

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of the Republic of Brazil, an IAEA Operational Safety Review Team (OSART) of international experts visited Angra 2 Nuclear Power Plant from 28 March – 14 April 2011. 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 safety culture. 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 two units on the site are operated by Eletronuclear. The first unit is a 640 MWe, PWR supplied by Westinghouse. Unit 1 was put into commercial operation in January 1985. The second Unit is a 1350 MWe supplied by Siemens/KWU. Unit 2 was put into commercial operation in February 2001. There are approximately 650 permanent workers on the site.

The Angra 2 OSART mission was the 160th in the programme, which began in 1982. The team was composed of experts from Armenia, Belgium, Canada, France, Hungary, Russia, Sweden, the United Kingdom, and together with the IAEA staff members and observers from China and South Africa. The collective nuclear power experience of the team was approximately 317 years.

Before visiting the plant, the team studied information provided by the IAEA and the Angra 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 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 Angra 2 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 established a programme to have Senior Reactor Licensed Engineers in departments other than the operations department

- The plant has set-up an efficient evacuation process in case of emergency

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

- The plant should fully implement an integrated management system
- The organisation should implement a timely procurement process which will support the safe operation.
- The plant should improve its oversight and implementation of operating activities to support high performance in the conduct of operations
- The plant should develop a comprehensive ageing management programme in order to ensure the continued reliability of important systems, structures and components.

Angra 2 NPP 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.