

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of France, an IAEA Operational Safety Review Team (OSART) of international experts visited Chinon Nuclear Power Plant from 27 November to 14 December 2007. The purpose of the mission was to review operating practices in the areas of Management organization and administration; Training and qualification; Operations; Maintenance; Technical support; Operating Experience, Radiation protection; Chemistry; and Emergency planning and preparedness. 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 Chinon OSART mission was the 144th in the programme, which began in 1982. The team was composed of experts from Bulgaria, Czech Republic, Hungary, Japan, Republic of Korea, Russia, Slovakia, South Africa and the United States together with the IAEA staff members. The collective nuclear power experience of the team was approximately 280 years.

Chinon NPP is part of the EDF Group and Nuclear Power Operations Division. The site has four 900 MWe PWR units (B plant) in operation, and three gas cooled units (A plant) under decommissioning. A corporate chemical and metallurgical laboratory of CEIDRE, the group INTRA which deals with robots to be used in the event of nuclear accident and the corporate training engineering unit UFPI are located at the same site. The plant operating the four 900 MW units was the scope of the review. It employs 1270 EDF staff and about 300 contractors work permanently at the plant.

Before visiting the plant, the team studied information provided by the IAEA and the Chinon 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 good international practices.

The following report is produced to summarise the findings in the review scope, according to the OSART Guidelines document. The text reflects only those areas where the team considers that either 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 management of Chinon NPP are committed to improving the operational safety and reliability of their plant. The team found good areas of performance, including the following:

- The plant is controlling, reducing, and maintaining as low as possible the source term and consequently radiation doses, liquid and gaseous effluent releases and process-generated waste. There is a strong management commitment in this regard, through cross-functional committees and through adherence to the radiochemical and chemical specifications;
- Use of the boric acid valve lineup display has reduced operator occupational exposure due to decreasing the necessity for manual valve lineups on the boron and water make up system;
- Craft Safety Groups contribute to addressing safety issues within a particular profession (craft), based on teamwork;
- The plant has created a programme to reduce scrams from human interface. It includes labeling equipment in the field and the control room as well as electronically identifying equipment and activities that could introduce a risk of plant scrams;
- The practical training presented to employees in the area of radiation protection and the different tools and simulation practices used are deemed very effective in simulating work practices and human actions inside a controlled zone.

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

- The plant should revise the established rules to ensure that at least one authorized reactor operator is present 'at the controls' (near the control boards and panels) in main control room at all times during operation of the reactor;
- The plant should reinforce current standards for alarm response and introduce a requirement for logging of unexpected alarms;
- The plant should consider using error prevention techniques more extensively during manipulations affecting reactivity;
- The plant should consider further efforts to minimize the number of temporary modifications and ensure their proper control including their timely resolution;
- The plant should consider enhancing its implementation and control of modifications and configuration to ensure that the original functions, as designed, are not compromised.

Chinon 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.