

Engineering Division of the ROSATOM State Atomic Energy Corporation



# REQUIREMENTS TO SUPPLIERS OF EQUIPMENT AND SERVICES IN THE CONSTRUCTION OF NUCLEAR FACILITIES ABROAD

**Sergey A. Streltsov**

Director for Quality Management

ASE Group

*November 15, 2017*



# SERGEY A. STRELTSOV



## DIRECTOR FOR QUALITY MANAGEMENT

Born on June 14, 1963

Education:

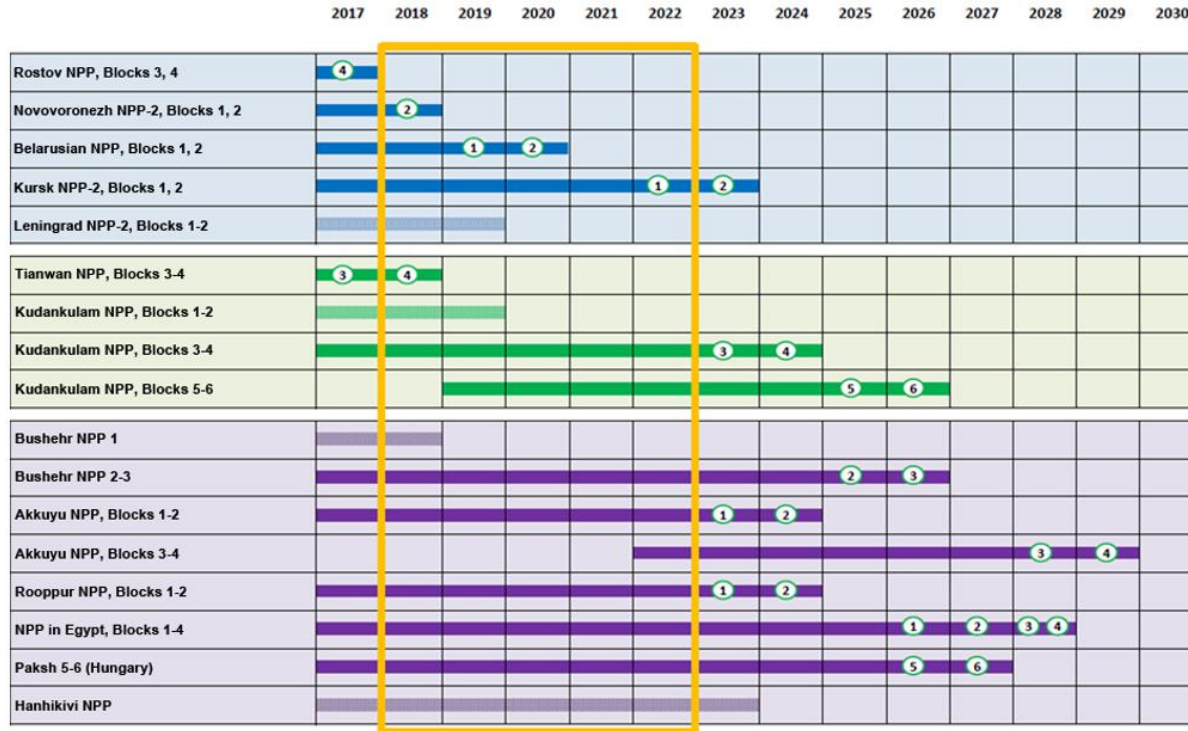
- Ph.D. in Engineering Science
- Dzerzhinsky Military Academy
- Moscow Institute of Physics and Technology

Professional experience:

- 1984 to 1986 – senior lab assistant at the Central Science & Production Association of Vypel;
- 1986 to 2004 – military service;
- 2006-2008 – General Director of VDM-Service;
- Since 2008, senior positions with NIAEP/ASE EC.



# 2018-2022 ROAD MAP OF NPP CONSTRUCTION

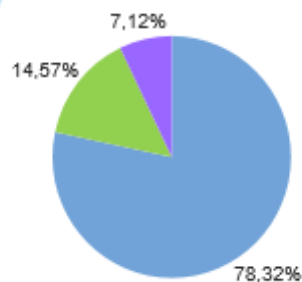


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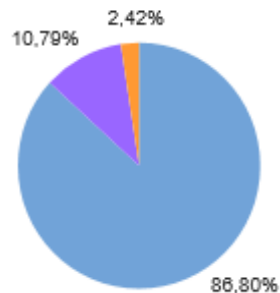
# BREAKDOWN OF EQUIPMENT FOR NPPs UNDER CONSTRUCTION



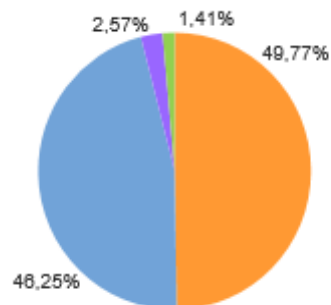
**Bushehr NPP**



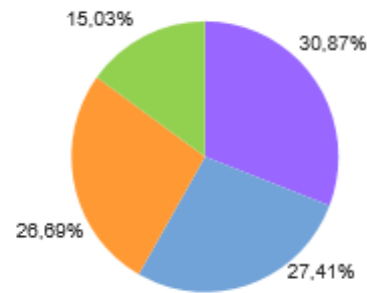
**Kudankulam NPP**



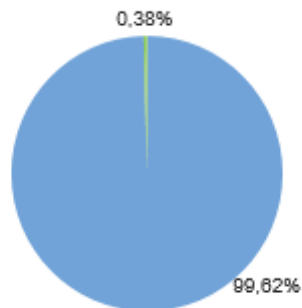
**Paksh NPP**



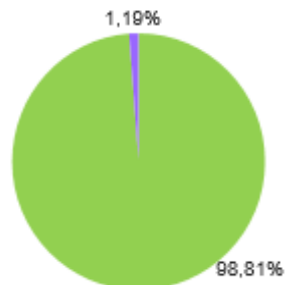
**Rooppur NPP**



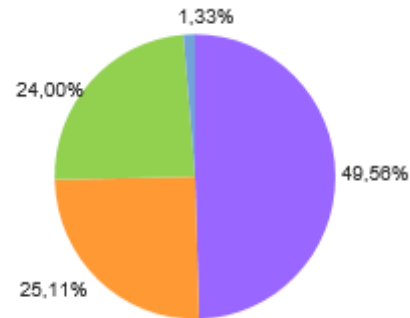
**EI Dabaa NPP**



**Belarusian NPP**



**Kursk NPP**



- Long Term Manufacture Equipment
- Heat Machinery Equipment
- Valves and pipelines
- Electrical Machinery

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# REQUIREMENT TO PAKSH NPP AND HANHIKIVI NPP



PAKSH NPP and HANHIKIVI NPP are built within the territory of the European Union (EU), the requirements for equipment and suppliers are identical.

## The requirements for NPPs in the EU are based on:

- prescriptions of the European Parliament and the Council;
- requirements and safety guides of the International Atomic Energy Agency;
- legislation and national standards of the contracting country (NSC - Nuclear Security Code);
- relevant European standards;
- relevant standards of international standards organizations;
- relevant nuclear and non-nuclear standards of the contracting country;
- relevant approved internal regulations, procedures, and other regulatory documents used by the Contractor;

# PRODUCTION-RELATED OBLIGATIONS OF THE SUPPLIER

## PAKSH NPP AND HANHIKIVI NPP



- Obtain a nuclear qualification certificate from the customer (nuclear assessment of the supplier);
- Obtain a permission from a nuclear energy supervisory authority (HAEA in Hungary, STUK in Finland) for production and transportation, as well as a separate permit for material acquisition;
- Obtain a certificate of conformity for materials marked with EU symbols;
- Contract an accredited third party (independent experts) for quality control at various production stages, the NANDO list is available on the EU website;
- Use in-house or third-party (involved through subcontracting) laboratories certified in the EU.

# REQUIREMENTS FOR NUCLEAR QUALIFICATIONS OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



## THE SOURCE OF REQUIREMENT

- **Nuclear Safety Code**

Volume 2 / Req. 2.5.3.1300: The licensee of a nuclear installation shall develop and maintain a certification system in accordance with the law for suppliers.

Volume 9 / Req. 9.2.2.0200. The vendor evaluation process shall include: ... c.) an assessment of the supplier's capabilities in the analysis of the site and the supplier's personnel and the application of the Quality Management System.

- **App. 1.1 2.5 to the EPC Contract**
- **Nuclear requirements of the Customer**



# REQUIREMENTS FOR NUCLEAR QUALIFICATIONS OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



Section 30 of Government Decree 118/2011. (VII.11.)

**in 30. § it is specified as follows:**

- (1) The license may contract suppliers to perform the work related to nuclear safety. In these cases, it shall be deemed liable for ensuring nuclear safety.
- (2) To confirm the adequacy of the suppliers to be contracted, the licensee of a nuclear installation shall develop and maintain a supplier certification system.





# REQUIREMENTS FOR NUCLEAR QUALIFICATIONS OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



Section 30 of Government Decree 118/2011. (VII.11.)

## **30/A. §**

Subject to Article 23, the licensee shall maintain a full-scale control system that extends to all organizations contracted at the appropriate stages of the life cycle, introducing a differentiated approach and considering account nuclear safety requirements for monitoring individual processes.



# REQUIREMENTS FOR NUCLEAR QUALIFICATIONS OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



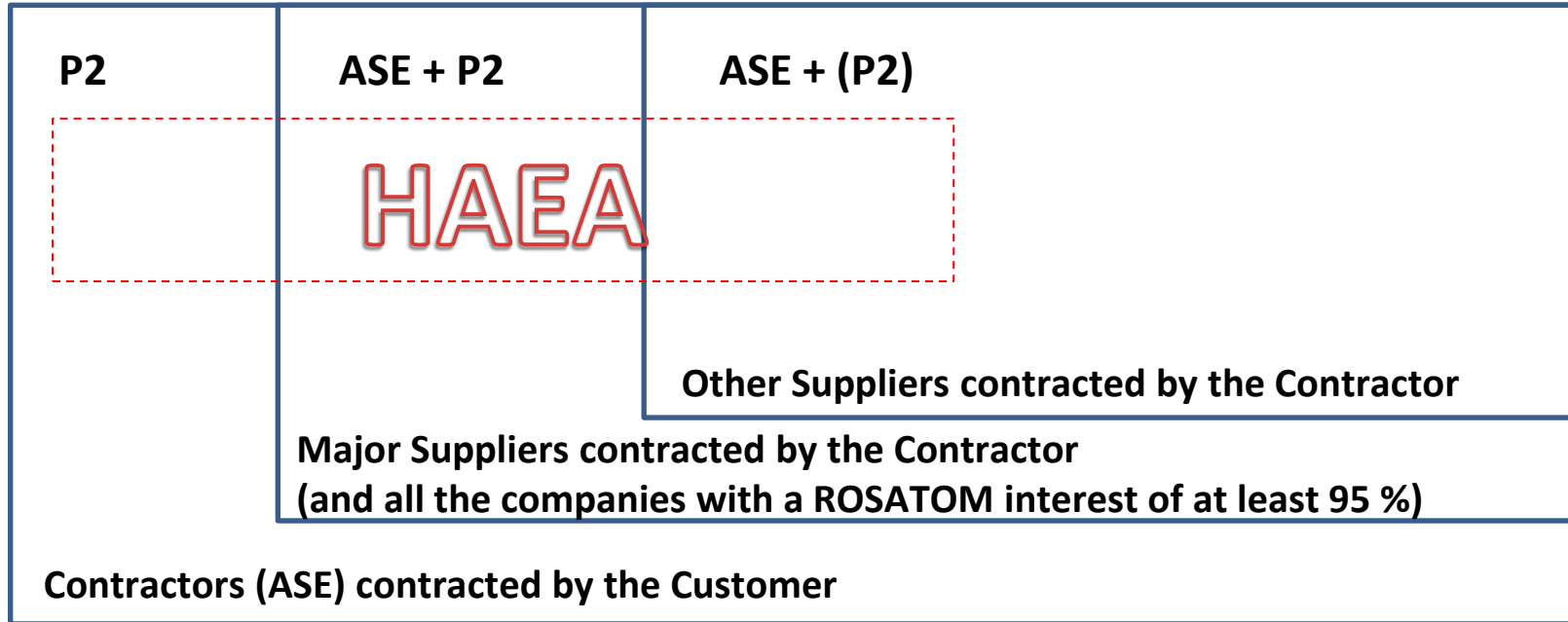
Section 30 of Government Decree 118/2011. (VII.11.)

## **30. §**

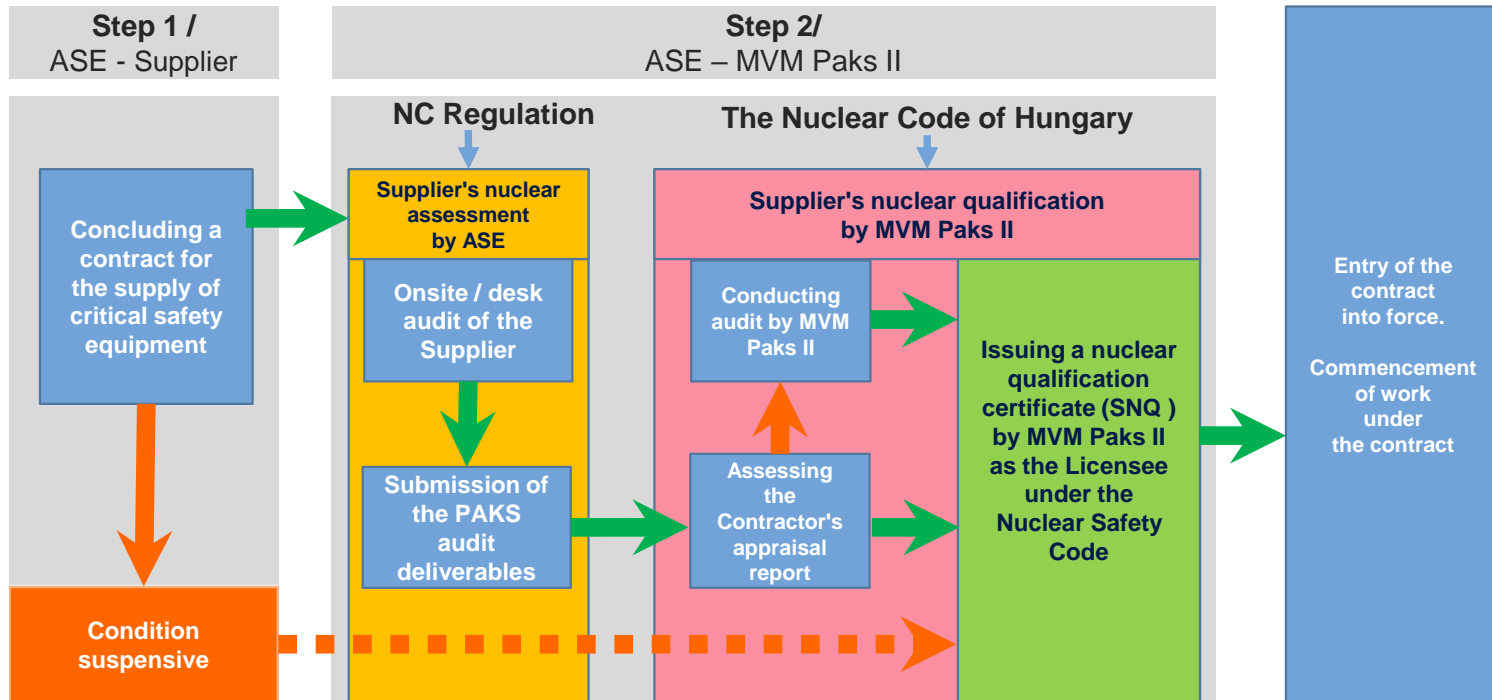
(3) Prior to and in the course of performing the supplier's work, the licensee shall ensure that the supplier has provided for the conditions necessary to perform the work.



# REQUIREMENTS FOR NUCLEAR QUALIFICATIONS OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



# THE LAYOUT FOR NUCLEAR QUALIFICATION OF SAFETY EQUIPMENT SUPPLIERS, PAKSH-2 NPP CONSTRUCTION PROJECT.



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# REQUIREMENTS FOR SUPPLIERS FOR THE NUCLEAR QUALIFICATION OF THE PAKSH NPP AND HANHIKIVI NPP PROJECTS



- A Quality Management System Certificate, licenses, and other permits issued by a national regulatory body for the implementation of the declared type of activity;
- Quality Manual (ISO 9001), supplier quality policy;
- List of supplied equipment by safety class;
- Experience in supplying class equipment to nuclear power plants;
- Information about the personnel certification system, the personnel development system of the supplier;
- Information confirming the availability of a certified laboratory to conduct non-destructive / destructive control or information on contracting this activity out (if applicable);
- Information confirming the availability of the personnel certified for performing V&DT (visual and dimensional tests), welding work (if applicable);
- The procedure of using the current control system for the implementation of corrective and preventive actions, handling of nonconforming products.

# THE MANUFACTURER MUST OBTAIN A PERMIT FROM THE SUPERVISORY BODY OF PAKSH NPP AND HANHIKIVI NPP



## PRODUCTION PERMIT

To be issued for a period not exceeding 5 years

The permit entitles you to produce and transport:

- Safety Class 1 system components;
- Safety Class 2 system components or pressure equipment, and pipelines;
- Safety Class 3 pressure equipment and pipelines;

## PERMIT TO PURCHASE

To be issued for a period not exceeding 5 years

The permit entitles you to purchase:



# THE RESULTS OF NUCLEAR QUALIFICATION OF THE MAIN ROLE PLAYERS IN THE PAKSH-2 NPP CONSTRUCTION PROJECT



**CERTIFICATE**

The MVM Paks II. Nuclear Power Plant Development Ltd.  
(Gagarin st. 1, 7030 Paks, Hungary)  
hereby confirms that the

QUALITY SYSTEM OF  
**ASE Engineering Company JSC**  
(3 Svobody sq, Nizhny Novgorod, 603006, Russia)  
**MEETS THE REQUIREMENTS.**

SCOPE:  
Project management and design management activities in accordance with the IPC Contract of Paks Unit 5 and 6

**CERTIFICATE VALID UNTIL: Issue of the Paks II. project nuclear facility implementation license**

NUMBER OF AUDIT: SNQ/007/2017

This certification is valid only with the conditions set out by the audit report  
Paks, 5<sup>th</sup> May, 2017.

Melinda Fehercsik Horváth  
Director for Licensing and Supervision Division

Béla Nagyfalvi  
Head of Quality Management and Quality Supervision Department

**CERTIFICATE**

The MVM Paks II. Nuclear Power Plant Development Ltd.  
(Gagarin st. 1, 7030 Paks, Hungary)  
hereby confirms that the

QUALITY SYSTEM OF  
**ASE ATOMPROEKT JSC**  
(Savushkina street 82, 197183, St. Petersburg, Russia)  
**MEETS THE REQUIREMENTS.**

SCOPE:  
Development of the Basic Design, design and first-priority detailed design documentation, Development and submission of the information model of the Paks II NPP to the Owner, Development of the FSAR, Probability safety analysis of the 1<sup>st</sup> and 2<sup>nd</sup> level for on-site and external impact, Development of technical requirements for Paks II NPP systems, Integration of documentation developed by subcontracting organizations in the NPP design, interaction with designers of the equipment, Author's supervision during the equipment installation and the commissioning works.

**CERTIFICATE VALID UNTIL: Issue of the Paks II. project nuclear facility implementation license**

NUMBER OF AUDIT: SNQ/008/2017

This certification is valid only with the conditions set out by the audit report  
Paks, 22<sup>nd</sup> May, 2017.

Melinda Fehercsik Horváth  
Director for Licensing and Supervision Division

Béla Nagyfalvi  
Head of Quality Management and Quality Supervision Department

**CERTIFICATE**

The MVM Paks II. Nuclear Power Plant Development Ltd.  
(Gagarin st. 1, 7030 Paks, Hungary)  
hereby confirms that the

QUALITY SYSTEM OF  
**Orgenergostroy**  
(Derbenevskaya Nab., 7, 115134 Moscow, Russia)  
**MEETS THE REQUIREMENTS.**

SCOPE:  
Performance of engineering and geological, meteorological and environmental survey at the site of the Paks II units and the location of CBS, Development of the Basic Design and Detailed Design documentation of the CBS.

**CERTIFICATE VALID UNTIL: 31.12.2019.**

NUMBER OF AUDIT: SNQ/009/2017

This certification is valid only with the conditions set out by the audit report  
Paks, 02<sup>nd</sup> June, 2017.

Melinda Fehercsik Horváth  
Director for Licensing and Supervision Division

Béla Nagyfalvi  
Head of Quality Management and Quality Supervision Department

**CERTIFICATE**

The MVM Paks II. Nuclear Power Plant Development Ltd.  
(Gagarin st. 1, 7030 Paks, Hungary)  
hereby confirms that the

QUALITY SYSTEM OF  
**NRC KURCHATOV INSTITUTE**  
(1. Akademica Kurchatova pl. Moscow, 123182, Russia)  
**MEETS THE REQUIREMENTS.**

SCOPE:  
Scientific supervision of the design of the reactor plant, Development of the technical specification and the design of the reactor plant, nuclear fuel operation and the chemical report of the cooling water in the primary circuit, Participation in the development of the FSAR in terms of severe accidents.

**CERTIFICATE IS VALID UNTIL: Issue of the Paks II. project nuclear facility implementation license**

NUMBER OF AUDIT: SNQ/012/2017

This certification is valid only with the conditions set out by the audit report  
Paks, 22<sup>nd</sup> July 2017.

Melinda Fehercsik Horváth  
Director for Licensing and Supervision Division

Béla Nagyfalvi  
Head of Quality Management and Quality Supervision Department

PAKS II.  
**CERTIFICATE**

NUMBER OF AUDIT: SNQ/011/2017

The Paks II. Nuclear Power Plant Development Ltd.  
(Gagarin st. 1, 7030 Paks, Hungary)  
hereby confirms that the

QUALITY SYSTEM OF  
**JSC OKB GIDROPRESS**  
(21, Dzitshonkizka str. 142103 Podolsk, Moscow region, Russia)  
**MEETS THE REQUIREMENTS.**

SCOPE:  
Development of the basic design documentation of the reactor plant, Development of technical specifications for the main SSC of the reactor plant, Development of technical reports, Interaction with designers of SSC.

**CERTIFICATE VALID UNTIL: Issuing of the Paks II. project nuclear facility implementation license**

NUMBER OF AUDIT: SNQ/011/2017

This certification is valid only with the conditions set out by the audit report  
Paks, 19<sup>th</sup> October, 2017.

Melinda Fehercsik Horváth  
Director for Licensing and Supervision Division

Béla Nagyfalvi  
Head of Quality Management and Quality Supervision Department

# MEASURES TO ENSURE NUCLEAR QUALIFICATION OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT



## THE MEASURES REQUIRED:

- The Customer has approved the following:
  - ✓ The nuclear assessment **regulations** as a project management procedure (PMP), which is part of the project documentation, including all subcontracts;
  - ✓ The nuclear qualification **methods**;
  - ✓ A **checklist** - a standard questionnaire to confirm nuclear qualifications.
- A “**NC discussion platform**” (monthly meetings with the Customer on nuclear qualification issues) has been introduced and is maintained on a permanent basis,





# MEASURES TO ENSURE NUCLEAR QUALIFICATION OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT (THE REGULATIONS FOR NUCLEAR SUPPLIERS ASSESSMENT)



Construction of Paks II Nuclear Power Plant Units 5 and 6,  
Hungary  
Сооружение 5 и 6 блоков АЭС «Пакш II»,  
Венгрия

## REGULATIONS

for the evaluation procedure for the suppliers of NPP safety related equipment within the scope of Paks II NPP construction project based on the Hungarian nuclear requirements

## РЕГЛАМЕНТ

порядка проведения ядерной оценки поставщиков оборудования, важного для безопасности АЭС, в рамках проекта сооружения АЭС «Пакш-II» на основании венгерских ядерных требований

Code/Код: PAKSII-PPM-02.2.03

Revision 1 / Ревизия 1

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Paks II NPP Units 5 and 6	REGULATIONS for the evaluation procedure for the suppliers of NPP safety related equipment within the scope of Paks II NPP construction project based on the Hungarian nuclear requirements	Rev.: 1	Page: 2/28
	РЕГЛАМЕНТ порядка проведения ядерной оценки поставщиков оборудования, важного для безопасности АЭС, в рамках проекта сооружения АЭС «Пакш-II» на основании венгерских ядерных требований		

### REVIEW AND CONCURRENCE SHEET/ ЛИСТ РАССМОТРЕНИЯ И СОГЛАСОВАНИЯ ON BEHALF OF THE OWNER/ОТ ЗАКАЗЧИКА

Approved by / Утверждено	Position / Должность	Name / ФИО	Signature / Подпись	Date / Дата
Agreed by / Согласовано	Project Manager / Руководитель Проекта	LEHOKA LEVAYE		18 Jan 2015
Agreed by / Согласовано	Head of Dept / Начальник Управления	ESKOL HORVATH		18 Jan 2015
Agreed by / Согласовано	Head of Dept / Начальник Управления	ESKOL HARTMAN Dr.		18 Jan 2015

### ON BEHALF OF THE CONTRACTOR/ОТ ПОДРЯДЧИКА

Approved by / Утверждено	Position / Должность	Name / ФИО	Signature / Подпись	Date / Дата
Agreed by / Согласовано	Project Manager / Руководитель Проекта	G. Terkay G.O. Terkay		
Agreed by / Согласовано	Head of Division / Начальник Управления	V. Zorya V.B. Zorya		
Agreed by / Согласовано	Deputy Head of Division / Зам. нач. Управления	R. Balayan P.C. Balayan		
Agreed by / Согласовано	Head of Division / Начальник Управления	V. Samorodov V.A. Samorodov		
Agreed by / Согласовано	Expert / Эксперт	I. Belyaeva I.I. Belyaeva		



PAKSII-PPM-02.2.03

# MEASURES TO ENSURE NUCLEAR QUALIFICATION OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT (A DATA SHEET)



## QUESTIONNAIRE / ОПРОСНЫЙ ЛИСТ

of a safety related equipment manufacturer for PAKS-II Project / изготовителя оборудования, важного для безопасности по Проекту АЭС "Пакш-2"

### 1. GENERAL INFORMATION: / ОБЩИЕ СВЕДЕНИЯ:

1.1	Company name, legal address: Наименование предприятия, юридический адрес:		
1.2	Nuclear Evaluation Group: Группа проведения ядерной оценки:	Head of Group / Руководитель группы: _____ (Full Name / ФИО)	Group members / Состав группы: _____ (Full Name / ФИО)      _____ (Full Name / ФИО) _____ (Signature, Full Name / Подпись, ФИО)      _____ (Signature, Full Name / Подпись, ФИО)
1.3	Representatives of the Owner: Представители Заказчика:	_____ (Full Name / ФИО)	_____ (Full Name / ФИО)
1.4	Representatives of the supplier: Представители Поставщика:	_____ (Full Name / ФИО)	_____ (Full Name / ФИО)
1.5	Place of audit: Место проведения оценки:		
1.6	Date of audit: Дата проведения оценки:		



### 2. QUESTIONS FOR NUCLEAR EVALUATION: / ВОПРОСЫ ДЛЯ ПРОВЕДЕНИЯ ЯДЕРНОЙ ОЦЕНКИ:

No.	NIS Section/ Paragraph / Раздел/Пункт/ требование NIS	Question / Вопрос	No non-conformities Weight = 1 / Несоответствия отсутствуют Вес = 1	Medium and Minor non-conformity Weight = 0.5 / Средние и малые несоответствия Вес = 0.5	Major (critical) non-conformity Weight = 0 / Крупные (критические) несоответствия Вес = 0	Check-box field / Проверочное поле	Note for the reasons of the Major (critical) non-conformity / Указание причины крупного (критического) несоответствия
<b>Management system - General part / Система управления – Общая часть</b>							
1.	11.3.2011-2013) EPIC 9.4.1.0100 9.4.1.0300	Please present the Quality Management System (QMS) certificate of the company. What is its scope? Please present the licenses related to the activities of the company. Пожалуйста, представьте сертификат на Систему менеджмента качества (СМК) компании. Какова область его применения? Просьба предоставить лицензии на виды деятельности компании.					It is necessary to give an answer for calculation. / Для расчета необходимо дать ответ.



# MEASURES TO ENSURE NUCLEAR QUALIFICATION OF EQUIPMENT SUPPLIERS FOR THE NEEDS OF THE PAKSH-2 NPP CONSTRUCTION PROJECT (THEMED MONTHLY MEETINGS)



**MINUTES OF THE TOPICAL MEETING ON THE CONSTRUCTION OF UNITS 5 AND 6 NPP PAKS II**

Date: October 05<sup>th</sup>, 2017

On behalf of the Owner  
According to the attendance list

The Parties agreed on the agenda attached to the MoM).

- The Parties verified the implen held on September 13<sup>th</sup>, 2017 is
- The schedule for nuclear qualif
- The Owner informed the Co equipment and performing safe all the suppliers developing it subject to licenses
- The Owner informed the Cons can be obtained only after subn ILE excluded.
- The Owner informed the Co construction license (Szegmbe under its authority can be subm
- The Contractor proposed the es representatives of the Owner a procurement.
- The Owner informed the Cert Hungarian regulatory authority.

**IV. DECIDED**

Topical Meeting of the suppliers evaluation

- The Contractor will send to the Owner the list of organizations involved in the project implementation (as of 05.10.2017) and the technical specifications to the contracts.
- The Contractor will forward to the Owner the QAP (G1) corrected in compliance with the Owner's comments as well as the feedback before 25.10.2017.
- The Owner confirmed that in case of a successful nuclear qualification procedure unavailability of the QAP (M) with the supplier by the time of nuclear qualification shall not be cause for non-issuance of the nuclear qualification certificate by the Owner.

Next Topical Meeting

- The Parties plan to hold the next Topical Meeting on 08.11.2017 in Moscow, the following Topical Meeting on 13-14.12.2017 in Paks.

**V. ATTACHMENTS**

- Agenda of the Topical Meeting
- Attendance registers of the Topical Meeting
- Draft version of the nuclear evaluation and qualification process

<b>SIGNED BY (ON BEHALF OF THE OWNER)</b>	<b>SIGNED BY (ON BEHALF OF THE CONTRACTOR)</b>
Name and signature: <i>[Signature]</i>	Name and signature: <i>[Signature]</i>
Name and signature: <i>[Signature]</i>	Name and signature: <i>[Signature]</i>

**DISCLAIMER**

Regarding the content of this document, the Parties expressly declare that neither shall be deemed as a joint declaration of any kind of the Contractor's JSC ASE EC, formerly JSC NAPP's obligations, nor shall it be deemed that the Owner (SZVM Paks II Ltd) undertakes any obligation from the Contractor, which is not laid in the JSC Contract under any of its Appendices.

Any information and/or data exchanged and/or given to the other Party based on this document has the sole aim to help the communication and cooperation between the Parties and does not, under any circumstances, impose or ease the Contractor's liabilities and obligations stipulated in the scope of the JSC Contract and/or its Appendices.

MOM-171005-PAKSHII-ASEM-TOM-QMS

**MINUTES OF THE TOPICAL MEETING ON THE CONSTRUCTION OF UNITS 5 AND 6 NPP PAKS II**

Date: 13 September 2017

Place:

**I. PARTICIPANTS**

On behalf of the Owner  
According to the attendance lists

**II. AGENDA**

- The Parties agreed in the agenda during the preparation of the Topical Agenda attached to the letter No. K/P2-08327/2017. (The Agenda attached to the letter No. K/P2-08327/2017.)

**III. DISCUSSED**

- The Parties verified of the implementation the decisions of the MI which held on 9 August 2017 in Paks.
- The Parties informed the Contractor about the connection be qualification of the safety related equipment manufacturer (K/P2/08326/2017, dated 01. September 2017) according to its experiences of the Contractor's and its subcontractors'. Based on suggests to the Contractor to pay attention to the procurement plan equipment according to the planned deadlines of the tenders.
- The Contractor presented the draft Program of suppliers inspection qualification form of a safety related equipment manufacturer for the methodology suggested by JSC ASE EC. The Contractor prep of the 1<sup>st</sup> Quarter of 2018. The Parties agreed that the Contractor w Topical Meeting (add one month to the plan).
- The Contractor presented the draft Program for inspection of Contn
- The Owner clarified the necessity of the QAP (M) for the success Parties agreed that the QAP (M) will be developed by the manufacturer Contractor. The Owner declared that the approved QAP documentation package to be sent to the Owner to decide on the prepared a draft version of the nuclear evaluation and qualification the Owner's declaration according to the necessity of the QAP (M to the MoM).

MOM-170913-PAKSHI-P2NP-TOM-QMS

**MINUTES OF THE TOPICAL MEETING ON THE CONSTRUCTION OF UNITS 5 AND 6 NPP PAKS II**

Date: 13 September 2017

Place:

**I. PARTICIPANTS**

On behalf of the Owner  
According to the attendance lists

**II. AGENDA**

- The Contractor described the planned structure of the manual presented the logic of the control of the suppliers' chain and it process.
- The Owner described the logic and the necessary steps from commencement of the manufacturing works.
- Discussion of the form and conditions of keeping the register of a qualification procedures.
- The Parties discussed about the Contractor's plans according to 1 potential suppliers of equipment manufacturers for PAKS II Contractor.

**III. DISCUSSED**

- The Parties verified of the implementation the decisions of the MI which held on 9 August 2017 in Paks.
- The Parties informed the Contractor about the connection be qualification of the safety related equipment manufacturer (K/P2/08326/2017, dated 01. September 2017) according to its experiences of the Contractor's and its subcontractors'. Based on suggests to the Contractor to pay attention to the procurement plan equipment according to the planned deadlines of the tenders.
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**IV. DECIDED**

Topical Meeting of the suppliers evaluation

- The Owner will review the draft Program of suppliers' inspect qualification form of a safety related equipment manufacturer it will discuss the results on the next Topical Meeting.
- The Owner will review the draft Plan of the nuclear qualification Parties will discuss the results on the next Topical Meeting.

Information sessions by ASE EC/JSC

- The Contractor shall inform the Owner about the planned date Topical Meeting.

**QAP (M)**

- The Owner shall send its comments to the Contractor second September 2017.
- The Contractor shall send the feedback according the Owner's c Meeting.
- The Parties will discuss the draft version of the nuclear evaluati this next Topical Meeting.

Access to the Owner's database

- The Owner will inform the Contractor about the conditions and Owner's SNQ database until the next Topical Meeting.

MOM-170913-PAKSHI-P2NP-TOM-QMS

**Next Topical Meeting**

- The Parties plan to hold the next Topical Meeting on the next day of the advanced audit of the OKB Gudopress (in the first half of October) in Moscow.

**V. ATTACHMENTS**

- Agenda of the Topical Meeting
- Attendance registers of the Topical Meeting
- Draft version of the nuclear evaluation and qualification process

<b>SIGNED BY (ON BEHALF OF THE OWNER)</b>	<b>SIGNED BY (ON BEHALF OF THE CONTRACTOR)</b>
Name and signature: <i>[Signature]</i>	Name and signature: <i>[Signature]</i>
Name and signature: <i>[Signature]</i>	Name and signature: <i>[Signature]</i>

**DISCLAIMER**

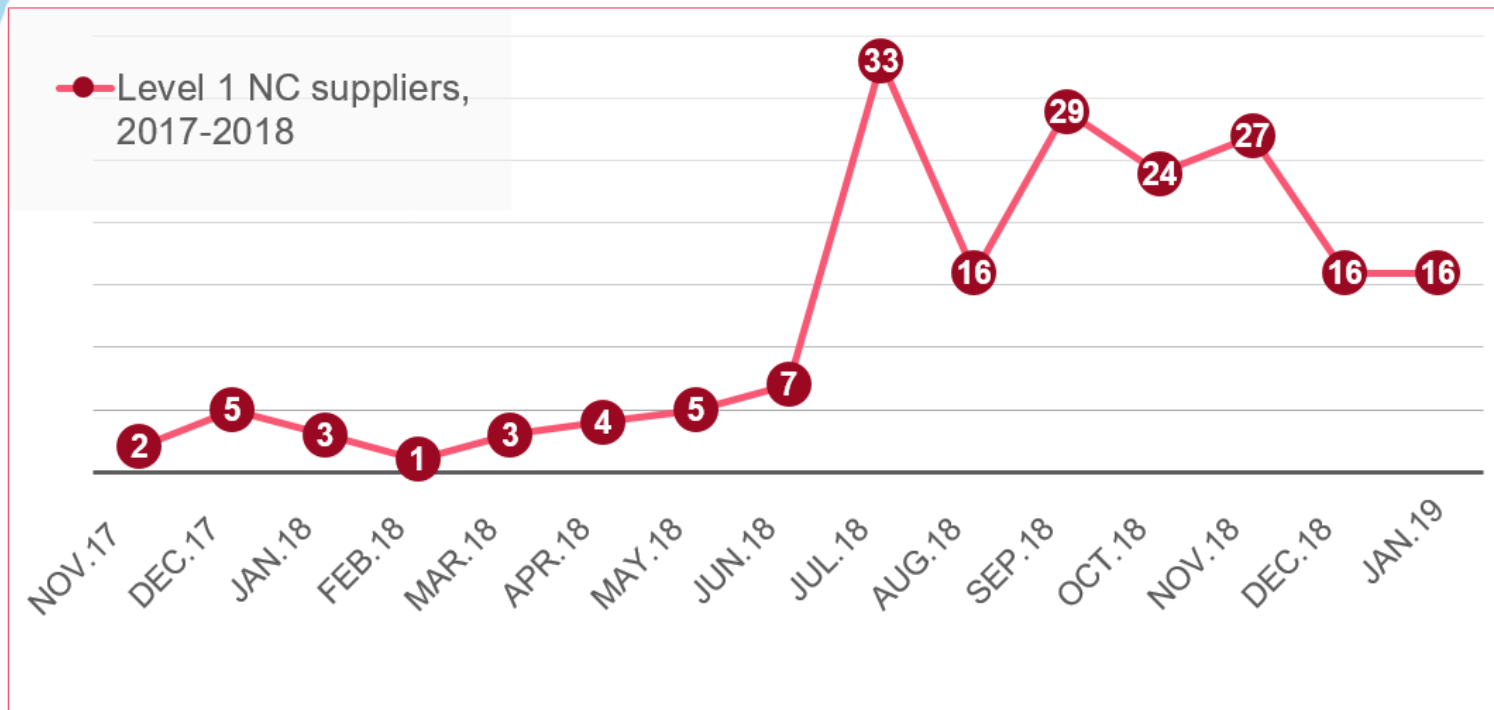
Regarding the content of this document, the Parties expressly declare that neither shall be deemed as a joint declaration of any kind of the Contractor's JSC ASE EC, formerly JSC NAPP's obligations, nor shall it be deemed that the Owner (SZVM Paks II Ltd) undertakes any obligation from the Contractor, which is not laid in the JSC Contract under any of its Appendices.

Any information and/or data exchanged and/or given to the other Party based on this document has the sole aim to help the communication and cooperation between the Parties and does not, under any circumstances, impose or ease the Contractor's liabilities and obligations stipulated in the scope of the JSC Contract and/or its Appendices.

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## THE QUALIFICATION SCHEDULE OF EQUIPMENT SUPPLIERS, PAKSH-2 NPP CONSTRUCTION PROJECT



## INTERACTION WITH THE CONTRACTORS IN THE CONSTRUCTION OF PAKSH NPP II



1. To assist the contractors in their preparation for nuclear qualifications, a special ASE unit has been established (headed by Viktor Yashkov)
2. To determine whether the contractors are ready for nuclear qualification, ASE conducts preliminary audits
3. Regular seminars are planned, with the participation of suppliers' representatives in order to clarify the nuclear qualification requirements.

## SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE KUDANKULAM NPP PROJECT



In accordance with the decision of the Indian Customer (ICAEL), the equipment manufacturers of the Kudankulam NPP shall be approved by the Customer.

This procedure concerns the approval of the ASE EC main subcontractors / suppliers of Safety Class 1, 2, 3 (QA1, QA2, QA3 Quality Categories) and QNC Quality Category equipment for which quality plans are provided for. The approval procedure shall be conducted during tenders for selecting suppliers before concluding a contract with the selected supplier.

Only the actual manufacturer and the design (engineering) organization participating in equipment designing and manufacturing shall be admitted to approval. ASE EC shall submit for approval only the companies that have been qualified within the Quality Management System (the QMS) framework, as confirmed by the audit conducted by ASE EC. The Indian Customer does not consider the ASE EC Subcontractors failed to qualify within the QMS framework as confirmed by quality audit. ASE EC shall decide on the selection of a new Subcontractor, considering the obligations to meet the equipment delivery deadlines established by the contract.

# SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE AKKUYU NPP PROJECT



Supplies of nuclear safety equipment shall be made in accordance with the “Regulation on the equipment supply process and manufactures’ approvals for nuclear installations” of May 28, 2015.

To obtain the approval of TAEK, manufacturers shall attached the following package of documents to their application:

- ISO 9001 certificate (or other globally recognized certificate) attached to a letter from a Turkish accreditation body (TÜRKAK - [turkak.org.tr](http://turkak.org.tr)), confirming such a certificate;
- a guide to the quality management system;
- a list of equipment with a report on the equipment type and characteristics, and the codes and standards to follow during manufacturing, adequacy of the manufacturer's infrastructure;
- a receipt for payment for the amount of 51,000.00 Turkish liras;
- certificates issued by the regulatory authorities of other countries in respect of the Manufacturer's activities.

Prior to the equipment manufacturing (at least 2 months before), the Customer (AKKUYU NÜKLEER ANONİM ŞİRKETİ) shall forward to TAEK the documentation submitted by the Manufacturer:

- a quality plan,
- a copy of the Manufacturer's certificate issued by TAEK,
- a document from TÜRKAK confirming the accreditation of the organization (laboratory)that conducts tests, inspections and observations in the course of equipment manufacturing,
- a list of normative acts, guidelines and standards to follow in the course of equipment manufacturing.

## SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE BUSHEHR-2 NPP PROJECT



- In accordance with the Regulation on Licensing the Bushehr-2 Nuclear Power Plant (INRA-NS-RE-053-10/01-0-Dec.2016), the operating organization (NPPD Co.) and INRA/NNSD have developed and submitted to ASE the documents as follows:
- The Regulations on Registering Companies Participating at Various Working Stages of the Bushehr-2, 3 Project (RRP-4000-01).
- The Regulations on Issuing Permits at the Stages of Bushehr-2 NPP Site Selection, Design, Construction, Commissioning, and Operation (INRA-NS-RE-053-10 01-0-Jul.2017).



# SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE BUSHEHR-2 NPP PROJECT



**1. In accordance with the Regulations on Registering Companies Participating at Various Working Stages of the Bushehr-2, 3 Project (RRP-4000-01), all the companies shall be registered with NPPD Co, which perform such activities as:**

- engineering surveys conducted to prepare the input data for the NPP detailed design;
- design and manufacture of Safety Class 1, 2 and 3 equipment, including SPTA;
- installation of Safety Class 1, 2 and 3 equipment;
- maintenance and repair of Safety Class 1, 2 and 3 equipment;
- construction of earthquake-proof buildings and structures;
- transportation of nuclear materials, heavy equipment and radioactive waste;
- processing and storage of (fresh and spent) nuclear fuel;
- loading/unloading of fuel to/from the reactor;
- commissioning work related to Safety Classes 1, 2 and 3 systems and equipment;
- safety-related activities at Bushehr-2 and 3 NPPs;
- major overhaul of Bushehr-2 and 3 NPPs;
- work related to decommissioning Bushehr-2 and 3 NPPs.

## SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE BUSHEHR-2 NPP PROJECT



- 2. In accordance with the Regulations on Issuing Permits at the Stages of Bushehr-2 NPP Site Selection, Design, Construction, Commissioning, and Operation (INRA-NS-RE-053-10 01-0-Jul.2017) all the companies shall be registered with NPPD Co, which perform such activities as:**
- engineering surveys carried out to prepare the input data for the NPP Detailed Design based on the license for siting the NPP;
  - designing the NPP systems (of Safety class 1 and 2);
  - design engineering of the reactor plant and its components;
  - construction work for buildings and structures of Seismic Resistance Category I and II (for construction and installation organizations) based on the NPP construction license;
  - handling nuclear fuel, including its bunkering, transportation through the NPP territory, storage of fresh and spent nuclear fuel, loading in the holding pool and the reactor, reloading and removal of nuclear fuel off the site, based on the licenses for NPP construction, commissioning or operation;
    - Stage A (including pre-commissioning, if any), based on the licenses for NPP construction and commissioning;
    - Stage B (physical start-up), based on the NPP commissioning license;

## SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE BUSHEHR-2 NPP PROJECT



- Phase C (reactor power startup and reaching the design production capacity), based on the NPP commissioning license;
- removal of radioactive waste off the NPP site, based on the NPP operation license;
- repair and/or installation of equipment and pipelines in the course of reconstruction or modernization (for installation organizations), based on the licenses for NPP commissioning and operation;
- repair and/or installation of the critical safety equipment, including APCS equipment, in the course of reconstruction or modernization (for organizations offering electrical and installation services), based on the licenses for NPP commissioning and operation;
- pre-commissioning and testing of the critical safety equipment and systems, including those reconstructed and modernized (for commissioning organizations), based on the licenses for NPP commissioning and operation;
- design and manufacture of safety-related pipelines, equipment and their components (of Safety Class 1, 2), for manufacturers in Iran, the Russian Federation and other countries.

**3. The subcontractors manufacturing Safety Class 3 equipment shall obtain permits from NPPD Co. for the activities performed.**

## SPECIFIC REQUIREMENTS FOR SUPPLIERS WITHIN THE FRAMEWORK OF THE ROOPUR NPP PROJECT



- Experience in supplying class equipment to nuclear power plants;
- Quality Manual (ISO 9001), supplier quality policy;
- In case of involving non-Russian Subcontractors to perform the Work within the territory of the Country and to supply the Equipment, the Customer shall approve the Subcontractor in writing (by e-mail, letter, fax, etc.) within 10 (Ten) business days of the request. The Customer will provide its approval for the selected Subcontractor in writing (by e-mail, letter, fax, etc.) within minimum reasonable deadlines, but in any case within 1 month, so that it does not affect the implementation of the project schedule

# THANK YOU FOR YOUR TIME!