

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of the United States of America, an IAEA Operational Safety Review Team (OSART) of international experts visited Arkansas Nuclear One Power Plant from 15 June to 2 July 2008. 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; Radiation protection; Operating Experience, 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 Arkansas OSART mission was the 147th in the programme, which began in 1982. The team was composed of experts from Belgium, Canada, Czech Republic, Finland, France, Germany, Hungary, Japan and UK together with the IAEA staff members and observers from Japan and Sweden. The collective nuclear power experience of the team was approximately 350 years.

The Arkansas Nuclear One (ANO) site is a member of a family of nuclear generating stations owned/operated by the company 'ENTERGY'. The site is located about 10 km West-Northwest of Russellville, Arkansas on the Dardanelle reservoir. The plant is comprised of two units. Unit 1 is a PWR manufactured by 'Babcock and Wilcox' with 886 MWe gross rated power operating since 1974. Unit 2 is a PWR manufactured by 'Combustion Engineering' with 1042 MWe gross rated power operating since 1980. Unit 1 has an associated turbine manufactured by 'Westinghouse' and is cooled by water drawn from Dardanelle reservoir. Unit 2 has an associated turbine manufactured by 'General Electric' and is cooled by means of a cooling tower. Both units have their operating license renewed for a total of 60 years. The plant work force is comprised of 761 employees and 175 permanent contractor staff.

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

MAIN CONCLUSIONS

The OSART team recognizes that the managers and staff of Arkansas Nuclear One NPP following the vision of the Entergy nuclear fleet are committed to demonstrate world-class excellence in generating electricity safely, reliably and affordably. The team found good areas of performance, including the following:

- The plant staff utilizes performance indicators to effectively influence plant performance.
- The plant has a focus on behavioral improvements resulting in prompt feedback that drives continuous improvements.
- A site-wide wireless network has been installed and leveraged to enhance worker effectiveness and productivity at the plant.
- The “Plant Data Server” software developed by the plant has enabled all plant personnel to have real-time access to plant data.
- Information technology to support radiation data acquisition and field display results in improved radiological performance.

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

- The plant should review its procedure of sub-criticality monitoring to include enough detail to monitor sub-criticality properly and to take timely action.
- The plant should ensure that control of safety related keys in the Shift Manager key cabinet provides a robust barrier to maintain plant configuration.
- The plant should improve and reinforce the management of non-nuclear materials in the spent fuel storage area.
- The plant should enhance the arrangements currently in place to support timely emergency classification when radioactive releases cannot be measured by installed plant instruments.
- The plant should consider upgrading the contamination monitoring instrumentation and review its location of plant monitoring instruments in order to provide sufficient personnel contamination monitoring.

Arkansas Nuclear One NPP management expressed a determination to address the areas identified for improvement and indicated a willingness to host a follow up visit in about eighteen months.