

EXECUTIVE SUMMARY

At the invitation of the Government of Republic of Bulgaria, the IAEA conducted a SALTO (Safety Aspects of Long Term Operation) mission at Unit 5 and 6 of the Kozloduy Nuclear Power Plant (NPP) (further referred to as ‘the plant’) from 6 to 5 July 2021.

Kozloduy NPP Unit 5 and 6 started commercial operation in 1987 and 1991, respectively. The Bulgarian Nuclear Regulatory Agency (BNRA) renewed the operation licences until 2027 for Unit 5 and 2029 for Unit 6.

The SALTO mission reviewed the status of activities related to long term operation (LTO) assessment of the plant against IAEA Safety Standards and international best practices. The review team consisted of two IAEA staff members (team leader and deputy team leader), six international experts and one observer, covering all six areas of the standard scope of a SALTO mission. The team reviewed the completed, in-progress and planned activities related to LTO, including ageing management of the structures, systems, and components (SSCs) important to safety and revalidation of time limited ageing analyses (TLAAs). Through the review of available documents, presentations, and discussions with counterparts and other members of the plant staff, the IAEA team observed in the field of ageing management and preparedness for safe LTO that some topics are managed as recommended by the IAEA safety standards and other topics are planned to be addressed in upcoming years. Many activities are still in progress.

The team found the plant staff to be professional, open and receptive to proposals for improvement. The mission team observed that plant management is committed to improving plant preparedness for LTO. Walk-downs showed the plant is in good condition. In addition, the team noted the following good performances:

- A comprehensive configuration management process has been developed and established at the plant in support of LTO.
- Detailed evaluation of modifications on the ageing management review enabling the plant to identify the impact on ageing management from an early stage in the process.
- Specific section in ageing management programme implementation reports dedicated to needed improvements to communicate to higher management level.
- Comprehensive annual visual inspections of civil structures that enables the plant to identify ageing effects at a very early stage.
- Monitoring of level of prestress of containment tendons.
- Systematic strategical cooperation with technical universities and high schools to support meeting future staffing needs for the long term operation period.
- Comprehensive information system to monitor and evaluate risk of loss of tacit knowledge that ensures an opportunity for early intervention.

The team recognized that the plant’s intention is to follow the IAEA Safety Standards in preparation for safe LTO. The team identified several areas for further improvement. Eight issues were noted:

- The scope setting of SSCs for LTO is incomprehensive.
- The ageing management review for mechanical SSCs and cables is not completed.
- The ageing management programmes for mechanical SSCs are not fully developed and implemented.
- The TLAAs development and implementation for mechanical SSCs is not completed.
- The implementation of ageing management programmes for cables is not completed.

- The equipment qualification programme is not yet fully implemented at the plant.
- Ageing management review for extended scope of civil structures is not completed.
- Some aspects of human resources policy and strategy are incomplete for the whole LTO period.

A summary of the review was presented to the plant management during the exit meeting held on 15 July 2021. The plant management expressed a determination to address the areas identified for improvement and indicated their intention to initiate the invitation of a ‘SALTO Peer Review Follow-up Mission to Kozloduy Nuclear Power Plant’ to be conducted in June 2023.