

## **ANNEX 3 IAEA Missions 2002 - 2004**

- 1. IPPAS Follow-up Mission (NPP Temelin 8-12 April 2002)**
  
- 2. IPSART Mission (NPP Temelin 29 September-10 October 2003)**
  
- 3. OSART Follow-up Mission (NPP Dukovany 6-10 October 2003)**
  
- 4. OSART Follow-up Mission (NPP Temelin 8-12 December 2003)**

## **1. IPPAS Follow-up Mission (NPP Temelin)**

On 3 July 2001, the Chairwoman of the State Office for Nuclear Safety asked in her letter the International Atomic Energy Agency to perform so called “follow-up” IPPAS mission in NPP Temelin. This mission continued with the work of IPPAS mission performed in the power plant between 14 and 15 September 1998, orientated towards the area of ensuring of physical protection during the construction period and examining also the processes of implementation of the technical system of physical protection, development of safety analyses, and overall concept of the way of physical protection assurance. The follow-up mission’s target was to evaluate the final state of physical protection assurance in NPP Temelin on the level of an already operated nuclear facility and to submit NPP Temelin possible recommendations or suggestions leading to physical protection system enhancement or to reaching of a level that is specified in IAEA document INFCIRC 225 Rev. 4 in the form of an IAEA recommendation for the area of physical protection of nuclear materials and nuclear facilities.

The mission itself was performed in NPP Temelin between 8 and 12 April 2002 by a team of experts consisting of representatives of USA, Canada, and France; there were also representatives of Ukraine and Lithuania in the role of observers.

### **Results from IAEA Assessment Report**

A concise statistical overview of the mission results (categorized according to IAEA standard) is as follows:

#### ***1) Recommendations:***

None given.

#### ***2) Suggestions (broken down into three areas):***

In all, the team submitted seven suggestions to consider (two suggestions for the technical system of physical protection, three suggestions in the area of administrative measures, and two suggestions for fast-deployment units).

#### ***3) Good Practice:***

Seventeen examples of good practice recorded and commented on in the final report represent a very favourable mission result.

The following statements of positive evaluation are contained in the summary part of the final report:

1. The technical ensuring of NPP Temelin perimeter has been implemented in an excellent manner.
2. The physical protection system has been integrated very well.
3. Consistent approaches have been used during its implementation and are used still.
4. The physical protection system of NPP Temelin is at the level of the best Western facilities.
5. The personnel ensuring the physical protection system is competent and professional.

## **2. IPSART Mission (NPP Temelin)**

IPSART mission performed by a team of seven foreign experts (from USA, Malaysia, England, Russia, Spain and France) between 29 September and 10 October 2003 was the 21<sup>st</sup> IAEA check inspection in NPP Temelin already. As a number of modifications orientated on power plant safety enhancement had been implemented since the original evaluation preparation and because current input data existed, this two weeks' inspection concentrated in detail on newly updated models of the probabilistic safety assessment of the present design and operation of the power plant. Thus it served as a follow-up of the two preceding inspections – IPERS missions in 1995 and 1996. Also visits to the nuclear unit spaces directly connected with the analyses made formed a part of the inspection.

The models of the probabilistic safety assessment developed by the workers of the Safety Assessment Department of NPP Temelin in cooperation with US Scientech Company were updated to current design state of the unit in the years 2001 to 2003. By means of the new models of the probabilistic assessment of internal initiating events, reaching of sixfold decrease in the frequency of occurrence of an event with reactor core disruption has been declared, which can be expressed in numbers by the value of  $1.49 \times 10^{-5}$ /year, comparable with a number of pressurized-water reactors across the world.

### **IAEA Mission Conclusions**

The scope of the check mission's activity comprised evaluation of PSA models for operation at power and internal initiating events, for fires and floods, PSA models for non-power operation and outages, and models of 2<sup>nd</sup> level PSA with the following summary opinion:

1. The inspection examined all the updated new models.
2. Nearly all the recommendations and suggestions of the preceding inspections (in 1995 and 1996) had been fulfilled.
3. All the questions raised were answered by the plant operator.
4. PSA analyses for NPP Temelin were developed according to approved methodologies, in appropriate quality, and by competent personnel.
5. Analyses documentation was in a very good condition (inclusion of the comments of the preceding check missions into the updated analyses was a positive feature).

The IAEA experts also gave over a number of useful ideas for further improvement of this tool of safety assessment, which were discussed in detail.

### **3. OSART Follow-up Mission (NPP Dukovany)**

Between 6 October and 10 October 2003, a planned mission of the International Atomic Energy Agency, OSART Follow-up, took place in NPP Dukovany, which followed after the initial OSART Mission in 2001. The team of two Agency's experts was completed by a specialist from Slovakia and Great Britain respectively, and another IAEA expert in the role of an observer.

The team members reviewed and checked the remedial measures that NPP Dukovany had taken and implemented for the findings of OSART Mission 2001 and evaluated them (or categorized according to IAEA standard) by three solution degrees – *“solved”*, *“solution continues satisfactorily”* or *“not solved satisfactorily”*.

#### **Conclusions of IAEA Assessment Report**

**The mission found out that out of 33 findings (22 recommendations and 11 suggestions) of OSART Mission 2001 23 had been fully solved and 10 were being solved satisfactorily. Not a single one finding was in the condition of “not solved satisfactorily”.**

The report of OSART Follow-up Mission contains the following main conclusions:

1. NPP Dukovany workers cooperated excellently with the IAEA team, which came for a follow-up, complementing visit; all questions were discussed frankly and openly. The team found out that NPP Dukovany workers had performed a thorough analysis and in many cases their solutions of operational safety improvement had exceeded the scope of the original team recommendations. In several cases they joined solution of two or more problems together creatively in a way that led to better results than those which could have been reached if they had solved the given problems piecemeal.
2. The team was especially captivated by the management's decision to replace suspensions in the primary circuit and replace a number of fire doors. These investment decisions mean a strong determination to ensure operational safety.
3. NPP Dukovany had put in considerable work regarding improvement of technical management of small modifications installed in the power plant.
4. Extension of practical fire-fighting training had improved competence of the fire brigade members to deal with a wider range of fire types. People working in this area suggested they regard highly the opportunity to take part in this training.
5. New procedures and preliminary measures introduced into the transport of hazardous materials improve their control and safety of handling.
6. The overall impression of the team members was that the power plant had made great progress in solution of the findings mentioned in the original report. The team found out that many of these findings had been completely fulfilled.
7. The final statistical analysis of the condition of recommendations and suggestions set by OSART Mission in November 2001 established that 70% had been fulfilled and 30% show sufficient progress.

#### **4. OSART Follow-up Mission (NPP Temelin)**

On the basis of a request of the Czech Republic, OSART Mission was performed in NPP Temelin in February 2001. Its follow-up mission, which was to evaluate the power plant's response to the recommendations given by the team of OSART Mission 2001, took place in NPP Temelin between 8 and 12 December 2003. The implementation of recommendations and suggestions for improvement was inspected by a team consisting of three Agency's experts, one specialist from Romania, and one observer from China.

During the mission, the initial commentary of NPP Temelin on the individual recommendations and suggestions, in which the power plant described how it had fulfilled the IAEA findings in the preceding period, was supplemented by the Agency team's commentary following from their examination and by an evaluation of fulfilment level reached at the end of each finding. The following categories were used to evaluate the condition of implementation of the individual recommendations and suggestions - *"solved"*, *"solution continues satisfactorily"* or *"not solved satisfactorily"*.

#### **Conclusions of IAEA Assessment Report**

**The evaluation resulted in inclusion of 29 recommendations and suggestions into the "solved" category (i.e. 63%). 16 recommendations and suggestions fell into the category of "solution continues satisfactorily" (i.e. 35%). Only one recommendation (i.e. 2% out of the total number of originally given recommendations and suggestions) was not solved satisfactorily at the time of mission taking place yet.**

The team generally thought highly of the progress made in the improvement of operational safety, implementation of recommendations, and power plant appearance.