

## EXECUTIVE SUMMARY

This report describes the results of the OSART mission conducted for Olkiluoto Nuclear Power Plant in Finland from 27 February to 16 March 2017.

The purpose of an OSART mission is to review the operational safety performance of a nuclear power plant against the IAEA safety standards, make recommendations and suggestions for further improvement and identify good practices that can be shared with NPPs around the world.

This OSART mission reviewed thirteen areas: Leadership and Management for Safety; Training and Qualification; Operations; Maintenance; Technical Support; Operating Experience Feedback; Radiation Protection; Chemistry; Emergency Preparedness and Response; Accident Management; Human, Technology and Organization Interactions; Long Term Operations; and use of PSA for Plant Operational Safety Improvements.

The team noted the strong commitment to safety of the plant management and staff. Particularly noteworthy is the comprehensive plant modernisation programme being implemented to ensure safe and reliable operation of the plant beyond its original design life.

The team identified 19 issues leading to 10 recommendations and 9 suggestions that, if addressed, will assist the plant in their drive for continuous improvement in safety and excellence. The examples of outstanding practices and performance identified by the team during the mission will be disseminated to the rest of nuclear community via the IAEA OSMIR data base.

The most significant areas of good performance were:

- Strong capabilities to perform comprehensive probabilistic safety assessments to estimate risks and use the results from such assessments for plant safety improvements.
- Active participation with other Nordic countries to share experience in NPP operation and use the results for prompt safety improvements and development of equipment reliability databases.
- Extensive support provided by the plant to research institutions on studies related to the management of potential severe accidents.

The most significant issues which need improvement were:

- The plant should enhance management processes, the setting of expectations and the supervision of activities to ensure high safety performance and resolution of identified deficiencies in a timely manner.
- The plant should improve its modification programme to ensure that plant modifications are properly identified, specified, screened, designed, evaluated, and implemented in an effective manner.
- The plant should provide robust emergency facilities to ensure effective implementation of the emergency response actions and appropriate emergency response arrangements for the protection of the personnel.

- The plant should complete the review of ageing management programmes and revalidation of time limited ageing analyses for structures and components within the scope for long term operation.

Olkiluoto NPP management expressed their commitment to address the issues identified and invited a follow up visit in about eighteen months to review the progress.