

## INTRODUCTION AND MAIN CONCLUSIONS

### INTRODUCTION

At the request of the government of France, an IAEA Operational Safety Review Team (OSART) of international experts visited Gravelines Nuclear Power Plant from 12-29 November 2012. 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; Emergency Planning and Preparedness; 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.

Gravelines nuclear power plant is located in the commune of Gravelines (Nord department), approximately 20 km west of Dunkerque, 25 km east of Calais and 85 km north-west from Lille. The Lille metropolitan area, which includes Lille-Roubaix-Tourcoing-Mouscron, is one of the most densely populated urban areas of France and Belgium (home to 2 million people).

The six units on the site are operated by EDF and are 910MWe. The units were put into commercial operation between 1980 and 1985 and represent 9% of the total production of EDF. There are approximately 1790 permanent workers on the site and 320 permanent contractors.

The Gravelines OSART mission was the 173<sup>rd</sup> in the programme, which began in 1982. The team was composed of experts from Bulgaria, China, Germany, Hungary, Japan, Romania, Slovakia, South Africa, Spain, Ukraine and the IAEA. The collective nuclear power experience of the team was approximately 330 years.

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

- A dynamic skills mapping process for all staff members contributes to the significant enhancement of the overview of collective and individual skills and provides proactive management in the loss of skills.
- The plant uses a system which ensures that dose rate measurements are carried out at a precise distance from the source of radiation.
- Flood protection of the plant is supported by special technical guidance documents and associated arrangements.

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

- The plant should reinforce the rigor with which the FME program is implemented and closely monitor the effectiveness of the FME program.
- The plant should ensure the permanent presence at the plant of a person with the authority to initiate, in all cases, promptly and without consultation, the on-site emergency plan and the off-site notification process.
- The plant should improve the root cause methodology used to ensure effective identification of fundamental problems in order to reduce or eliminate the re-occurrence thereof.

Gravelines 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.