

## INTRODUCTION AND MAIN CONCLUSIONS

### INTRODUCTION

At the request of the government of the Czech Republic, an IAEA Operational Safety Review Team (OSART) of international experts visited Temelin Nuclear Power Plant from 5-22 November 2012. The purpose of the mission was to review operating practices in the areas of Management organization and administration; Operations; Maintenance; Technical support; Operating Experience, 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 plant is composed of two Units. There are installed two pressurized water reactors (PWR) of the VVER 1000-V320 type. Each Unit has one turbine generator with an electrical capacity of 1000 MW. Unit 1 was put into commercial operation in 2002 and Unit 2 in 2003.

The plant is an integral part of the Production Division of CEZ, a. s.

The plant is located approximately 25 km northwest from Ceske Budejovice, the regional centre of South Bohemia, Czech Republic. It is situated on the left bank of the Vltava River, 3 km from the village of Temelin. The Hnevkovice pumping hydro power plant stands on the Vltava River, and its reservoirs serve as a source of service water for the Temelin NPP.

The majority of employees live in nearby Tyn nad Vltavou and Ceske Budejovice.

The Temelin OSART mission was the 172 in the programme, which began in 1982. The team was composed of experts from Brazil, Hungary, Slovak Republic, Sweden, South Africa, Ukraine, United Kingdom, and the IAEA staff members and observers from Slovak Republic. The collective nuclear power experience of the team was approximately 304 years.

Before visiting the plant, the team studied information provided by the IAEA and the Temelin plant 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 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 Temelin NPP are committed to improving the operational safety and reliability of their plant. The team found good areas of performance, including the following:

- The Tag-out Preparation Software (GPZ), is an electronic aid to improve the efficiency preparation for applying isolation of plant equipment to safely perform maintenance activities.
- The control in real time of reactor coolant high temperature pH in order to prevent the generation of corrosion products in the primary system and reduce the doses.
- The Technical Support Centre (TSC) Manual was developed to form technical bases for decision making process performed by TSC staff during the implementation of the Emergency Operating Procedures by Control Room Crew.

All these good practices are relevant of a strong innovation and improvement spirit encouraged by the company cultural principles.

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

- The management and plant staff are not paying appropriate attention to details and working practices in the field as well as not reporting systematically minor deficiencies.
- In performing daily activities, the operation personnel do not always use Human Error Prevention Tools which are required by the plant management.
- The plant does not sufficiently control the total number of temporary modifications and their duration of implementation in order to minimize the cumulative safety significance.

The team highlighted that these improvements can be achieved by changing the behaviours and attitudes as regard to the plant management expectations and requirements.

The plant 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.