

## EXECUTIVE SUMMARY

This report describes the results of the OSART mission conducted for Heysham 2 Nuclear Power Plant (NPP), United Kingdom from 2 to 19 October 2023.

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 ten areas: Leadership and Management for Safety; Training and Qualification; Operations; Maintenance; Technical Support; Operating Experience Feedback; Radiation Protection; Chemistry; Emergency Preparedness & Response; Accident Management.

The mission was coordinated by an IAEA Team Leader and Deputy Team Leader and the team was composed of experts from Brazil, Canada, Finland, France, Germany, Slovakia, Sweden, USA, and IAEA staff members. The collective nuclear power experience of the team was approximately 354 years.

The team identified 19 issues, eight of these are recommendations, and 11 of these are suggestions. Nine good practices were also identified.

Several areas of good practice were noted:

- The plant has implemented a system called “wall hound” to detect electromagnetic interference and radio frequency interference (EMI/RFI) emitted by mobile phones, laptops and smart watches raising an audible and visual cue/prompt.
- The use of hot connection indicators by the plant to monitor cable connections temperature.
- The use of chemistry preservation metric by the plant to monitor system status.

The most significant proposals for improvements identified were:

- The plant should improve its approach in setting and reinforcing expectations and challenge the site personnel to identify and correct substandard conditions and equipment deficiencies in a timely manner.
- The plant should improve the material condition of some plant systems, structures, and components to further reduce the risk to plant safety and reliability.
- The plant should improve the control of fire doors and storage in the plant to further reduce fire risk to equipment and personnel safety.

Heysham 2 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 the United Kingdom, an IAEA Operational Safety Review Team (OSART) of international experts visited Heysham 2 Nuclear Power Plant from 2 to 19 October 2023. 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 & Response, and 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 Heysham 2 Nuclear Power Plant (NPP) OSART mission was the 220<sup>th</sup> in the OSART programme, which began in 1982. The team was composed of experts from Brazil, Canada, Finland, France, Germany, Slovakia, Sweden, USA, and three IAEA staff members. The collective nuclear power experience of the team was 354 years.

Before visiting the plant, the team studied information provided by the IAEA and the Heysham 2 NPP 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.

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 good international practices.

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 the Heysham 2 NPP are committed to improving the operational safety and reliability of their plant.

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

- The plant has implemented a system called “wall hound” to detect electromagnetic interference and radio frequency interference (EMI/RFI) emitted by mobile phones, laptops and smart watches raising an audible and visual cue/prompt.
- The use of hot connection indicators by the plant to monitor cable connections temperature.
- The use of chemistry preservation metric by the plant to monitor system status.

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

- The plant should improve its approach in setting and reinforcing expectations and challenge the site personnel to identify and correct substandard conditions and equipment deficiencies in a timely manner.
- The plant should improve the material conditions of some plant systems, structures, and components to further reduce the risk to plant safety and reliability.
- The plant should improve the control of fire doors and storage in the plant to further reduce fire risk to equipment and personnel safety.

Heysham 2 NPP management expressed their commitment to address the issues identified and invited a follow up visit in about eighteen months to review the progress.