1.

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

An IAEA team of international experts for operational safety evaluation has visited the Temelín NPP in the time between 21th and 25th February 2000. The reason for the mission was an evaluation of operational practice in the field of management, organization, and administration. Besides that the team has checked the status of the recommendations, included in the document IAEA-EBP-WWER-05 Safety problems and their classification for the nuclear power plants with VVER-1000 model 320. Additionally, experts and their partners exchanged technical experience and knowledge concerning the further procedure to reach perfection in operational, safety.

The team was composed of experts from Finland, Great Britain, members of IAEA and observers from Russia.

Prior the visit, the team of experts had the opportunity to study information provided to IAEA by Temelín NPP, to become familiar to with the main elements and operational procedures of the plant, organizational structure and with the responsibilities of the staff, and important programs and regulations. During the mission, the team has assessed in detail many plant programs and regulations, has verified plant activity indicators, has concentrated on the works in progress and has discussed with the staff.

The whole time the exchange of information between the IAEA team experts and the plant staff was extremely open, professional and productive. The operational safety effectiveness was emphasized rather than the proper contents of the programs. Conclusions of the team were based on the comparison of the plant work with the good international practice.

MAIN CONCLUSIONS

In general the systems, being took over by, and under the control of the plant operator, are in the condition suitable for the plant commissioning. These systems include several laboratories and maintenance workshops, diesel generators and river pumping station. It was found that in Temelín most good international processes for operation support were implemented or are in the process of implementation. Inspection of the plant departments has shown that they are composed of qualified personnel. Many of the people, the team met with, worked formerly for the second Czech nuclear power plant, the Dukovany NPP.

The team has identified several areas requiring some improvement: gradual delegation of the ČEZ personnel (problems of a ‘turn key contract’) for enforcing higher standards in the order on the workplace, material, work safety, and fire protection condition; safety culture (e.g. more effective sharing of the safety downwards in the organization, safety consciousness of the personnel and performance indexes of the safety) and some aspects of the maintenance programs.

2.

INTRODUCTION AND MAIN CONCLUSIONS

INTRODUCTION

On request of the Czech Republic government, control team of international experts for operational safety from IAEA (OSART) has visited the Temelín NPP from the 12th of February to the 1st of March 2001. The aim of the mission was to assess the operational procedures in the areas of Management, Organization, and Administration; Training and education; Operation; Maintenance; Technical support; Radiation protection; Chemistry; and Emergency planning and preparedness. The OSART team also inspected activities, carried out on recommendation for improvement, resulting from the IAEA control mission for the plant preparedness and commissioning control, from February 2000. Besides that the team assessed the status of the recommendations included in the document IAEA-EBP-VVER-05, safety problems and their assessment for the nuclear power plants with VVER-1000, model 320 (NPP). Technical experience and knowledge was exchanged between the experts and their counterparts from the plant concerning the pursuance of the common aim – perfection in the operational safety.

The OSART team was composed of experts from France, Germany, Hungary, Romania, Russia, England, and the United States of America together with the staff members from the IAEA and observers from Austria and France.

Prior the visit of the plant the team studied information provided to IAEA by the Temelín power plant, to become familiar with the main characteristics of the plant, operational history, organization and personnel responsibilities, and important programs and procedures. During the mission, the team assessed in detail many of the plant programs and procedures, investigated plant activity indexes, examined the process of the work and has performed detailed discussions with the plant personnel.

During the first two weeks of the mission the Temelín reactor was shut down. The activities under examination included the completion of the repairs on the turbine and pipes, performed after the start-up tests at 30% reactor output. This offered less opportunity to watch the progress of the works.

The OSART mission was, nevertheless, carried out in the same way as for a running plant. Despite the fact the activities were performed by the contractors, the team has realized the interviews and watched the ČEZ managers, and the personnel in general as if the plant was fully under their responsibility. Additionally rather an operational safety effectiveness assessment was performed.

The whole time the exchange of information between the OSART team experts and the plant staff was extremely open, professional and productive. Conclusions of the OSART are based on the plant activities assessment in comparison with good international practice.

MAIN CONCLUSIONS

The OSART team has concluded that the Temelín NPP managers are decided to improve the operational safety and reliability of their plant. Additionally, during the discussions and interviews, the plant personnel identified consistently the safety as the highest priority.

The team has identified several areas of good activities, which include:

- In general it was found out that the plant personnel is highly professional and open for discussion, and to new ideas;
- Material conditions of the plant and plant maintenance are generally in accordance with good international practice. The team members, which had taken part on the IAEA Control mission for the inspection of the plant operational preparedness and commissioning in February 2000, were impressed by the improvements made since the that mission by the plant management in some operational aspects of the plant, in particular as to the maintenance and operational condition;
- In case of several technical processes it was found out that they had exemplary quality. This includes the secondary erosion corrosion monitoring system and on-line monitoring of the electrical components;
- The emergency response programs are evaluated as highly developed.

The safety culture in the plant develops. The team has found out that there are several initiatives stimulating this development and encourages the plant management to pursue the effort to find ways for further improvement of safety culture. The team has provided a series of recommendations for operational safety improvement, which will contribute to this development as soon as implemented.

The most important proposals include:

- The plant should further develop the overview of plant safety management through an advanced self-assessment on all plant levels, effective implementation of the Quality assurance program, and broader and more effective use of safety implementation indicators. Additionally an independent overview about the plant safety on the concern level.
- The team has found out that most of the programs and control processes exist, but has also shown possibilities of improving several of them, such as plant permanent supervision program and temporary changes program. Continuous evaluation and subsequent improvement of the programs and processes in the plant is essential for effective transition from the commissioning to the operational phase of the plant.
- Contents and format of the regulations within the plant is given, but needs to be improved; to be more user friendly and in a “step by step” form, and to consistently record important results. Additionally the document management requires more attention from the plant personnel.

The Temelín management has expressed the willing to solve the areas identified for improvement and promised to accept the next IAEA visit after the start-up of the unit two.

3.

Conclusions from IAEA IPPAS (International Atomic Energy Agency – International Physical Protection Advisory Service) mission,

performed between 9th and 18th September 1998 in the Czech republic on SÚJB request.

Visited organizations and nuclear facilities: SÚJB together with the Ministry of Interior of the Czech republic, Police of the Czech Republic, and ČEZ, a.s. – HS; Nuclear power plants Dukovany and Temelín, training reactor VR-1 in the Nuclear sciences and physical engineering faculty of the Czech Technical University in Prague and Nuclear Research Institute in Řež a.s. , which were invited to participate.

General overview

The aim of the IPPAS (International Physical Protection Advisory Service) mission in the Czech Republic was (1) to asses the national system of nuclear materials and nuclear facilities physical protection based on a request of the State Office for Nuclear Safety, and (2) to compare the existing practice in the physical protection area in the Czech Republic with international recommendations (INFCIRC/225/Rev. 3). To reach this aim, the team took profit from the exchange of experience and correct procedures directed to reinforce the existing procedures.

The following overview of correct procedures, proposals and recommendations, compiled by the IPPAS mission represents in its summary form the meaning of the individual team members and it is not possible to understand them isolated from the context of the whole report. The proper report includes specific details, based on which the correct procedures, proposals, and recommendations were formulated.

Correct procedures

Legislative frame of the national physical protection system is comparable with the internationally recognized approaches for securing physical protection. When proposing the national legislation requirements resulting from the regulation, approval, control and supervision activities in the nuclear facilities and during nuclear materials transport were taken into account.

National legislation has developed from the legislation, created by the former socialist government in the time when the Czech republic was part of the former Czechoslovakia. Whilst the national legislation continues to develop, effective state-of-the-art control procedures are continuously developed and refined. In case original laws and decrees are not available, their foreign equivalents are used until the national laws and decrees corresponding to the Czech Republic needs are available.

For instance high degree of cooperation between the authorization issuing body and its holder, and the Police of the Czech Republic is the main indicator of an effectively functioning national physical protection system.

SÚJB has available adequate resources and support from the Government of the Czech republic to execute its legislative mandate during the control of an effective state system of physical protection.

Proposal

As amendment to laws and decrees in particular instructions for the applicants for an authorization should be elaborated. The instruction should include practical procedures for the application of requirements for the physical protection and simultaneously also the explication and interpretation of the national legislation.

Recommendation

SÚJB should coordinate activities leading to the definition of the national basic jeopardy (safety risk), which could be used during the evaluation of physical protection systems, applied in nuclear facilities and during the design of new or physical protection systems or during the improved of the existing ones. Simultaneously SÚJB should observe and regularly update the determination of the national basic jeopardy. Defining and following of the national basic jeopardy should be performed in cooperation with the Administration bodies on national and local levels, which are acquainted with the prevailing conditions of jeopardy in the Czech Republic.