EXECUTIVE SUMMARY

This report describes the results of the Pre-Operational OSART mission conducted at the Belarusian Nuclear Power Plant in Belarus from 5 to 22 August 2019.

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 Pre-Operational OSART mission reviewed eleven 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 and Commissioning.

The mission was coordinated by an IAEA Team Leader and Deputy Team Leader and the team was composed of experts from Armenia, Belgium, Brazil, France, Netherlands, Russian Federation, Slovak Republic and the United States of America, together with the IAEA staff members and observers from Republic of Korea and United Arab Emirates. The collective nuclear power experience of the team was approximately 350 years.

The team identified 19 issues resulting in 11 recommendations, and 8 suggestions. 4 good practices were also identified.

Several areas of good practices were noted:

- A reliable alarm system that not only sounds the alarm but can also be used by the plant to give verbal information and instructions to the population in case of radiological and other emergencies.
- The creation of an emergency shelter for 60 people in the plant Fire Department which has the same level of radiological protection as the shelter for plant personnel.
- The use of an integrated panel in the main control room, specially designed for the management and control of equipment, located at the plant site, necessary during emergencies.

The most significant issues identified were:

- The plant managers should enhance monitoring and supervision of the commissioning programme to ensure adequate plant readiness for safe operation.
- The operator should enhance its Foreign Material Exclusion programme to prevent foreign objects from being introduced into plant systems and components important to safety.
- The operator should implement an operating experience feedback programme to ensure lessons from in-house and external operating experience are learned and acted upon in a timely manner.

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

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of Belarus, an IAEA Pre-Operational Safety Review Team (Pre-OSART) of international experts visited the Belarusian Nuclear Power Plant from 5 to 22 August 2019. The purpose of the mission was to review operating practices in the areas of Leadership and Management for Safety, Training and Qualification, Operations, Maintenance, Technical Support, Operating Experience Feedback, Radiation Protection, Chemistry, Emergency Preparedness and Response, Accident Management and Commissioning. 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 Belarusian Nuclear Power Plant is located near Ostrovets town in the Grodno Region, about 170km North West of Minsk. The plant is state-owned and operated by the enterprise Belarusian Nuclear Power Plant. It consists of 2 units using Pressurized Water Reactors (PWR) each with a reference electrical output of 1194 MW.

The Belarusian Pre-Operational Safety Review Team mission was the 207th in the programme, which began in 1982. The team was composed of experts from Armenia, Belgium, Brazil, France, the Netherlands, the Russian Federation, Slovak Republic and the United States of America, together with the IAEA staff members and observers from Republic of Korea and United Arab Emirates. The collective nuclear power experience of the team was approximately 350 years.

Before the mission, the team studied information provided by the IAEA and the plant to familiarize themselves with the main features and pre-operational 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 team and plant personnel was open, professional and productive. Emphasis was placed on assessing the effectiveness of operational safety rather than simply the content of programmes. The team’s conclusions were based on the plant's performance compared with the IAEA Safety Standards.

The following report summarizes the findings of the review, 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 Pre-Operational Safety Review Team concluded that the managers of the Belarusian NPP are committed to improving the operational safety and reliability of their plant. The team found good areas of performance, including the following:

- A reliable alarm system that not only sounds the alarm but can also be used by the plant to give verbal information and instructions to the population in case of radiological and other emergencies.
- The creation of an emergency shelter for 60 people in the plant Fire Department which has the same level of radiological protection as the shelter for plant personnel.
- The use of an integrated panel in the main control room, specially designed for the management and control of equipment, located at the plant site, necessary during emergencies.

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

- The plant managers should enhance monitoring and supervision of the commissioning programme to ensure adequate plant readiness for safe operation.
- The operator should enhance its Foreign Material Exclusion programme to prevent foreign objects from being introduced into plant systems and components important to safety.
- The operator should implement an operating experience feedback programme to ensure lessons from in-house and external operating experience are learned and acted upon in a timely manner.

Belarusian NPP 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.