EXECUTIVE SUMMARY

This report describes the results of the Corporate OSART mission conducted at Joint Stock Company Rosenergoatom, Russian Federation from 11 to 27 November 2018.

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

This OSART mission reviewed nine areas: Corporate Management; Independent Nuclear Safety Oversight, Human Resources, Organizational Interactions and Communications; Maintenance; Technical Support; Operating Experience Feedback; Procurement; and Accident Management & Emergency Preparedness & Response.

The mission was coordinated by an IAEA Team Leader and Deputy Team Leader and the team was composed of experts from Canada, China, Croatia, France, Germany, Japan, Slovakia, South Africa, an Observer from Iran and one from WANO Moscow Centre and IAEA staff members. The collective nuclear power experience of the team was approximately 400 years.

The team identified 6 issues, resulting in 1 recommendation and 5 suggestions. 3 good practices were also identified.

Several areas of good performance were noted, including the following:

- Rosenergoatom has developed a computer-based information simulator to develop and train the skills of communications personnel and journalists to inform the public in the event of a severe accident at a nuclear power plant as well as other potential crisis situations.
- The organization publishes a comprehensive procurement plan in September each year for the following calendar year, facilitating optimisation of resources with clear focus on nuclear safety related activities
- The organization makes comprehensive use of social networks for crisis communications.

The most significant issues identified were:

- Some aspects of the severe accident management programme have not yet been fully implemented.
- Leadership approaches to challenging current performance and reinforcing management expectations are not always fully effective.
- Some of the arrangements related to the operating experience process are not always implemented sufficiently to prevent recurrence of events and address adverse trends

Rosenergoatom management expressed their commitment to address the issues identified and invited a follow up visit in about 12 – 24 months to review the progress.

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of the Russian Federation, an IAEA Corporate Operational Safety Review Team (OSART) of international experts visited JSC Rosenergoatom from 11 to 27 November 2018. The purpose of the mission was to review operating practices in the areas Corporate Management; Independent Nuclear Safety Oversight, Human Resources, Communications; Maintenance; Technical Support; Operating Experience Feedback; Procurement; Accident Management & Emergency Preparedness and Response. In addition, an exchange of technical experience and knowledge took place between the experts and their counterparts on how the common goal of excellence in operational safety could be further pursued.

The Rosenergoatom mission was the 3rd Corporate OSART and the 205th in the overall OSART programme, which began in 1982. The team was composed of experts from Canada, China, Croatia, France, Germany, Japan, Slovakia, South Africa, an observer from Iran and an observer from WANO Moscow Centre and the IAEA staff members. The collective nuclear power experience of the team was approximately 400 years.

Rosenergoatom is a Russian Joint Stock Company, wholly owned by Atomenergoprom and Rosatom, based in Moscow. It is responsible for the production of electrical and thermal energy from its nuclear power plants as well as the activities of the corporate operating organization in accordance with legislation of the Russian Federation. As well as the production of electrical and thermal energy within Russia the organisation also has a strategic aim to develop new products for the Russian and international market.

Rosenergoatom's fleet of nuclear plants comprises 37 units in operation, 6 under construction (plus a floating NPP close to commissioning at the time of the mission), 2 units being decommissioned and 3 units in permanent shutdown. 15 units are of the graphite moderated, water cooled (RBMK and EGP) type, 2 are liquid metal cooled, fast neutron reactors and the rest are pressurised water reactors of varying sizes and detailed designs. Current operational installed capacity is 30.04 GW, the world's second largest nuclear fleet. Total electrical generation in 2017 was almost 203 TWh.

Before arriving in Moscow, the team studied information provided by the IAEA and Rosenergoatom to familiarize themselves with the organization, its structure and its important programmes and procedures. During the mission, the team reviewed many of these programmes and procedures in depth, examined indicators of the organization's performance, visited three of its nuclear power plants to observe how corporate policies, programmes and processes influence plant activities, and held in-depth discussions with corporate and nuclear power plant personnel.

Throughout the review, the exchange of information between the OSART experts and Rosenergoatom personnel was 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 their observations and assessment of the organization'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, 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 Corporate OSART team concluded that the managers of Rosenergoatom are committed to improving the operational safety and reliability of their organization.

Several areas of good performance were noted, including the following:

- Rosenergoatom has developed a computer-based information simulator to develop and train the skills of communications personnel and journalists to inform the public in the event of a severe accident at a nuclear power plant as well as other potential crisis situations.
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Rosenergoatom management expressed their commitment to address the issues identified and invited a follow up visit in about 12 – 24 months to review the progress.