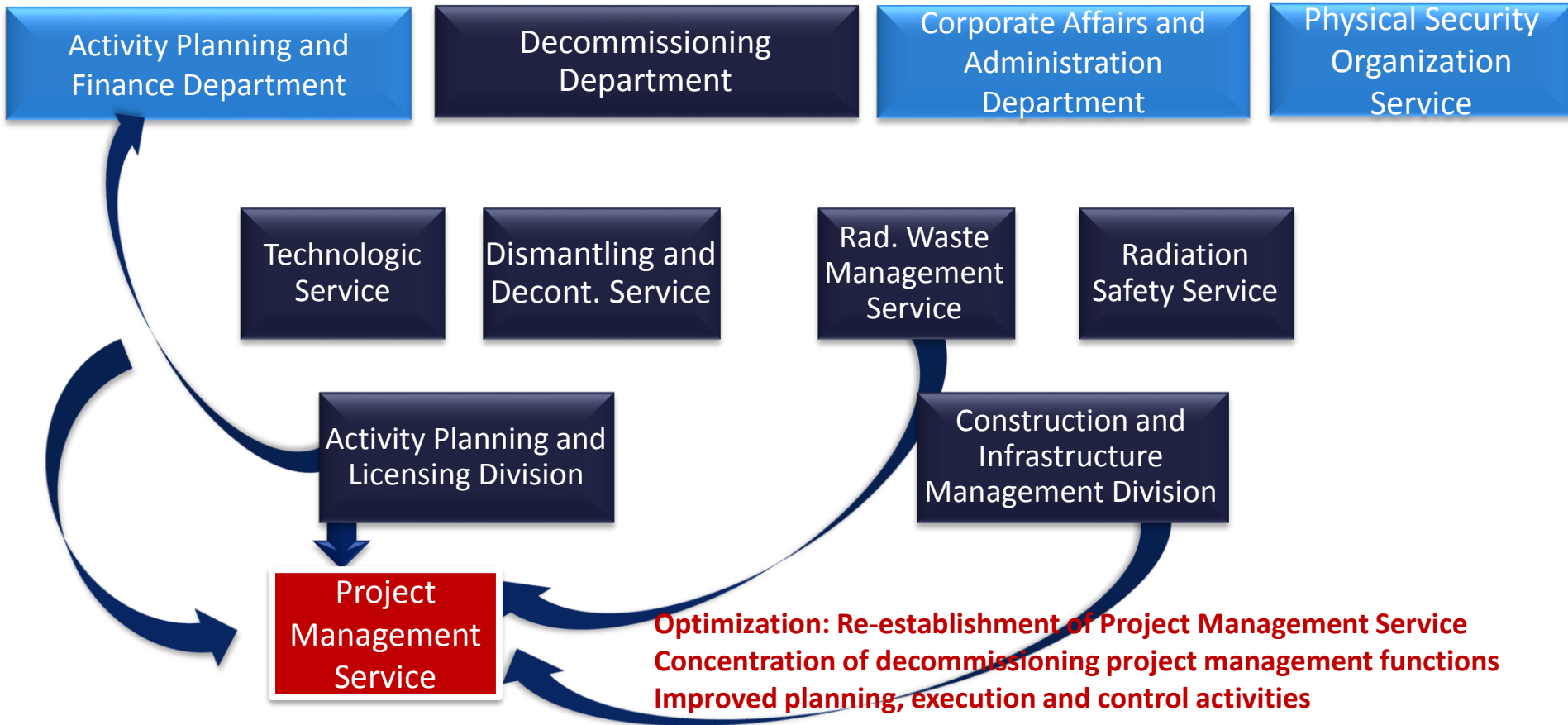
Challenge: to preserve project management skills while integrating into operation staff structure

Solution: consolidate teams then optimize their use

Transformation to Decommissioning Organization



Organizational changes in 2014-2015



Transformation to Decommissioning Organization



Organizational changes in 2015-2016



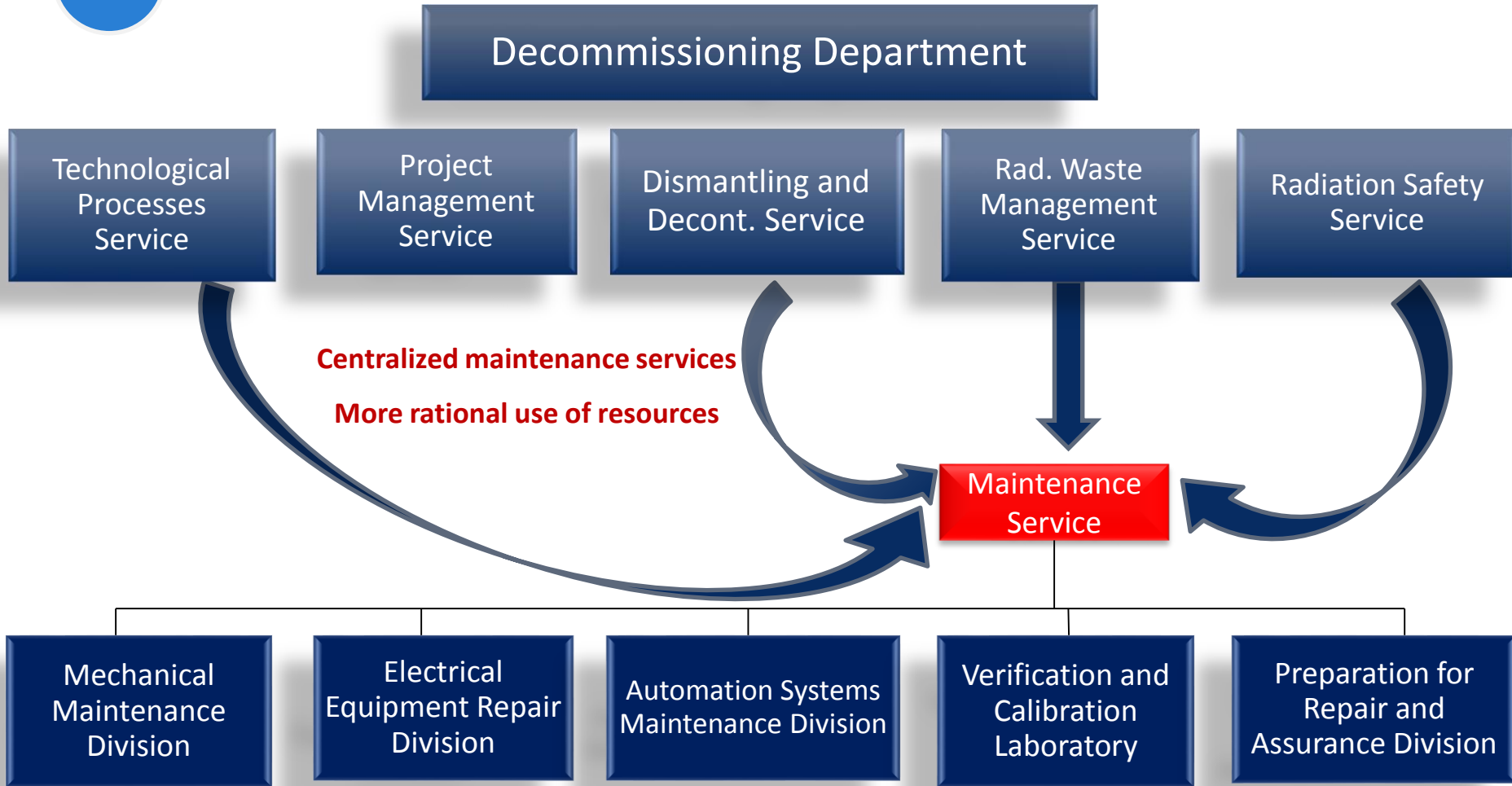
Business process optimization
Increased dismantling efficiency



Transformation to Decommissioning Organization



Organizational changes in 2016-2017



Transformation to Decommissioning Organization



LESSONS LEARNED:

- **DO** require top management full commitment to decommissioning immediately the decision to decommission the nuclear power plant is taken
- **DO** consider decommissioning to be the main activity while preparing for decommissioning not while executing it
- **DO** prepare integrated structural transformation strategy in advance but implement step by step at the right time according to the NPP's final goal
- **DO** consider continuous improvements of organizational structure according to future decommissioning needs
- **DO** consider attracting highly committed managers before start of decommissioning for smooth organizational transition
- **DO** start integration of operation and decommissioning knowledge as soon as possible in order to avoid emerging of two separate disintegrated organizations
- **DO** seek to flatten organizational structure for quicker decisions, lower costs and efficient communication
- **DO** communicate changes properly in order to ensure staff support and high engagement

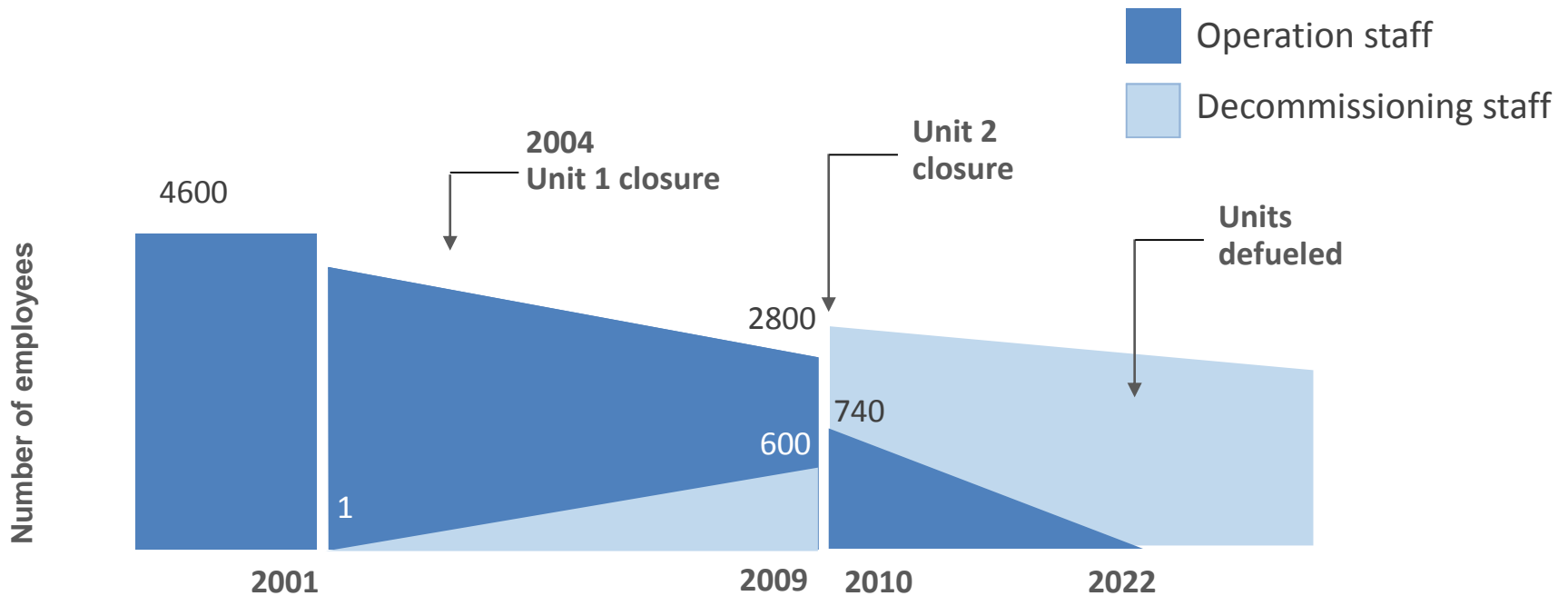
Long-term staff planning strategy



Challenge: The required number of qualified personnel for decommissioning activities is needed at the right time



Importance of personnel long-term planning: to develop a long-term strategy for decommissioning staff once the decision on decommissioning is made



Long-term staff planning strategy



LESSONS LEARNED:

- **DO** perform a thorough analysis and long-term planning before decommissioning started in order to identify staff needs for the whole decommissioning period
- **DO** promote top management commitment to long-term planning for decommissioning staff once the decision on decommissioning is made to avoid shortage of competent staff
- **DO** consider thoroughly your redundancy plan to avoid the loss of qualified staff needed for future decommissioning works. Re-employment of former specialists is complicated

Decommissioning competence and training



Challenge: to ensure the required number of qualified employees according to INPP's needs in decommissioning activities

safe nuclear facility decommissioning requires specific knowledge and psychological preparation

- *Former operators are still employed and have the knowledge useful for the projects*
- *but*
- *INPP needs specific competences for decommissioning (project management, finance, risk management, process optimization, etc.)*



Training of motivated staff is being performed continually

Employing new highly experienced and unique-knowledge staff

LESSONS LEARNED:

- **DO** perform retraining for decommissioning activities of only motivated staff
- **DO** train staff for new technical as well as for managerial skills
- **DO** consider outsourcing for results-oriented short-term contracts to ensure the required knowledge at the right time

Staff retention strategy



Challenge: Loss of trained qualified staff leads to the loss of knowledge and expertise that are necessary for safe and efficient implementation of decommissioning activities



Purpose: To retain required number of qualified employees according to INPP's needs in future works

Results-oriented tools to retain qualified staff:

- **New result-oriented remuneration system**
linked to job positions evaluation, employees work results, employees performance evaluation
- **Knowledge accumulation and preserving system**
applied in order not to lose useful knowledge of retiring or dismissed employees
- **Employee performance evaluation**
a continuously functioning instrument created for the manager and employee to discuss over the objectives of activities, progress, issues and alterations
- **Measuring employee satisfaction, motivation and engagement**
to identify main reasons why employees do not feel motivated, engaged and loyal to the company, what changes and tools might increase employees engagement

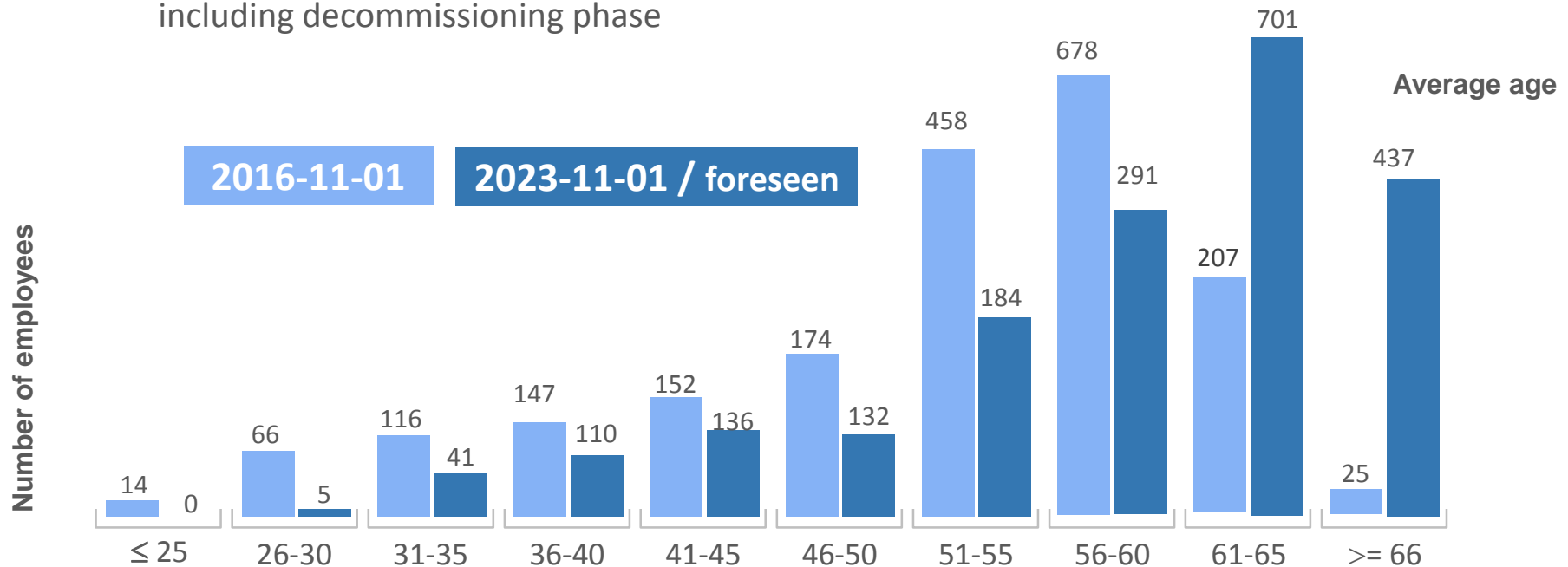
Staff ageing problem



Staffing: A key factor in immediate dismantling because INPP is by far main employer in local region and operators have essential knowledge



Challenge: Ageing workforce causes certain risks to continuity of some decommissioning activities, loss of the accumulated knowledge and experience. Adequate number of competent staff must be available during all phases of a nuclear power plant life cycle including decommissioning phase



Young professionals recruitment strategy



Challenges: Recruitment and retention of young professionals with specific competences is complicated due to decommissioning exclusivity in Lithuania and specific location of INPP

Nuclear energy training programs are not available in Lithuania

INPP would be more attractive due to continuity of nuclear energy policy in Lithuania, however development of a new NPP project was suspended

Actions taken:

- Knowledge accumulation and preserving system applied in order not to lose useful knowledge of retiring or dismissed employees
- Recruiting mostly local residents and staff training is performed internally using own resources



INPP highly appreciates and welcomes international decommissioning training and career projects (such as ELINDER) for knowledge exchange and young specialists training in nuclear decommissioning



Tomas Liukaitis

Director of Corporate Affairs & Administration
State Enterprise Ignalina Nuclear Power Plant

Drūkšinių km, Visagino sav
LT-31500, Lithuania

Phone +370 386 28985

Fax +370 386 24396

E-mail iae@iae.lt



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