

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of Pakistan, an IAEA Operational Safety Review Team (OSART) of international experts visited Chashma 1 Nuclear Power Plant from 23 November to 10 December 2015. The purpose of the mission was to review operating practices in the areas of Leadership and management for safety; Training and qualification; Operations; Maintenance; Technical support; Operating experience feedback; Radiation protection; Chemistry; Emergency preparedness and response; and 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.

Chashma 1 Nuclear Power Plant is located on the left bank of river Indus, 280 km south-west of the capital Islamabad, Pakistan. The plant has a gross capacity of 325 MWe, and is a Pressurized Water Reactor. First criticality was achieved on 3 May 2000, and it started commercial operation on 25 September 2000. The plant is operated by Pakistan Atomic Energy Commission (PAEC).

The Chashma 1 OSART mission was the 187th in the programme, which began in 1982. The team was composed of experts from Brazil, Bulgaria, China, Hungary, Romania, the Russian Federation, Ukraine, and the IAEA staff members. The collective nuclear power experience of the team was approximately 270 person years.

Before visiting the plant, the team studied information provided by the IAEA and the 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 Chashma 1 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 owns a fully equipped Personnel Decontamination Facility, staffed 24 hours a day and 7 days a week all through the year, which is prepared to be used in cases of injury and radioactive contamination.
- The plant adopted an approach to include daily operation logbooks screening in the refresh training program of operators and to replicate operation events on simulator to improve training effectiveness.
- The plant developed an optimized shift working schedule to achieve a better distribution of workloads, ensure adequate time for training, and provide benefits to the operating personnel.

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

- The plant management should improve communication and reinforcement of clear expectations to the plant staff and should challenge and correct unsafe and inappropriate behaviours, practices and conditions to ensure safety.
- The plant should enhance its programme for systematic monitoring, review and analysis of reliability and availability of the emergency diesel generators to ensure they perform their safety function reliably.
- The plant should improve the current process of review and validation of procedures to ensure availability of valid documentation for operation.

Chashma 1 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.