

## INTRODUCTION AND MAIN CONCLUSIONS

### INTRODUCTION

At the request of the government of the Russian Federation, an IAEA Operational Safety Review Team (OSART) of international experts visited Novovoronezh Nuclear Power Plant Unit 5 from 9 to 26 November 2015. The purpose of the mission was to review operating practices in the areas of Leadership and Management for Safety; Training and Qualifications; Operations; Maintenance; Technical support; Operating Experience Feedback, Radiation protection; Chemistry and Severe Accident Management. In addition, an exchange of technical experience and knowledge took place between the experts and their plant counterparts on how the common goal of excellence in operational safety could be further pursued.

The Novovoronezh OSART mission was the 186th in the programme, which began in 1982. The team was composed of experts from Belgium, Bulgaria, Canada, Czech Republic, France, Japan, the Netherlands, Pakistan, Slovakia and United Kingdom, together with the IAEA staff members and observers from Brazil, the Islamic Republic of Iran and Russian Federation. The collective nuclear power experience of the team was approximately 350 years.

Before visiting the plant, the team studied information provided by the IAEA and the Novovoronezh plant to familiarize themselves with Unit 5'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.

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 the IAEA Safety Standards.

The following report is produced to summarize the findings in the review scope, according to the OSART Guidelines document. The text reflects only those areas where the team considers that a Recommendation, a Suggestion, an Encouragement, a Good Practice or a Good Performance is appropriate. In all other areas of the review scope, where the review did not reveal further safety conclusions at the time of the review, no text is included. This is reflected in the report by the omission of some paragraph numbers where no text is required.

## MAIN CONCLUSIONS

The OSART team concluded that the managers of Novovoronezh are committed to improving the operational safety and reliability of their plant. The team found good areas of performance, including the following:

- The plant uses advanced analysis of the primary coolant to estimate the likely age of any of the reactor fuel that develops a minor defect during power operation.
- The plant's full scope simulator is able to model all normal, abnormal and severe accident conditions, and has been developed in a way that improves training and communications for staff operating equipment 'in the field' as well as from the Main Control Room.
- The plant uses advanced techniques to significantly enhance removal of radioactive elements from water discharged from the site.

A number of proposals for improvements in operational safety were offered by the team. The most significant proposals include the following:

- The plant's quality, environment and health and safety requirements should be integrated into a single coherent management system.
- The plant should consider improving its ability to respond rapidly to changes in chemistry conditions by system of on-line chemistry measurement and their operation in chemistry control process.
- The overall radiation dose received by staff could be reduced by adopting a more rigorous and questioning approach to dose control practices.

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