

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 Sizewell B Nuclear Power Station from 5 to 22 October 2015. The purpose of the mission was to review operating practices in the areas of Leadership and management for safety; Training & qualification; Operations; Maintenance; Technical support; Operating experience feedback; Radiation protection; Chemistry; Emergency preparedness and response; and Accident management. In addition, an exchange of technical experience and knowledge took place between the experts and their station counterparts on how the common goal of excellence in operational safety could be further pursued.

Sizewell B Nuclear Power Station is located on the North Sea coast approximately 100 miles (160 km) North-East of London. Sizewell B is the UK's only commercial pressurized water reactor (PWR) power station, with a single reactor and rated capacity 1198 MWe (net). The “nuclear island” at Sizewell B is based on a Westinghouse “4-loop” plant known as SNUPPS (Standard Nuclear Unit Power Plant System). Sizewell B uses two full-speed, 3,000 RPM (50 Hz), nominal 660 MW turbo-alternator sets. It was built and commissioned between 1988 and 1995, first synchronized with the national grid on 14th February 1995. The power station is operated by EDF-Energy.

The Sizewell B OSART mission was the 185th in the OSART programme, which began in 1982. The team was composed of experts from Brazil, Canada, France, Germany, the Russian Federation, South Africa, the United States of America and the IAEA staff members. The collective nuclear power experience of the team was approximately 390 years.

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

Throughout the review, the exchange of information between the OSART experts and station 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 station'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 Sizewell B NPS are committed to improving the operational safety and reliability of their station. The team found good areas of performance, including the following:

- Accelerated pace Nuclear Leadership Programme (NLP) with Inclusion Workshops to train current and emerging leaders on important nuclear leadership principles and behaviour.
- The station's Periodic Safety Review (PSR2) process which is comprehensive and rigorous and based on benchmarking with wide range of modern safety standards.
- A single organizational Learning Portal enabling an easy collection and access to internal and external operational experience throughout all station departments.
- A well developed and documented process to ensure that the emergency exercises comprehensively cover the situations that could arise during emergencies.

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

- The station should enhance its policy and practices for handling and use of operating procedures and operator aids to ensure that current and correct documents are always available for use by operators.
- The station should improve the implementation of its foreign material exclusion (FME) programme.
- The station should enhance its corrective action programme trending so that adverse trends are identified and corrected in a consistent and timely manner.
- The station should continue its programme of reviewing and updating severe accident management procedures across all plant areas and conditions, incorporating experience from the 2011 Fukushima accident.

Sizewell B 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.