



**PLIM and LTO Implementation Activities Performed for  
Czech Nuclear Powerplant managed by Nuclear Research  
Institute**

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# 1 Base for PLIM and LTO

Status of general up to date knowledge and resulting requirements represented mainly by:

- Technical Reports Series No. 448 – Plant Life Management for Long Term Operation of Light Water Reactors
- Draft Safety Guide DS382- Ageing Management for Nuclear Power Plants
- Draft Safety Report Series Safe Long Term Operation of Nuclear Power Plants
- Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants
- Generic Aging Lessons Learned (GALL) Report

## Legislative Requirements:

- successful FSAR (Decision of the SÚJB 24273/2005 for 1st reactor unit and 55714/2006 for 2nd reactor unit - EDU)
- successful PSR for 1st and 2nd reactor unit (Decisions of SUJB 19172/2004 and 19173/2004 )
- to fulfill requirements of Decision 132/2008 (the operator of NPP must document the state of selected SSCs - remaining lifetime).

*SUJB ... State Office for Nuclear Safety*

## 2. Activities performed

From 2003 to 2006: Project partly sponsored by Czech Ministry of Industry and Trade: “ASSURANCE OF LONG-TERM LIFETIME AND EFFICIENCY INCREASE OF NUCLEAR POWER PLANTS IN THE CR”

-In frame of this project:

- the review of current ageing management status of mechanical SCCs was performed (interim study for NPP Dukovany)
- general methodology for plant life management and specific methodology for ageing management of mechanical SCCs were created

## Activities performed – continuation:

Since 2006 the preparation of LTO Program for Dukovany NPP has started in three consequent steps:

- Technical and Economical Study for the LTO
  - calculation of economic profitability (cost drivers defined in IAEA TEC DOC 1309)
- Evaluation of Safety Aspects of LTO
  - Assessment of current state of safety related programs and theirs sufficiency for extended operation
- Technical Development Plan
  - Plan (structured list) of all necessary safety and cost important actions needed for realization of operation beyond originally projected life time of NPP – currently more than 300 actions

### **3. International Feedback from Performed Activities**

In 2008 upon the invitation of the State Office for Nuclear Safety and with cooperation of NPP Dukovany a peer review mission on safe long term operation (SALTO) was provided to review programmes/activities of Dukovany Nuclear Power Plant (NPP):

- the team noticed good practices
- the team pinpointed areas with room for further improvement
- the team noticed that many activities were in initial stages

The outputs from IAEA mission were taken into accounts in further (planned, already started) actions for PLIM Program and LTO Program implementation

## 4 New activities

New activities are realized mainly by Nuclear Research Institute Rez in mutual cooperation with NPPs and with technical collaboration with others Czech organizations. The most important activities are:

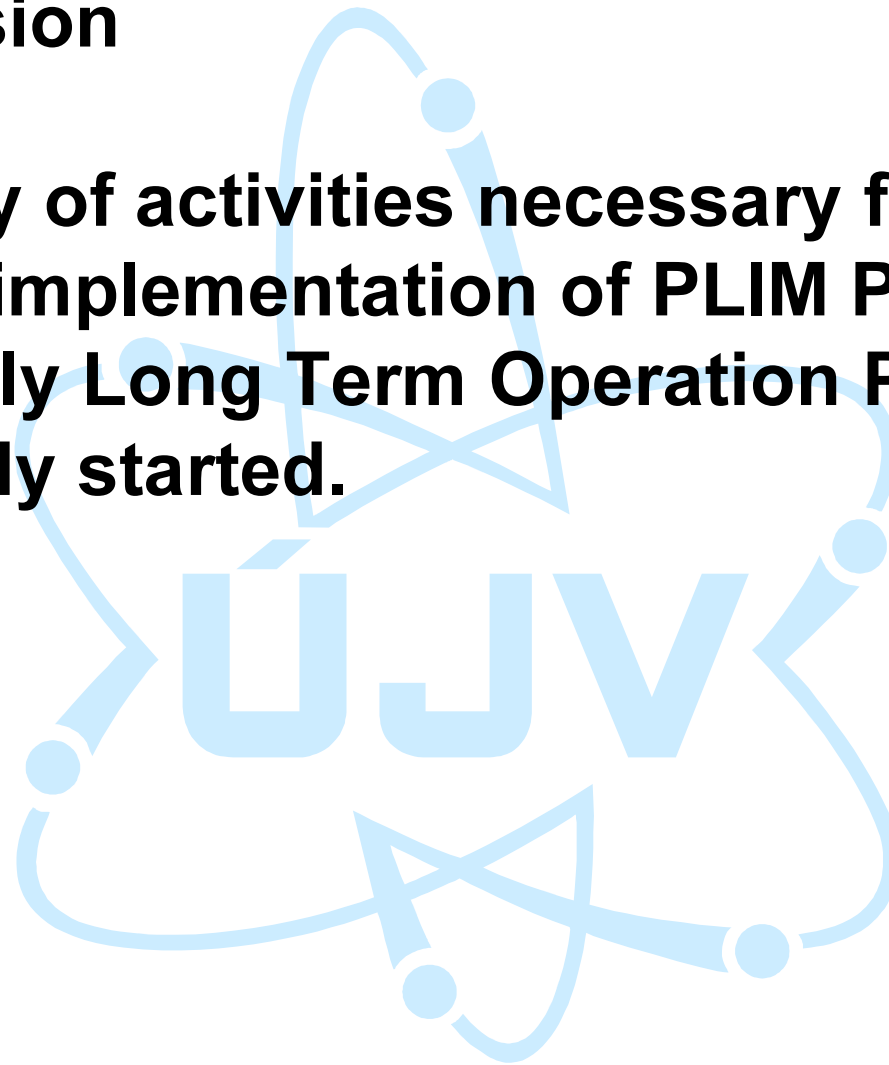
- ageing management review of containment of Temelin NPP ... has just been finished
- program of periodic actualization of Dukovany LTO Program (Technical Development Plan) ... in progress
- ageing management review of I&C SSCs (NPP Temelin) ... in progress
- development of specific methodology for ageing management consistent with PLIM and LTO requirements of I&C, Electrical components and Structures (NPPs Dukovany & Temelin): ... in progress

## 4 New activities - continuation

- update of ageing management programs and processes where room for improvements with respect to komplex PLIMP and LTO Program was identified... in preparation phase
- program of periodic reporting to the National Body ... in progress
- ageing management review of I&C, Electrical components and Structures of NPP Dukovany ... in preparation phase
- new Integrated ageing management program for Temelin containment (PLIM Program without economy functions) ... in preparation phase
- definition of general functions of NPP PLIM Program (software, economy, presentation and coordination function requirements) ... in preparation phase

### 3 Conclusion

**The majority of activities necessary for successful implementation of PLIM Program and consequently Long Term Operation Program has been already started.**





**Thank you for your attention.**

