INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

In the frame of the Joint Project of European Commission, International Atomic Energy Agency (IAEA) and Ukraine on the safety evaluation of Ukrainian NPPs, an IAEA Operational Safety Review Team (OSART) of international experts visited units 1 and 2 of South Ukraine Nuclear Power Plant (SU NPP) from 2 to 9 November 2009.

SU NPP is part of the fleet of the Ukrainian nuclear utility NAEK and has three 1000 MWe VVER units in operation on the site. The reactor types are slightly different, unit 1: V-302, unit 2: V-308 and unit 3: V-320. Unit 1 was connected to the grid in 1982, Unit 2 in 1985 and Unit 3 in 1989. SU NPP is located in Nikolaev region on the left bank of the middle course of the South Bug river.

An OSART mission was conducted on Unit 3 from 9 to 25 October 2006 and a follow-up visit was conducted from 30 March to 3 April 2009. An IAEA expert mission was performed from 6 to 9 April 2009 to evaluate the status at SU NPP of issues identified by the OSART missions to other Ukrainian NPPs.

Therefore the OSART mission to units 1 and 2 was decided to be limited both in scope and time. The limited scope included the review of operating practices in the core areas of Management organization and administration; Operations; Maintenance; Technical support; Operating experience and Radiation protection. The scope of the review within each of the above areas was further limited to subjects selected based on analysis of the results of the 2006 OSART mission, the 2009 follow-up visit and the 2009 expert mission. At the same time it was decided that the issues identified in the 2006 OSART mission should not be evaluated again, since it was the scope of the 2009 follow-up visit which concluded that each issue either had been resolved or was progressing to resolution in a satisfactory manner.

The team noted that numerous action plans and projects are in the implementation phase both at the plant and at the utility NAEK. These action plans and projects have been initiated based on self assessments and past independent reviews and they serve the goal of improving operational safety. The fact that all issues identified during the 2-9 November mission fall into the category of suggestion can be attributed to the above action plans and projects being in progress.

The SU 1 & 2 NPP OSART mission was the 154th in the programme, which began in 1982. The team was composed of experts from Finland, France, Hungary, Lithuania, European Commission and United Kingdom, together with the IAEA staff members and observers from China and France. The collective nuclear power experience of the team was 183 years.

Before visiting the plant, the team studied information provided by the IAEA and the plant to familiarize themselves with the plant's main features and operating performance, staff organization and responsibilities, and important programmes and procedures. During the mission, the team reviewed many of the plant's programmes and procedures in depth, examined indicators of the plant's performance, observed work in progress, and held in-depth discussions with plant personnel.

The team also noted that the plant is implementing a comprehensive programme of design safety improvements aimed at decreasing the core damage frequency. Unit 1 is the pilot for this programme consisting of 16 elements agreed by the State Nuclear Regulatory Committee of

Ukraine. The assessment of these design safety improvements was the scope of an other IAEA safety review mission.

Throughout the review, the exchange of information between the OSART experts and plant personnel was very open, professional and productive. Emphasis was placed on assessing the effectiveness of operational safety rather than simply the content of programmes. The conclusions of the OSART team were based on the plant's performance compared with requirements of the IAEA Safety Standards and good international practices.

MAIN CONCLUSIONS

The OSART team concluded that the managers of SU NPP are committed to improving the operational safety and reliability of their plant.

The team found good areas of performance, including the following:

- The web-based system the utility uses for its NPP fleet for Safety Performance Indicators provides information of safety performance of the whole fleet unit by unit with clear definitions of the indicators and good graphics to support trending.
- Handling of personal dosimeters and identifying the workers in the controlled area supports the implementation of several concepts, e.g. control of individual access to the cells of individual dosimeter storage facilities, detect cells defects, control dosimeter availability in the cell.

A number of areas for improvement in operational safety were identified by the team. The most significant areas for improvement include the following:

- The surface contamination monitors are not effective enough to ensure that workers are properly checked for contamination at controlled area exit points.
- Certain elements of the safety related policies are not fully embedded in the day-to-day management processes and practices of employees.
- The fixing system for many flanges at the plant cannot ensure the proper tightening of the equipment.

Plant management expressed a determination to address the areas identified for improvement an indicated a willingness to accept a follow up visit in about eighteen months.