

## EXECUTIVE SUMMARY

Upon the invitation of the Hungarian Atomic Energy Authority (HAEA), a safe long term operation (SALTO) peer review mission was provided on the continued operation of Paks Nuclear power Plant Unit 1 (further referred as “the plant”). The mission was conducted in conjunction with the license renewal programme of Paks Nuclear Power Plant and under corresponding IAEA Technical Cooperation Programme TC HUN 4/017.

Also the IAEA was requested to perform peer review of selected parts of the licence renewal documentation developed by the plant for submission to the HAEA, in support of long term operation at Paks plant. The standards on which the review was based were the relevant IAEA standards, reports and international best practice.

Regulatory requirements for the license renewal (LR) of the plant were established by the HAEA. The main objective is the extension of the plant operating license to 20 years beyond its design life. The first plant unit to be assessed in the framework of HAEA regulations is the Unit 1, which reaches its design life in 2012.

In accordance with agreed Terms of Reference, the mission reviewed the following areas and relevant sections of the Licence Renewal documentation:

- Basic principles; regulatory requirements, preconditions for LTO
- Scoping and screening process, identification of SSCs for LTO and assessment methodology
- Integrated plant assessment (including Ageing Management Review, Ageing Management Programmes and evaluation of AMP, maintenance, ISI, surveillance);
- Environmental qualification for electrical and I&C components, ageing management and EQ for electrical and I&C components
- Assessment and management of civil structures for ageing degradation for LTO
- Revalidation of safety analyses that used time limited ageing assumptions

During the review, the IAEA team found that comprehensive plans have been prepared and extensive engineering work has been performed to review ageing degradation and implement ageing management programmes as part of the license renewal process. The plant established a specific division which is dedicated to conducting activities related to the continuous operation. The IAEA team observed that the plant and the TSOs have been performing extensive engineering work to accomplish the LR programme objectives. Sound engineering approaches and capability are behind the work.

In addition, the team noticed good practice in area of Electrical and I&C systems and components management where:

- Plant applies systematic approach in cable ageing management and environmental qualification through a cable database;
- In the area of Electrical and I&C systems and components management the team regarded the plant application of a systematic approach in cable ageing management and environmental qualification through a cable database as a good practice.

Also use of Maintenance Training Centre was recognized as good practice with respect to activities and inspection and maintenance needs related to continued long term operation.

Taking into account the above mentioned points, the team recognized that the plant approaches and work for safe long term operation are basically following IAEA Safety Standards and international practices.

Nevertheless, the team noticed that actual plant activities are still ongoing. The team suggested to the plant management to facilitate prompt implementation of necessary related activities. In addition, the team identified areas with room for improvement and made 18 recommendations and 8 suggestions in particular areas.

The summary conclusions of the review were presented to the plant management during the exit meeting held on Thursday 09 June 2011.

Appendix III of this report includes the detailed recommendations issued by the team.

## FOLLOW-UP MISSION

A follow-up mission was performed during 8–11 April 2013 and the follow-up team consisted of one IAEA staff member, three external experts and four observers. Participating experts from Belgium and Brazil were members of the original SALTO team in 2011 and also one expert from Sweden was taking part in the visit. Observers from the Ukraine, Sweden, the Czech Republic and Bulgaria were also members of the follow-up team. The follow up mission was organized in accordance with results of the main SALTO mission and under corresponding IAEA Technical Cooperation Programme TC HUN 4/017. The SALTO Follow-up report is the original report from the main mission supplemented with the “counterpart actions” in issue sheets’ section 5. This is reviewed by the Follow-up IAEA review team prior to the Follow-up mission and confirmed in the field during the visit. “Follow-up Assessment by the IAEA Review Team” is then added in light of the Follow-up mission into issue sheets’ section 6. The IAEA conclusion is produced in issue sheets’ section “Resolution Degree”. “Status at follow-up SALTO mission” is prepared by the IAEA team for each review area. This resulting document is therefore an overall report of both the original mission and the follow-up mission.

During the original full scope SALTO peer review mission in 2011, thirteen issues were defined in six reviewed areas. The follow-up team reviewed the progress in issues solving separately for each of those issues and also separately for each recommendation and suggestion contained in issue sheets. The team has concluded that the plant performed a significant work to solve those issues. The resolution degree was determined by the team for each issue sheet separately with results as follows:

Insufficient progress to date - 1 issue;

Satisfactory progress to date – 5 issues;

Issue resolved - 7 issues.

The detailed evaluation of plant actions is provided in Appendix III of this report in a section 6 of each individual issue sheet. Additional evaluation is provided for each review area in a “Status at follow-up SALTO mission” subsection of each review area.