

EXECUTIVE SUMMARY

Upon the invitation of the State Office for Nuclear Safety in Czech Republic, a peer review mission on safe long term operation (SALTO) was provided to review programmes/activities of Dukovany Nuclear Power Plant (NPP).

The Dukovany NPP (hereinafter the plant) is the first nuclear power station operated in the Czech Republic, and belongs to the largest, highly reliable and economically profitable power resources of ČEZ, a. s. Four pressurized-water reactors (PWR) are installed in the Dukovany NPP. Design marking of these reactors is WWER 440/213. Each of these reactors has the heat capacity of 1375 MW and electric capacity of 440 MW. Annual production of electric energy is 13 TWhr, approximately, this represents about 20 % of the total consumption of the electricity in the Czech Republic.

In 2015, the Unit 1 of Dukovany NPP reaches the end of its design lifetime. Renewal of the permission for further operation of the plant will be connected not only with the certificate of ability of the nuclear power plant to maintain the required safety level in the future, but also with documentation of the method of monitoring and corrections (mitigation) of equipment ageing effects on the safety of the nuclear power plant and with setting-up all relevant programmes so that the ageing effects are effectively managed over the entire period of the anticipated operation of the nuclear power plant.

The plant conducted a technical and economical study for long term operation to investigate feasibility of long term operation. The study was finished in 2006. The plant is now performing an engineering study for SALTO and establishing ageing management programmes (AMPs) for SSCs important to safety and a plant life management programme (PLIMP).

The mission reviewed activities performed by the plant related to SALTO and ageing management of systems, structures and components (SSCs) important to safety.

The IAEA team found that comprehensive plans are being prepared and extensive engineering work has been launched to review ageing degradations and implement ageing management programmes. In addition, the team noticed good practices and good performances in areas such as follows:

- Corrective measures based on Safety Issues defined by the IAEA for the WWER 440;
- On going cable ageing management programme;
- The analysis using the database on I&C reliability recording;
- The INFOZ database;
- Seismic re-qualification for piping and components;
- Design fatigue analyses, its update and the tool DIALIFE;
- Fatigue monitoring;
- Data management tool for erosion corrosion;
 - Post annealing re-embrittlement evaluation.

Taking into account of the above mentioned points, the team recognized that the plant approaches and initial preparation work for safe long term operation are in line with international practices.

Nevertheless the team also noticed that actual plant activities were in the initial phase. The team suggested to the plant management to facilitate early implementation of related activities. In addition, the team raised some areas which are to be improved or have a room for further improvement and raised 19 issues including:

- Plant/company policy documents;

- Selection of SSCs for LTO;
- Equipment Qualification;
- Ageing Management of Electrical Equipment;
- Proactive management of degradation;
- Data bases for maintenance and RPV ageing management;
- Time limited ageing analysis including environmentally assisted fatigue;
- Safety analyses in FSAR and PSR;
- Ageing management for thermal fatigue; and
- Erosion corrosion of welds.

The summary conclusion of the review was presented to the Dukovany NPP plant management during the exit meeting held on 25 April 2008.

This report includes the detailed recommendations issued by the Team.