INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

At the request of the government of Canada, an IAEA Operational Safety Review Team (OSART) of international experts visited Pickering A, Unit 4 Nuclear Power Plant, from 9 to 26 February 2004. 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 Pickering A, Unit 4 OSART mission was the 124th in the programme, which began in 1982. The team was composed of experts from Brazil, China, Germany, Romania, France, Czech Republic, and the United States of America, together with IAEA staff members and an observer from Japan. The collective nuclear power experience of the team was more than 300 person-years.

Before visiting the plant, the team studied information provided by the IAEA and the Pickering A, Unit 4 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 and off-site authorities.

While the mission was in progress the unit achieved full power operation for the first time since it was laid up in 1997. The team was able to observe many activities associated with a plant in normal operation.

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 activities related to operational safety rather than simply the content of programmes.

The conclusions of the OSART team are identified as recommendations, suggestions, or good practices. They are based on the plant's performance compared with IAEA safety standards and international practice. The team identified seven good practices, which are activities, performance, or usage of equipment that the team considers to be markedly superior to that observed elsewhere. Recommendations contain advice on improvements that should be made in operational safety. The team provided twelve recommendations. Suggestions are intended for areas presently exhibiting good performance which could become even more effective; the team identified eleven suggestions.

MAIN CONCLUSIONS

The OSART team concluded that the managers and workers of Pickering A, Unit 4 NPP have initiated many new programs to enhance operational safety and reliability at their plant. In concept, these programs are beneficial but they will require continued effort before they are fully effective.

The team found several areas of strength at the plant. These include:

- The management shows good alignment with the goals of the plant.

- The plant organization had an open and positive attitude toward this and other assessments of performance. In fact, the plant benefits well from its own self-assessment and trending programs.
- The training programmes and E-learning techniques are robust and contribute to worker knowledge and performance.
- Emergency planning and training is a strength

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

- During the initial period of operation following a long lay-up period, it is expected that weaknesses in material condition which couldn't be observed during the lay-up will become manifest. While this is expected, the management need to more aggressively pursue correcting such deficiencies to ensure higher standards are engrained in the culture of the station.
- Further improvements should be made in the area of cleanliness and housekeeping.
- The plant should enhance and continue its program to reduce the amount of low level active waste.
- The procurement of spare parts should become more efficient.

SAFETY CULTURE REVIEW CONCLUSION

An important element of the OSART review is the identification of those findings that exhibit positive and negative aspect of safety culture. The OSART team used the guidance provided in INSAG-4, INSAG-13, INSAG-15, IAEA Safety Reports Series No.11, IAEA-TECDOC-1321 and 1329 and draft SCART Guideline to assess various aspects of safety culture at the Pickering A4 nuclear power plant.

The team members were very impressed with a number of positive safety culture aspects observed in Pickering A4 plant. In particular the team observed:

- The plant has developed an "Event free challenge process" and "Event free tools" to assist workers in avoiding errors. These tools are beginning to provide positive results. One of these tools is and "Human performance training simulator", which the team found impressive.
- There have been strong efforts to enhance communication.
- Managers are open to self-assessment and eager to find ways to improve.

The team also identified several areas where management and staff of the plant are encouraged to enhance safety culture:

- There is still a gap between the plant's good intentions and actual performance in several areas.
- In several areas the team observed that the organization overlooked details that should have been fixed. Often these missing or incorrect details confuse other workers or slow the process. The attention to detail should be improved.

In conclusion, there is a commitment to nuclear safety at Pickering A4 and a willingness to make improvement. The implementation of the OSART recommendations and suggestions will aid management and workers as they pursue their desire to improve operational safety of the plant. The good practices identified at the plant will be made available to other plants to enhance knowledge in how to do things well.