

*Answers to Questions and Comments  
Raised by Russian Federation  
on the  
National Report of the Czech Republic*



prepared for the purposes of the  
**First Review Meeting of Contracting Parties**  
to the  
**Convention on Nuclear Safety**  
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**RUSSIAN FEDERATION 1.** *In the introduction it is stated that the Report deals with energy producing plants Dukovany and Temelín only. With this, the intermediate storage of spent fuel and the storage of radioactive waste are considered to be “other” nuclear facilities and not dealt with in the Report. However in paragraph (i) of Article 2 of the Convention it is stated that the facilities for storage and processing the radioactive materials are a part of nuclear power plant if they are located at the same site and directly related to its operation. It is not clearly indicated in the Report where the mentioned intermediate storage of spent fuel and the storage of radwaste are located. However from item 1.3. B).3 of Appendix 1 one may suppose that at least the intermediate storage of spent fuel is located at the site of NPP Dukovany and, consequently, to be considered in the Report.*

In its Article 2, the Nuclear Safety Convention defines the nuclear installations under its administration as follows:

- (i) *„nuclear installation“ means for each Contracting Party any land based civil nuclear power plant under its jurisdiction including such storage, handling and treatment facilities for radioactive materials as are on the same site and are directly related to the operation of the nuclear power plant. Such a plant ceases to be a nuclear installation, when all nuclear fuel elements have been removed permanently from the reactor core and have been stored safely in accordance with approved procedures, and a decommissioning program has been agreed to by the regulatory body.*

The radioactive material handling/storing systems closely related to the plant operation are understood by the Czech party as the spent fuel pool and all of the technologies of the unit designed to collect, sort, and store the radioactive waste. The spent fuel intermediate storage and the repository of low and medium radioactive waste do not relate directly to the NPP operation, even when deployed in the same locality. They are understood, according to the Law, as separate installations. In opinion of the Czech party, this equipment comes under direction of the Joint Convention on Safety in Radioactive Material Handling and Safety in the Exhausted Nuclear Fuel Handling.

***RUSSIAN FEDERATION 2, On page 11 it is indicated that the results of external audit on safety of NPP Dukovany within PHARE-93 programme were published in report of [1-9], however in Appendix 4 the report [1-9] is identified as the known document INSAG-3 of 1988. There is also a doubt in correctness of reference [1-10]: in the text, on page 11, it is referred to 1995, and in Appendix 4 - to 1996.***

An error in text is what matters here, the following document should have been referred to here:

[1-10]            VVER 440-213 Engineering Safety Evaluation - NPP, Dukovany Final Evaluation Report; ENAC, 1996.

***RUSSIAN FEDERATION 3: Reference [1-24] on page 15 is absent in Appendix 4, therefore it is impossible to understand to what it is related - to the preliminary safety documentation, or to the analyses performed anew?***

An error in text is what matters here; there is nothing like reference [1-24]. There is a general reference to a new safety documentation, which includes in the National Report the quoted addendum to the Preliminary Safety Report, as well as the reference to another supplementary documentation, such as Topical Reports.

***RUSSIAN FEDERATION 4: From section 3 of the Report on fulfillment of Article 8 a conclusion can be made that the current supervision on designing and fabrication of equipment for nuclear power plants is not a function of the Office for Nuclear Safety. If it is so, then what is the body to carry out such supervision? What are the functions of the Department of systems and components in the Office for Nuclear Safety?***

It is within competencies of the SÚJB to make supervision over the nuclear safety on the basis of § 39 of the Atomic Act directly at the bodies involved in the activities related to the nuclear energy utilization, which do not require any permission, i.e. just at the design engineering organizations and manufacturers of the nuclear power plant in whole assemblies and their parts. In these areas the SÚJB checking activity is aimed primarily at compliance with the relevant nuclear safety-related requirements and at quality, as they are stated in the approved QA programs, in the related documentation, quality procedures, and in working documentation (technical regulations), technical conditions, standards, etc.). The obligation to work out a QA program can be deduced from the requirements under § 4, para 7 of the Atomic Act, according to which anybody active in the field of the nuclear power utilization must implement a QA system in the way and to the extent as defined in the executive regulation - the SÚJB Regulation 214/1997 Coll.

Within the limits of Czech legislation the issues of supervision over the nuclear energetic installations are also under solution by the Czech Office for Safety of Work (SÚJB) from the technical safety and safety of work point of view, making use of its subordinate components - Inspectorial Offices of Safety of Work and organization of the State Specialized Supervision - Technical Inspection Institute. Within the competencies of these authorities, as under § 6a, para 174/1968 Coll. in its applicable wording it is to practice safety supervision over the reserved technical equipment in the areas of design engineering, structural designs, manufacturing, installation, operation, repairs and overhauls, and to execute and manage the tests of these facilities.

Within the structure of SÚJB, the department of components and systems is prevalingly engaged in checking functions aimed at nuclear safety and quality. Within the responsibilities of this department, however, there are also some analytical activities (assessment and evaluation of components and systems, and their modifications related to nuclear safety and quality, evaluation of calculation procedures, watching and estimation of service life, specialized activities in welding and defectoscopy).

***RUSSIAN FEDERATION 5: In paragraph 2 of Article 11 of the Convention there is a requirement stating that the activities related to safety shall be provided with the sufficient number of specialists during the whole life of nuclear installation. In section 6 of the Report, devoted to the same Article, the information is given only on training the personnel working at nuclear installation. What are the Institutes of higher education in the Czech Republic for special education on the work at nuclear installations and could they prepare the sufficient number of new specialists in this field?***

Nuclear research and nuclear education have long tradition here in the Czech Republic, dating back to turn of this century. Just for example, in her research, Madam Curie was making use of the uranite mined at Jáchymov (North-western Bohemia) already in beginning of this century.

Currently, the nuclear engineering can be studied at the Faculty of Physics and Nuclear Engineering of the Prague Technical University (ČVUT). To the department of nuclear reactors of this Faculty a so-called „school nuclear reactor“ is available, being of the ŠKODA Plzeň original design. This facility is also being used for the selected staff training in theory by the only organization operating the nuclear power plants in the Czech Republic - ČEZ, a.s. The Faculty and other universities, as well as the higher schools in the CR, of course, make it possible to study other related fields as well, which can be applied in the nuclear power engineering (nuclear chemistry, electrical engineering, electronics, materials, etc.). In recent years, however, the new students have manifested less interest in these branches.

***RUSSIAN FEDERATION 6: In section 6 of the Report, devoted to Article 11 of the Convention, it is indicated that the reserve fund for decommissioning of NPP Dukovany has been already formed and is being filled up. What are the sources of this fund (special addition to the price of supply of electric energy, or something else)? Have the regulatory documents on the procedure of spending the fund been already approved?***

The question has been put imprecisely. No fund is mentioned in the National Report, but a financial reserve for nuclear installation decommissioning. Obedient to the Atomic Act and aware of the need to decommission the nuclear installation or site with a significant or very significant source of ionizing radiation, every licensee is obliged to build up continuously a financial reserve, so that the fund would be available to satisfy the need of any decommissioning, doing so timely and at the level required and in compliance with the manner of decommissioning approved by the Office.

Unlike the Nuclear Account is owned by state, the above mentioned financial reserve is an accounting reserve composing a special part of licensee's liabilities. The law does not require depositing these funds on any special banking account. The reserve, however, is covered by the licensee's assets and, according to the Atomic Act, in the case of licensee's property becomes a subject of competition due to bankruptcy, the assets corresponding the level of this reserve must be excluded from this subject.

The reserve is being accumulated at the level of the ČEZ, a.s. company as a whole and at its costs, not being built up from any special (additional) surcharge to the price of electricity, not even to the price of power generated by the NPPs. Due to the electricity imports into the Czech Republic, such special surcharges would not be suitable either. Within the rules for setting the transfer electricity prices between ČEZ, a.s. and distributing companies (REAS), the creation of the reserve has been accounted for by the State Regulating Administration (a part of Ministry of Industry and Trade).

The scope of activities included in the term of „nuclear installation decommissioning,, meaning those that can be funded from the reserve has already been defined under article 2, letter n) and under article 18, letter h) of the Atomic Act. The details of this reserve utilization to fund the individual decommissioning activities will be specified in the SÚJB Regulation „On Decommissioning of the Nuclear Installations or Sites with Sources of Ionizing Radiation.

***RUSSIAN FEDERATION 7: In assessment of fulfillment of the obligations under the Convention the Report does not give the due attention to paragraph (ii) of Article 14 of the Convention. This paragraph requires that the current physical state and operation of nuclear power plant continue to comply with its design. This is rather important, having in mind the necessity to provide for compatibility of the measures, listed in Appendix 1 to the Report, with the original design. Such compatibility could be provided with wide involvement of Russian organizations - designers of WWER, to planning and implementation of modifications at NPP Dukovany and Timeline.***

## **NPP Dukovany**

The NPP Dukovany upgrading program called „MORAVA“ comprises a variety of the actions incorporated here from various resources (IAEA missions, audit, safety and other analyses, etc.) Each of these actions was scrutinized and assigned with priority and preliminary implementation schedule. Currently a summary documentation is elaborated at the Dukovany NPP, being actually a safety concept of modernization and Feasibility Study in its nature.

On the basis of the ČEZ, a.s legislation and the related legislation of the Dukovany NPP, either a so-called technical and economical estimation or business intention must be prepared for each action with respect to the preliminary estimated financial demands. This documentation gives details why the action must be implemented and the term of time within which the modification must be finished and why, what is its impact on nuclear safety and NPP design, and is proposing the alternative approaches. The scope of such estimation must also comply with the Atomic Act (Law 18/97 Coll.). Moreover, an operator's obligation is explicitly voiced there to accomplish the nuclear safety affecting reconstruction or other changes only against a license awarded by State Supervisor. In order to win this license, an applicant must submit an application consisting of a series of documents, including a proof that „the consequences of this reconstruction or of other changes to be done will have no adverse effects on nuclear safety, radiation protection, physical safety, and emergency readiness. „

First contracts were reached with the original architect of Atomenergoprojekt Petrohrad, covering the technical assistance and consultations for innovation of the safety-affecting control and indication systems. This original architect has also elaborated a variety of studies and analyses for some minor scheduled changes in functions and structures of this safety related systems. Consultations with the company of Atomstrojexpeort are also being prepared for other parts of upgrading program.

## **NPP Temelín**

To the problems of the required instantaneous compliance of the physical state and operation of a nuclear energetic installation with the relevant design documentation the following can be stated:

- A permanent compliance of the installation actual status with its design documentation (as-built design, engineering documentation,...) is assured in the Temelín NPP within the process of „Configuration Management“. This process respects the usual international practice and is fully based on the IAEA recommendations contained in the codes and



safety instructions of the NUSS program, while observing the requirements of the Czech Code of Law for this branch. The necessary background is provided to this process at the Temelín NPP by the department of Technical Engineering in co-operation with the operational and maintenance sections, over the period of construction, starting, and operation.

- In addition to the others, the installation compliance with the design documentation is assured by projection of all design initials, tenets, and information into the operating manuals, training programs, and other related documents (procedures, rules, etc.). For this purpose the designs have been prepared at the level of conceptual documentation, describing unambiguously the unit modes of normal, abnormal, and emergency operation. The contents of these documents (behavior of NEI and NPP systems) have thereafter been transformed into the relevant operational, but also into start-up documentation.

To the issue of the implemented changes compatibility with the Russian initial design, let's state the following: The original Russian design documentation for the Temelín NPP (Contract No. 85-011/15400) was in its part, barring the „Reaktornaja ustanovka“ (RU) replaced by the Introductory Design prepared by the architect designer EGP Praha, a.s. This Design has been fully co-ordinated in all professions, including its links with the RU design (Contract No. 85-011/18900). If there were some changes, which had to be accomplished even in this part of the design, the particular design approaches were consulted directly between processing party and Russian engineering organizations during the course of their implementation. The chief architect /design engineer is fully responsible for these changes, including all the links with the unaffected parts of the RU design. A comprehensive design documentation of all changes in the above areas used to be ever submitted to the Russian party by the construction contractor (investor) for its judgement and discussions (the co-operation was always based on the contract - such as the one No. 85-011/17300). In this respect it still remains to be said that the chief architect's responsibility for solution of the RU design unaffected by the changes rests in verification of this part of the Temelín NPP design for its correctness with the context of the safety documentation (PBZ, dPBZ, PpBZ) being prepared.

Co-operation with the Russian engineering organisation has never been suspended and is in run until now. On the Temelín NPP, the Czech party (construction contractor, chief architect, chief contractor for technology and buildings, and final contractors) is working with the design supervisor of Atomenergoprojekt and OKB Hidropres on the basis of the contract between the ČEZ, a.s. Temelín NPP and Atomstrojexport. Apart from others, the representatives of the design supervision of this organization are also involved in the process designed to control the changes at the Temelín NPP.