**Contract No.**

**For**

**Engineering Services and Technical Support of Operation of Bushehr NPP Unit No. 1**

**Between**

**Nuclear Power Production** **and Development Co. of IRAN**

**and**

**Rosenergoatom Co. (REA**)

Tehran, 2014

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Nuclear Power Production and Development Co. of Iran (NPPD Co.) duly represented by Mr. Mohammad Ahmadian NPPD Co. Managing Director, Vice-president of AEOI, hereinafter referred to as “Principal”, on the one hand, and Rosenergoatom (REA), being the Consortium Leader established according to the contract dated \_\_\_.06.2014 No\_\_\_\_\_\_\_\_ the company duly represented by Mr. S.I. Antipov, Deputy Director General, acting on the basis of Power of Attorneies No 9/109/2014-DOV dated 28.02.2014 and No \_\_\_\_-DOV dated \_\_\_.06.2014,hereinafter referred to as “the Contractor” on the other hand and hereinafter collectively called “the Parties”, have agreed to sign the present Contract, hereinafter referred to as “Contract” of the following.

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**ABBERIVIATIONS AND DEFINITIONS**

The following terms shall have the meanings specified in this Article;

* 1. **Addenda to the Contract** means document(s) signed by and between the Parties in order to modify, supplement or emend the terms and conditions of the Contract.
  2. **Bushehr NPP (BNPP)** consists of one power unit VVER-1000/446, constructed by Atomexport Joint Stock Company (ASE JSC) under the contract with NPPD.
  3. **BNPP Operation Company** means the company authorized by the NPPD for safe operation of the BNPP.
  4. **Between Overhauls period** meanstimebetween two consecutive (planned general and intermediate maintenance of the equipment) and also between the equipment commissioning and its first planned general maintenance.
  5. **Contract** herein means the present Contract, its General Provisions together with Appendices for the whole scope of services.
  6. **Contractor** herein means Rosenergoatom (REA) and its legal representatives, successors and assignees.
  7. **Contractor’s administrative and technical specialist** meansthe Contractor’s staff sent to the BNPP Site or Tehran in order to organize the work of the Authorized Representative, experts and specialists of the Contractor, with the costs to be paid by the Contractor. The administrative and technical specialist are appointed by the Contractor.
  8. **Contractor's Bank** herein means \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Moscow, the Russian Federation.
  9. **Contract’ general provisions** means terms and conditions described in Articles 1 to 24 of the Contract.
  10. **Contractor’s Authorized Representative** means the person designated by the Contractor, which has official permission to represent the Contractor, whom shall officially notify to the Principal.
  11. **Engineering services** means a complex of engineering and consultative services, research and analytical works, elaboration of recommendations in the production and management areas, operation of facilities and equipment, realization of output.
  12. **Expert or specialist** mean the Contractor’s specialists or the Contractor’s subcontractor’s personnel sent to the Site/Tehran in order to carry out the Contractor’s Service and works under supervision of the Contractor’s Authorized Representative.
  13. **IRI** means the Islamic Republic of Iran.
  14. **Party** herein means the Principal or the Contractor.
  15. **Plant** means Bushehr Nuclear Power Plant.
  16. **Principal** herein means NPPD, and its legal representatives, successors and assignees.
  17. **Principal's Bank** herein means central bank of IRAN.
  18. **Principal's Representative** means the person, firm or corporation designated by the Principal to perform the duties assigned to the Principal's Representative under the Contract.
  19. **RF** means the Russian Federation.
  20. **Service** means the Contractor’s Technical and Engineering Support that are required under the present Contract.
  21. **Site** means the location of the units of Bushehr NPP in Bushehr, IRI.
  22. **Technical Support** means providing technical recommendations, assist, analysis, advice and consulting for safe, reliable and efficient operation of the equipment and/or systems of the BNPP, in addition to the contents or for clarification of the contents of design, manufacturing, commissioning and/or operational and repair and maintenance documentation.
  23. **Technical Commercial Proposal (TCP)** means the Contractor’s offer for rendering particular services on Technical Support and/or Engineering Support based on the Principal’s Work order, which shall be in compliance with the terms and conditions of the Contract.
  24. **TAVANA** means the company responsible for technical support of all NPPs in IRI. Duties and Responsibilities of TAVANA Co. shall be defined by the Principal.
  25. **Work order** means a written document (application) containing the Principal request describing the type and scope of Services are required to be performed by the Contractor under the present Contract (see Appendices 2 and 3).
  26. **Abberiviation**

1. AFPS - Automated Fire Protection System
2. AIMDS – Automated Individual Dose Monitoring System
3. APCS – Automated Process Control System
4. ARMS – automated radiation monitoring system
5. ASKRO – Automatic Environmental Radiation Monitoring System
6. BNPP - Bushehr Nuclear Power Plant
7. CP - Cooling Pond
8. CPS – Control and Protection System
9. CPS-EE – Electric Equipment of Control and Protection System
10. ICSS – Initializing Control Safety System
11. ECLCS - Emergency Coolant Level Control System
12. EPSS - Emergency Power Supply System
13. ESFAS – Engineering Safety Features Actuating Cabinets
14. I & C – Instrumentation and Control
15. SIRM - In-Core Monitoring System
16. ISI - In-Service Inspection
17. IOPRS – Important Operating Parameters Registration System
18. IPI – Intellectual Property Item
19. OJSC – Open Joint Stock Company
20. FA – Fuel Assembly
21. FP – Fire Protection
22. FSS – Full-Scope Simulator
23. GM – General Maintenance (Overhaul)
24. HP HTR - High Pressure Feedwater Heater
25. HPT – High Pressure Turbine
26. LPT - Low Pressure Turbine
27. ICUF – Installed Capacity Utilization Factor
28. LP HTR - Low Pressure Feedwater Heater
29. LRW – Liquid Radioactive Waste
30. MCDS – Monitoring, Control and Diagnostics System
31. MCR – Main Control Room
32. MFA - Ministry of Foreign Affairs
33. NMS – Neutron flux monitoring system
34. NPP – Nuclear Power Plant
35. NPPD - Nuclear Power Production and Development Company
36. PSA – Probabilistic Safety Analysis
37. RCPS – Reactor Coolant Pump Set
38. REA – Rosenergoatom company
39. RCD – Remote Control Device
40. RI – Reactor Installation
41. SBEOI - Symptom-Based Emergency Operating Instructions
42. SAMG - Severe Accident Management Guidelines
43. SPM – Scheduled Preventive Maintenance (Overhaul)
44. SG – Steam Generator
45. TC – Training Center
46. TCP – Technical and Commercial Proposal
47. TG – Turbine Generator
48. TM – Technical Maintenance
49. M & R – Maintenance and Repair
50. TPTS – Engineering Software and Hardware Tools
51. UULS - Upper Unit Level System
52. V.A.T. – Value Added Tax
53. VVER – Pressurized Water Reactor
54. WANO - the World Association of Nuclear Operators
55. WC – Water Chemistry (Water Chemistry Balance)
56. CJSC – Closed joint Stock Company
57. PM – Preventive Maintenance
58. IDD-
59. DDD-

# ARTICLE 1- OBJECTIVE OF THE CONTRACT

The Contractor shall carry out Technical and Engineering Support in order to maintain and enhance nuclear safety and operation reliability and efficiency of the BNPP-1.

# ARTICLE 2- SUBJECT OF THE CONTRACT

The subject of the present Contract is rendering Engineering and Technical Support by the Contractor to the Principal for safe, reliable and efficient operation of the BNPP-1 and provision of rendering Services associated with including, but not limited to, , operation, maintenance, repair and upgrading of BNPP-1 (hereinafter referred to as “Services”) to the principal and assistance to establish the Technical Support Organization (TAVANA Co.).

# ARTICLE 3- SCOPE OF SERVICES

3.1 The non-limited list of areas of the Contractor’s Services is as follows:

* + 1. In-core nuclear fuel management including, amongst others, long-term nuclear fuel management strategy (long-term strategy for nuclear fuel consumption, mobility, etc.), organization and support of the scheduled/unscheduled nuclear fuel reloading scheme.
    2. Thermohydraulic analysis and accident analysis, including living PSA.
    3. Nuclear fuel and related technologies, including feed-back in the field of operational experience and utilization of different types of nuclear fuel.
    4. Non-destructive test of nuclear power plant components, including reactor and steam generators.
    5. Monitoring, alarming and diagnostics systems, vibration diagnostics, equipment failures analysis, leakage diagnostics; technical maintenance of the Russia-supplied diagnostics systems.
    6. VVER 1000/446 upgrading, including:
* ICUF increase;
* fuel assemblies upgrading;
* summary analysis of information on upgrading of Russian power units with VVER-1000 aimed at increasing of the units safety, reliability and ICUF, and provision of the above mentioned information to the Principal to be used in the operation of unit 1 of BNPP.
  + 1. Nuclear wastes management and radiation protection.
    2. Technical Support and consultation during designing, construction and operation of VVER – 1000 or 1200.
    3. Exchange of operational experience related to VVER-1000 units, including: development of operational documentation, in particular of symptom-based emergency operating instructions (SBEOI) and severe accident management guidelines.
    4. Technical support and consultation during repair and maintenance preparation and performance including:
* steam generator replacement;
* steam generator collectors' upgrading and sealing;
* development of maintenance and repair documentations.
  + 1. Training of the Principal’s specialist, conduct of psychophysiological examination of the Principal’s licensed specialist; Organization of psychophysiological testing laboratory for licensed specialist examination at BNPP.
    2. Planning and development of schedule repair and maintenance works in order to reduction of the BNPP-1 outage.
    3. Investigation of the causes of failures (root cause analysis) in the equipment operation.
    4. Trend analysis of the equipment technical condition.
    5. Conduct of independent inspections of REA experts at BNPP.
    6. Operating data exchange with respect to events, failures and accidents, remedial activities and actions implemented to prevent their recurrence in future.
    7. Life Management/extension of the NPP equipment.
    8. Involvement of REA specialists and its subcontractors in the works performed at the BNPP site during maintenance preparation, conduct, and repair of BNPP- 1 (routine, medium and overhaul).
    9. Analysis and evaluation of the reactor vessel coupon samples.
    10. Exchange of information on the units’ performance indicators in the frame of WANO.
    11. Justification (verification) of the analysis of Russian NPPs upgrading, development of corresponding proposals and rendering technical assistance.
    12. Organization of annual seminars on Russian NPPs’ sites on such topics as operation, maintenance and repair, upgrading, technical assistance.
    13. Formation of a Technical and Engineering Support group of REA’s permanent representatives for operation supervision.
    14. Participation in the maintenance of the main components: turbines, generators, RCP, generator exciters, steam generators, reactor, reactor control and protection system, high-pressure feedwater heater, low pressure feedwater heater etc. of BNPP-1.
    15. Review, assessment and validation of the analysis made by the Principle.
    16. Supply of the required computer codes and softwares for technical support and training of principal personals.
    17. Assistance in verification and validation of computers codes and software’s developed by Principal.
    18. Conduct of special training courses and on- job training for the Principle’s specialist in the field of Technical Support and Engineering Services.
    19. Submission of detailed data regarding any calculations/analysis, including computer modeling of systems/equipment.
    20. To equip of BNPP Training Centre with additional simulators and necessary training materials.
    21. Assistance to establish and control of aging degradation management for systems/structures/equipment of the BNPP-1.
    22. Assistance on development of an efficient surveillance and equipment qualification program.
    23. Development of the program, safety assessment and rendering support in Unit No.1 changeover to 6-8 years cycle of technical inspection of main NPP equipment of group A, B and 12-16 years cycle for group C as per PNAEG-7-008-89.

3.1.34 The Contractor shall render services by sending specialists to Principal’s offices (Bushehr NPP/Tehran). These specialists shall give nesseseary cunsultantcy in establishment of the Technical Support Organization.

3.1.35 During the rendering services for the BNPP in Russian Federation (REA/Subcontractors) and based on request of Principal, the Contractor may engage Principal’s specialist.

## 3.2 The list of engineering services to be provided by the Contractor to the Principal, its scope and required number of the Contractor’s specialists during operation of unit 1 of BNPP, during overhaul and in between overhauls period should be specified in additional orders of the Principal.

The scope of services shall be calculated as a number of specialists multiplied by the number of months.

## 3.3 The scope of services to be provided by the Contractor for Technical and Engineering Support shall be specified based on the Principal’s Work order .

## The scope of services shall be calculated on the basis of the reimbursment rate of the Contractor’s specialist and technical and commercial proposal (TCP) approved by the Principal.

## 3.4 The non-limited list of the Contractor’s subcontractors under i.3.2 and i.3.3 3 and its specialization is specified in Appendix 1 to the Contract.

3.5 The cooperation issues shall be revised and complemented annually by both Parties and all changes shall be included in Addenda to the Contract.

# ARTICLE 4- GENERAL CONDITIONS FOR PROVIDING SERVICES AND PROCEDURE OF INTERACTION

4.1 In conformity with the subject of the Contract, the Contractor shall provide services to the Principal in the following areas:

* Technical and Engineering Support for operation;
* Technical and Engineering Support for repair and maintenance;
* Carrying out upgrade of systems and equipment of BNPP-1.
* Assistance to establish the Technical Support Organization (TAVANA Co.)

The provisions of the Work order for rendering Services by the Contractor for the above-mentioned areas are described in the Appendix 4 to the Contract.

4.2 In the event of emergency cases, endangering the safety or protection of persons, the Unit or the property of the Unit, the Principal shall promptly notify to the Contractor by any available communication for receiving the Technical or Engineering Support for mitigation and remedy of such threatened damage, loss or injury. In this case, the cost of the Contractor’s service shall be agreed upon by the Parties based on the terms and conditions of the present Contract after fully removal of the imposed endangers.

4.3 During the provisions of the Contractor’s Services stipulated under the present Contract, if the need of equipment, spare and replacement parts, computer codes and software are to realized, the Contractor is obligated to provide such equipment, spare and replacement parts, computer codes and under terms and conditions of a separate contract.

# 4.4 In order to establish Iranian TSO (TAVANA Co.), the Contractor cooperate in TSO’s activities through participation of its experts. The relevant duties and job description of the contractor specialist in Tehran are described in Appendix 6(Table 6.2).

# ARTICLE 5- OBLIGATIONS OF THE PRINCIPAL

5.1. Before the specialists are assigned to render the Services to the Principle under Article 3, the Principal shall submit to the Contractor the Work order, which includes, among others, description of the required Services, qualification, enterprise, duration of employment, etc. (See Appendix 2).

5.2 The Principal shall assist the Contractor, to the possible extent, in obtaining all necessary information and documents in written form to ensure that the Contractor’s specialist can enter Iran in accordance with legal requirements for entry and stay.

5.3 The Principal undertakes to ensure access of the Contractor’s specialists, as required, to all available regulatory and supervisory documents. All the above mentioned documentation, if available, shall be provided in English or Russian. The Principal shall also provide the Contractor with access to the site building structure.

5.4 The Principal is entitled to check the working capability, discipline of the dispatched experts on regular or random basis.

5.5 The Principal reserves the right to request the Contractor to replace any of the assigned Contractor’s specialists at any time during the performance of the Contract. Such a request, however, shall be based on reasons and supported by substantiating facts (e.g. insufficient qualification level, serious violations of the company’s internal rules, and breach of public order).

5.6 The Principal undertakes to provide the Contractor’s specialists with office premises and all necessary working facilities at the Principal’s expense, such as computer per each specialist, shared fax machine, shared printer and copy machine, e-mail, IDD and international telephone line only for authorized representative of the Contractor at the contractor’s expense, personal protective equipment and work overalls. Videoconferences and electronic messages associated with the on-site available services, as well as IDD and DDD telephone calls made to the suppliers of equipment and services upon the Principal’s request shall be paid by the Principal.

5.7 The Principle undertakes to provide each Contractor’s permanent specialist and its family members and each assigned expert with family houses or single units in Morvarid Camp with a kitchen, bathroom with a bath and shower, including, cold and hot water, toilet, one-man bedroom with air conditioners as well as with equipment as per Appendix 13. In case of the equipment failure, its repair and replacement shall be performed at the expense of the Principal.

The Principal undertakes to provide each Contractor’s expert sent to Tehran with an apartment or a single room in a four-star hotel with the similar equipment.

In case of the Contractor’s specialist staying at RF trade representation area in Tehran, the Contractor’s rental expenses shall be paid by the Principal in the amount of single room price in a four-star hotel against an invoice submitted by the Contractor.

5.8 Assigned specialists are supposed to make their meals at their own expenses with the ready-made furniture in the kitchen. Besides, the dispatched specialists are entitled to have their meal at their own expenses at the public canteen of the Principal.

5.9 The Principal shall, at the Principal’s expense, timely meet and see off the dispatched specialists and permanent representative’s family members at the Tehran International Airport and Bushehr domestic airport, as well shall take care of their luggage and provide for the Contractor’s specialist transfer between residential area and Bushehr NPP site and over Bushehr NPP site territory (see Appendix 13).

Technically fit transport vehicles (bus) with drivers shall be provided for the assigned specialists’ travel to the working place on BNPP site and back to the residence place in Bushehr before the beginning and after ending of a working day.

In Tehran, the Principal shall ensure the Contractor’s specialist transportation to their workplaces and back to their residence place before the beginning and after ending of a working day.

5.10 Assigned experts, permanent representative and family members shall be provided with medical services out patiently at Shahed polyclinic in Morvarid camp, in Bushehr and in Tehran at the Principal’s expense. The services like installation of dentures and glasses purchasing for the Contractor’s assignees shall be effected at their own expense. The assigned specialist and family member with acute pain or serious illness will be transported to emergency hospital of the Principal as quickly as possible. The expenses for hospital treatment will be reimbursed by the Contractor. If an injury occurs to the Contractor’s specialist during the working time due to the Principal’s fault, all the expenses associated with the medical treatment, prosthetic appliance and material compensation for the health injure of the Contractor’s expert are to be covered by the Principal (See Appendix 13).

5.11 The Principal at its own expense shall arrange annual medical examination of the experts or specialists who will stay at BNPP site/Tehran over 1 (one) year and put the examination reports on personal record.

5.12 The Principal shall provide to the Contractor's specialists, who perform their work within the harmful condition with the protective and supplementary diet served at BNPP Site according to Appendix No. 18.

5.13 The Principal shall provide monthly personal accounting and control of visiting by the Contractor's specialist of the Controlled Access Area as well as submitting of Certificate of Radiation Burden of the Contractor's specialist for each year on the request of the Contractor.

5.14 The Principal undertakes to appoint the concerning persons as the Principle’s Representatives, who on behalf of the Principal shall be responsible for all the works arrangement, coordination, reviewing and signing the relevant documents with the Contractor for any matters arising from and in connection with the implementation of the present Contract upon the completion of the works.

5.15 The working conditions and accommodation of the Contractor’s administrative and technical specialist shall the same as those stipulated for the Contractor’s experts in accordance with the Article.

# ARTICLE 6- OBLIGATIONS OF THE CONTRACTOR

6.1 The Contractor undertakes to select qualified specialists according to the requirements of the Principal (according to Appendix 10) and send by fax the names and qualifications of the candidates to be dispatched to Iran for the review and approval by the Principle.

6.2 According to the feedback opinion from the Principal, the Contractor shall inform the certain persons and make sure that all the specialists finally selected by the Principal are ready for the departure to the I. R. of Iran.

6.3 The Contractor shall be responsible for obtaining all travel documents and visas for the assigned specialists. The Principal undertakes to provide assistance in obtaining the visas, such as timely presenting the letters of invitation.

6.4 At least 5 days before the departure, the Contractor shall send personal information by fax, which indicates the names and positions of experts, as well as copies of their passports and arrival notice: departure time, destination, flight No., the authorized representative for each group.

6.5 The Contractor on their own shall take measures for getting employment permits for the Contractor’s specialist issued by the respective authorities. However, the Principal shall show assistance to the Contractor in this respect.

6.6 During the performance of the Services envisaged in the present Contract, the Contractor, upon agreement with the Principal, can recall and replace its assigned specialist with other assignees with the same qualification because of health condition or other reasons. The Contractor undertakes to bear all charges connected with the recall and replacement of the specialist.

6.7 The Contractor’s assignees shall be educated to observe the laws of Iran and respect the customs, laws, decree, regulations, orders, licenses, permits, and other official provisions valid in Islamic Republic of Iran and traditions existing in Iran, fulfill regulations in force in the Iranian organizations, as well as office routine, safety manuals and other rules, with which they will be acquainted in these organizations.

6.8 If any of the Contractor’s assignee dies while staying in Iran, the Principal undertakes to develop a package of necessary documents and transport the body of the deceased to Moscow at the expenses of the Contractor.

6.9 Work schedule of the Contractor’s specialist is given in Appendix 12.

6.10 The Contractor undertakes to appoint specialists and also to designate its Authorized Representative and shall officially notify to the Principal. The Contractor’s Authorized Representative is also responsible for making the arrangement and coordination of interaction with the Principal.

6.11 The Contractor shall at its own expense provide its assigned experts with the medical insurance and casualty insurance.

6.12 The Contractor’s specialists involved in rendering Services under the Contract and managers, undertake to work in close collaboration in the framework of the Contract, taking into account competence and limitations of the Iranian legislation or other official documents accordingly.

6.13 The Contractor shall adhere to the rules and regulations of the BNPP related to safety and radiation protection. The specialists of the Contractor shall work in accordance with the requirements of Iranian specialists in the area of radiation protection. It is imperative to the Contractor’s specialists to receive training related to safety and radiation protection before carrying out the assignments under the Contract.

Provided radioactive contamination of the Contractor’s specialist occurs due to its incompliance of the radiation protection instructions, the fact shall be investigated by the Commission, the results of such investigation findings shall be made in writing prior to departure of the above specialist from BNPP site.

The aforementioned Commission shall consist of the representatives of the Parties: NPPD and authorized representative of REA at BNPP site.

6.14 All taxes and duties in accordance with Article 9 of the Contract shall be paid by the Contractor.

6.15 The Contractor shall be responsible for timely fulfillment of its obligations under the present Contract.

6.16 The Contractor is responsible for any damages inflicted to its specialist, property and subcontractors during performance of the present Contract.

6.17 The Contractor is responsible for damages due to the non-observance of all applicable laws, regulations and official decrees of Iran and BNPP-1 Site.

6.18 The Contractor is responsible for damages inflicted to the specialist and properties of the Principal’s due to its performance of the obligations under the present Contract.

6.19 The Contractor is responsible for any damages or injuries as result of its Services for performing the Technical and Engineering Support under the present Contract.

6.20 The Contractor shall be responsible for observing the regulation of nuclear safety, radiation safety, fire safety and industrial safety and respective consequences during the performance of the services under this Contract.

6.21 The contractor shall provide monthly report in accordance with the format defined in Appendix 8 for the permanent staff. For the contractor temporary staff, the report shall be handed over to the Principal upon completion of the work.

# ARTICLE 7- PRICE OF THE CONTRACT

7.1 The total estimated ceiling price of the Contract for 5 years is Euro …………..(……… . Euro). The final price of the Contract shall be based on the actual Services rendered by the Contractor and approved by the Principal.

7.2 The amount of Services for the Contractor’s permanent specialists on Technical and Engineering Support shall be calculated based on the reimbursement rate for Contractor’s specialist described in Appendix 17 and approved Timesheet by the Principal as per Appendix 7. Total Cost of Services per each month shall be confirmed by signing the “Certificate of Performed Services” (Appendix 15.1) by the Principal.

7.3 The amount of the Contractor’s Services on Technical Support and Engineering Support based on the Principal’s Work order shall be calculated according to the type and scope of Services indicated in the Work order and reimbursement rates presented in the Appendix 17 and approval of the “Certificate of Rendered Services” (Appendix 15) by the principal.

# ARTICLE 8- TERMS OF PAYMENT

8.1 Payments for the Contractor's services shall be effected by the Principal to the Contractor through the documentary Letter of Credit (DLC) in accordance with the terms and conditions of the present Contract. The DLC shall be opened or increased by the Principal in favor of the Contractor for the required amount of each year based on the Uniforms Customs Practice for the DLC published No.600 by International Chamber of Commerce (UCP 600).

8.1.1 Payments to the Contractor’s permanent specialist for providing Technical and Engineering Support stipulated in the Paragraph No. 3.2 shall be effected by the Principal based on the following documents and procedure as per Appendix No. 11:

* Signed commercial invoice in two originals and two copies.
* Certificate of Performed Services approved by the Principal in two originals and two copies (the format of such certificate is specified in Appendix No.15).

8.1.2 Payments for the Contractor for Services on Technical and Engineering Support based on the principal’s Work order stipulated in the paragraph No. 3.3 shall be effected by the Principal against the following documents and procedure as per Appendix No.11:

* Signed commercial invoice in two originals and two copies.
* Certificate of Rendered Services approved by the Principal in two originals and two copies (the format of such certificate is specified in Appendix No.15).

8.2 All bank charges related to the present Contract incurred in Iran shall be covered by the Principal and outside of Iran shall be borne by the Contractor.

8.3 10% (ten percent) of each Contractor's invoices shall be deducted by the Principal as retention for good performance guaranty and will be released as follows:

8.3.1 50% (fifty percent) of the retained retention money of the Contractor invoices on the Technical Support for performed by the Contractor’s permanent specialist as described in the Paragraph 3.2 shall be released within 45 days after elapse of a period of 6 months from the completion date of the Services rendered by the Contractor against submission of the approved Certificate on Release of Retention by the Principal in accordance with Appendix No.9 along with the Contractor’s invoice.

8.3.2 The remaining 50% (fifty percent) out of the said 10% retention shall be released not later than 45 days after successful completion of rendered services at the end of reporting year of the present Contract on the basis of issuance of relevant Contractor's invoice and confirming Certificate on Release of Retention by the Principal in accordance with Appendix No.9.

8.3.3 Retained retention for the performed Services on Technical and Engineering Support provided by the Contractor based on the Principal’s Work orders shall be released within 45 days at the end of guaranty period, against submission of the approved Certificate on Release of Retention by the Principal, together with the Contractor's invoice.

8.4 For performance control of the works performed by the Contractor’s specialist involved in Technical Support , the Contractor’s specialist salary will consist of two parts: one part is fixed and amounts to 60% of the monthly payment, and the second part is variable and amounts to 40% of the monthly payment respectively.

8.4.1 Nevertheless, the amount of the Contractor’s monthly invoices will be paid to the Contractor in full volume with taking into account conditions hereof.

8.4.2 The Principal on a monthly basis, upon expiry of the current month shall issue the Order on Decrease or Increase in the Variable Part of the Contractor’s Specialist Salary, according to the specialist work evaluation criteria specified in Appendix No. 14, and shall advise it to the Contractor.

8.4.3 The Contractor, on the basis of the Principal’s order, shall issue annually its order on decrease or increase in the variable part of the Contractor’s specialist salary to be sent to the Principal for notification.

8.5 The payments under this Contract may be effected in favor of the Contractor by the Principal in Russian Rubles according to the rate set by the Central Bank of Russia at the date of payments.

# ARTICLE 9- TAXES AND DUTIES

9.1 The Contractor shall pay all taxes, customs duties and other fees applicable and imposed in Russia during the Contract execution.

9.2 Consular fees levied from the Contractor by IRI Embassy or Consulate in Russia due to the Contract execution shall be paid by the Contractor.

9.3 The Contractor pay all Iranian legal taxes and duties, including both dollar and rial parts, for instance, income taxes and duties for social insurance for obtaining the social insurance certificate, as well as any fees for obtaining and issuance of work permits and residence permits regarding the Contractor’s specialist employed to work in Iran for the purpose of the Contract execution.

The Principal shall make all payments under the Contract after relevant taxes and duties deduction, with submission of certificates on expenses incurred invoices and certified copies of the source documents to the Contractor.

9.4 In case of any changes in the taxation after signing of the present Contract, the Parties shall adjust and modify the Contract price accordingly.

9.5 The Contractor shall comply with the applicable Iranian tax legislation.

# ARTICLE 10- LANGUAGE

10.1 English shall be the official language for the present Contract and for all documents of payments between the Contractor and the Principal.

10.2 Russian shall be the working language used on site during rendering of services (language of verbal communication between the Contractor’s and the Principal’s (NPPD) experts or specialists).

10.3 All technical documentation presented by the Contractor shall be given in English and Russian language.

# ARTICLE 11- COORDINATION

This Article defines general principles of coordination for the implementation of the present Contract

* 1. The Parties shall authorize their respective representatives to coordinate all activities during the implementation of the Contract and may also authorize other representatives stayed in Russia or in Iran to deal with matters related to the Contract within their respective scopes of responsibility.

The information related to the authorized representatives (including, amongst other things, names, sex, telephone No., fax No, e-mail address, etc) shall be presented to each other by both Parties within two weeks after the date of signing of the Contract.

* 1. The method of communication used by the Principal and the Contractor shall be through different channels, e.g. correspondence, letters, fax, e-mail, personal contacts, meetings, telephone, etc.

Communications on management, commercial and technical issues could be conducted verbally or by electronic means including e-mail at first for the sake of convenience and speediness. Afterwards they shall be officially confirmed by legible writing forms.

# ARTICLE 12- SUSPENSION OF OBLIGATIONS

* 1. During implementation of this Contract, the Principal shall have the right to suspend the rendering of services or any portion thereof by giving to the Contractor a written notice thereof by fax 7 (seven) days prior to the effective date of the suspension. The written notice shall specify the portion of the services to be suspended and the effective date of suspension and the estimated date of resumption, if possible. The original copy of suspension notice shall be sent to the Contractor by registered airmail thereafter or is handed-over to the Contractor’s representative.
  2. Upon the Principal notification, the Contractor shall suspend rendering of services specified in accordance with the notice and use its best efforts to minimize the impact of the suspension with the assistance of the Principal. However, the Contractor shall continue to carry out all unsuspended rendering of services.
  3. If the above suspension is caused by reasons for which the Contractor is responsible, then the Contractor shall correct its imperfection or mistake in performing its obligations under the Contract or eliminate deviation from the quality standards specified in the Contract which caused the suspension and resume the rendering of services as soon as possible without any extra costs to the Principal and/or extension of the Project Schedule as well as the Contractor's responsibility for Contract Warranties. The Contractor shall pay the Principal the additional costs actually incurred by the Principal resulting from the said suspension, but under no circumstances the total sum of these additional costs shall exceed 100% of the cost of the suspended services.
  4. If the above suspension is caused by the reason for which the Principal is responsible, then the Principal shall pay the Contractor the additional cost actually incurred by the Contractor resulting from the said suspension, but under no circumstances the total sum of these additional costs shall exceed 10% of the cost of the suspended services.
  5. The Contractor undertakes to resume rendering of services immediately after the cause of the suspension is eliminated and after receiving the written notice by facsimile or e-mail from the Principal concerning the end of suspension. The original copy of the notice shall be sent to the Contractor by registered mail thereafter.

# ARTICLE 13- PROPERTY RIGHTS

* 1. All materials and documents prepared or developed by the Contractor, its employees, representatives or subcontractors in connection with the subject of the present Contract or performance of the Services, including all manuals, data, drawings, plans, specifications, reports and accounts, shall become the Principal's property when prepared, and the Contractor, its agents, employees, representatives, or subcontractors shall not use such materials and documents for any purpose other than performance of the Services, without the Principal prior written approval. All such materials and documents, together with any materials and documents furnished to the Contractor, its agents, employees, representatives, or subcontractors by the Principal, shall be delivered to the Principal upon fulfillment of the related services, expiration or termination of this Contract.
  2. Materials or documents prepared or developed by the Contractor or its agents, employees, representatives or subcontractors contain proprietary information, systems, techniques, or know-how acquired from third parties by the Contractor, such persons or entities shall retain all rights to use or dispose of such information, provided, however, that the Principal shall have the right to the same to the extent necessary for operation or repair and maintenance of the BNPP.
  3. The Contractor, as concerns all its services, shall be responsible for and shall indemnify and hold the Principal harmless from all charges, expenses, including legal fees, losses or damages which may arise in connection with any claim, action or charge based on the grounds that the Principal or the Contractor or their representatives have in any way violated or infringed any patents or other intellectual property rights of third parties. The Contractor shall at its own costs acquire, if necessary, intellectual property rights and patent or licenses in order to authorize lawful use of the services.

# ARTICLE 14- GUARANTY AND WARRANTY

1. The Contractor warrants the appropriate qualification of its specialists dispatched to perform the Services at the BNPP Site and/or Tehran.
2. The Contractor warrants that its Services are in accordance with the terms and conditions of the present Contract and standard, norms, and regulations valid at BNPP-1.
3. The Contractor warrants the quality of its Services shall be in accordance with the update know-how, expertise and knowledge and the latest internationally proven rules, regulations and proved modern standards for the nuclear power plant.
4. The Guaranty period of the rendered Services are;

- For Technical Support and Engineering Support provided by the Contractor’s permanent specialist is 6 (six) months and will start from the date of singing of the related Certificate on rendered Services by the Principal.

-For Technical Support and Engineering Support provided by the Contractor based on the Principal’s Work orders is 12 (twelve) months and will start from the date of singing of the related Certificate on Performed Services by the Principal.

# ARTICLE 15- THIRD PARTY NUCLEAR LIABILITY

15.1 The Principal shall keep to the Contractor, its subsidiaries, employees and subcontractors indemnified against third Party claim arising from a Nuclear Incident occurring, due to the reason or reasons not attributable to the Contractor in connection with the present Contract, provided that the Contractor shall immediately notify the Principal of any claims for damages against the Contractor from a third Party or other claims. The Principal shall also keep the Contractor indemnified against any nuclear liability, fire safety, labor protection, environmental protection etc.

15.2 The Contractor, its subsidiaries, subcontractors or specialist shall never be liable for any loss or damage of the Principal’s equipment or property, if is caused by a Nuclear Incident occurring, due to the reason or reasons not attributable to the Contractor in connection with the Contract, and shall not bear expenses associated with recovery actions.

# ARTICLE 16- FORCE MAJEURE

16.1 Neither the Principal nor the Contractor shall be liable for failure to meet contractual obligations under the Contract in full or in part due to Force Majeure.

Force Majeure is defined hereunder:

Any circumstances which affect a Party in the performance of its obligations under the Contract, which circumstances are extraordinary, beyond the control of the affected Party, unforeseeable after or at the Effective Date and for which such Party is not otherwise responsible, shall be considered as Force Majeure to the extent that the effect of such circumstances make it impossible for the affected Party to fulfill any of its obligations under the Contract.

The following are examples of circumstances which shall be considered as Force Majeure if they meet the requirements of Paragraph 16.1:

- acts of God;

- war;

- disasters;

- mass riots;

- strikes;

16.2 Should Force Majeure occur, the Parties shall mutually agree on the measures to be taken to minimize the effect of Force Majeure.

However, in any such case the affected Party must have taken in good time all necessary measures to avoid or minimize the effects of such circumstances and may only claim Force Majeure in relation to affects occurring in spite of such measures.

16.3 Should Force Majeure circumstances arise, as defined in Paragraph 16.1, the Party wishing to claim Force Majeure as a justification for nonperformance of its obligation under the Contact must notify the other Party in writing forthwith, upon occurrence of such circumstances, and produce adequate evidence thereof, certified by competent authorities of the related country.

Should the Party affected have neglected to notify the other Party within 72 hours and produce evidence, certified by the competent authorities, such Party shall have no right to claim for Force Majeure.

16.4 If Force Majeure circumstances arise, as defined in present Paragraph 16.1, and if the affected Party has fulfilled its obligations under Paragraphs 16.2 and 16.3, then:

The affected Party shall be released from performing of its obligations on time under the Contract, but only to the extent that said Party was prevented from performing such obligations by Force Majeure. Should Force Majeure have caused delays in the performance of the Contract, the Time Schedules shall be revised .

In case of Force Majeure each Party shall bear its own costs independently of the territory of the origin of Force Majeure circumstances.

However, in case the Contractor has been prevented from fulfilling the Subject of the Contract for a period of more than 12 (twelve) consecutive months from the date of occurrence of such event and the Parties have not reached an agreement or otherwise terminated the Contract and each Party shall bear its own additional cost resulting from the Force Majeure after such period.

# ARTICLE 17- SETTLEMENT OF DISPUTES

17.1 Any and all disputes, disagreements, or questions which may arise between the parties in connection with the interpretation of the Contract or the validity or enforceability or performance or non‑ performance thereof shall be at first stage settled by amicable negotiations between the Parties and if necessary through their highest authorities.

17.2 In case such dispute or disagreement is not settled by amicable discussions between the Parties within 3 (three) months from the commencement of such negotiations, then it will be referred to a board of experts consisting of 3 (three) experts in the field related to the nature of dispute. Each Party shall appoint one expert and the third expert shall be appointed by mutual agreement between the Parties. The board of experts shall render its opinion within 3 (three) months and such opinion shall be binding if it is accepted by the highest authorities of the Parties.

17.3 In case the opinion of the board of experts is not accepted by the said authorities, then the dispute shall be referred to arbitration in accordance with the Rules of Arbitration of Tehran Regional Arbitration Center. The Arbitral Tribunal shall consist of three arbitrators. Each Party shall appoint its own arbitrator and the two thus appointed arbitrators shall select a third arbitrator, by mutual agreement. The third arbitrator shall act as the umpire of the Arbitral Tribunal. The decision of the Arbitral Tribunal shall be final and binding upon both Parties.

17.4. The pursuit of disputes shall not confer upon the Contractor and the Principal any right to cease the fulfillment of its obligations under the Addendum.

17.5. The language of arbitration shall be English and the seat of arbitration shall be Tehran , Iran.

17.6. The nullity, unenforceability or termination of the Contract shall have no effect on this Article.

# ARTICLE 18- LIABILITY

18.1 The Contractor shall be liable until the end of the Contract period for any loss and damage inflicted to the Principal’s personnel and property, Principal’s subcontractors and property and its personnel and property as a result of intentional act or negligence by its personnel.

## The Contractor is responsible for damages inflicted to the Principal and BNPP-1 specialist and properties as the result of improper Technical and Engineering Support in accordance with root cause analysis by BNPP-1 Event Investigation Committee, which shall include Contractor’s representatives.

## 18.2 The Contractor has undertaken to timely perform its obligations and services based on the agreed time schedules and deadlines. In case of delay in performing of the services by the Contractor, then the Contractor shall be responsible for the consequences of such delays and is responsible to pay to the Principal one percent of the price of the related services for each day of delay. However, the Contractor shall take necessary measures for hindrance of probable delays.

## 18.2 The liability of the Contractor shall not exceed 100% (one hundred percent) of the price of the services rendered under the Contract regarding Technical and Engineering Support for each year.

18.3The Contractor shall not be liable for any losses, damage for which the Principal is responsible.

18.4 In case the Contractor dose not receives any payable amounts under the present Contract, the Contractor shall not have the right to suspend the Services on BNPP-1 Sit and/or in Tehran.

However, the Contractor shall be entitle to suspend the related Services as per the Contract if the Principal fails to par the Contractor in excess of one hundred and eighty (180) working days for reasons for which the Principal is responsible for the payment due have not been effected by the Principal during the said period. Furthermore, the Contractor shall give the Principal thirty (30) working days prior notice to allow the Parties to reach a mutually beneficial solution. If no beneficial solution can be obtained during the thirty (30) working days prior notice, then the Contractor is entitled to suspend the related Services up to the date of due payment effected by the Principal.

# ARTICLE 19- CONFIDENTIALITY

19.1. Neither Party shall disclose to third parties without the other Party’s written consent any confidential documents or information received from the other Party in the course of preparation for and performance of the Contract. Such consent shall not be withheld if such disclosure is needed due to the mandatory regulations of the Parties.

19.2. The Parties shall specifically identify or otherwise indicate the documents or information which is reasonably to be treated as containing confidential information in accordance with international practice.

19.3. The Principal shall, at any time have the right to use neutral and independent representatives, consultants, contractors, agents and/or employees mutually agreed upon consultants for the evaluation and use of individual questions related such confidential documents and information. It is understood that the Principal shall enter into similar confidentiality arrangements with its representatives or consultants.

It is understood that the Contractor shall enter into similar confidentiality arrangement with its sub-contractors and sub-suppliers.

# ARTICLE 20- EFFECTIVENESS AND DURATION OF THE CONTRACT

20.1 This Contract shall be effective and into in-force after signing date by the Parties.

20.2 The period for rendering Technical and Engineering Support Services shall be started from the date of the Contract coming into effect and be valid until the Parties fulfill their obligations stipulated in the Contract for five years, unless otherwise specified in other agreement made by the Parties.

# ARTICLE 21- MISCELLANEOUS

21.1 Any amendment shall be confirmed by signing the relevant Amendment to the Contract by the Parties.

21.2 All the Appendices to the present Contract shall form an integral part of the Contract and have the same force as the Contract itself. Should the provisions of the Contract be amended, modified, or supplemented, the official representatives of both Parties shall sign Amendments to the Contract. The present documents shall form an integral part of the Contract and have corresponding effectiveness.

21.3 The Contract provisions together with the Appendices shall supersede any prior contracts, agreements, letters or any other prior statements, verbal or written, between the Parties with respect to the Subject of the Contract from the moment of the Contract comes to effective as per Article 20 of the Contract.

All parts of the Contract are equally binding on the Parties. However, in the event of a discrepancy or conflict in the interpretation of any part(s) of the Contract provisions and any part(s) of the Appendices, the Contract provisions shall take precedence.

21.4 Should for any reason any of the provisions of the Contract be or become void, the remaining parts thereof shall remain valid. The Parties shall agree, if necessary, upon replacement of such void provision with a valid one corresponding as closely as possible to the intention of the void provision.

21.5 This Contract is made and signed by the Parties in 2 (two) original copies in English language, one original for each Party.

# ARTICLE 22- TERMINATION OF THE CONTRACT

22.1 The Principal shall at any time during the period of the Contract have the right to terminate the Contract by giving written notice thereof to the Contractor. Should the Principal choose to exercise its right under this Paragraph then:

-If such a termination is not caused by reasons for which the Contractor is responsible, the Principal shall pay to the Contractor the unpaid amount of the performed Services and approved by the Principal, with balancing of all payments already made by the Principal to the Contractor.

- Should such a termination is caused by non-performance of the Contractor’s contractual obligations for which the Contractor is responsible, and then the Contractor shall pay and reimburse the Principal all payment made by the Principal to the Contractor up to the date of termination together with additional costs incurred by the Principal due to such a termination.

# ARTICLE 23- GOVERNING LAW

This Contract shall in all respects be governed and controlled by the laws of Islamic Republic of Iran which shall include all decrees, legislation, regulations and rules in force promulgated by Iranian authorities and decisions made by said authorities during the validity of the Contract

# ARTICLE 24- LEGAL ADDRESSES

**Nuclear Power Production and Development Co** **of IRAN**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Fax:+

Tel: +

E-mail:

Technical contact:

Mr.

Fax:+

Tel: +

E-mail:

Commercial contact:

**Rosenergoatom (known as REA**) – **the Consortium Leader**

25, Ferganskaya street, Moscow, 109507, Russian Federation

Technical contact:

Authorized on-site representative

Fax:+

Tel: +

Email:

Commercial contact:

Mr. V.V. Golovanov

Tel: (7 495) 647 43 97

Fax: (7 495) 647 43 08

Email: [golovanov@rosenergoatom.ru](mailto:golovanov@rosenergoatom.ru)

Banking details for payments in Rubles:

Invoice account 40702810438250122909

In JSC “Sberbank of Russia” Moscow

Correspondent account 330101810400000000225

Bank Identifier Code 044525225

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| **The Principal** |  | **The Contractor** |
| **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **«\_\_\_\_\_\_\_\_\_»\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2014** |  | **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **«\_\_\_\_\_\_\_\_\_»\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_2014** |

# Appendix 1- List of companies on rendering of engineering services and engineering support of operation of Bushehr NPP (including alerted crew of experts)

|  |  |  |
| --- | --- | --- |
| **Item** | **Company** | **Specialization** |
|  | Atomtechenergo JSC | Automatic process control of Refueling machine |
|  | OKB GIDROPRESS JSC | Reactor Unit equipment, CPS control rod drive mechanisms |
|  | Podolsk machine works JSC (ZiO) | The 2-nd circuit steam generators and equipment |
|  | Izhorskie zavody JSC | Reactor Unit equipment |
|  | Power Machines JSC | Turbine and generator |
|  | CKBM JSC | Main circulation pumps |
|  | Diakont JSC | Refueling machine television control system, Liquid radioactive waste automatic process control system |
|  | SNIIP-SYSTEMATOM JSC | APCS |
|  | Kurchatov Institute NIC | Reactor physics, software, 18-month fuel cycle, basic data |
|  | Fuel Cycle Physics JSC | Reactor physics, software, basic data |
|  | NIKIMT-Atomstroy JSC | Systems for metal control of the Reactor Unit main equipment |
|  | VNIIAES JSC | Transition to 18-month fuel cycle |
|  | SNIIP-ASKUR Co Ltd. | APCS |
|  | Atomenergoproekt | General designer of NPPs |
|  | NIAEP JSC | Authorial NPP design supervision |
|  | SPbAEP JSC | Authorial NPP design supervision |
|  | NPO TsKTI JSC | Secondary circuit equipment |
|  | OKBM Afrikantov JSC | Pumps and ventilation units |
|  | Kolomenskiy zavod JSC | Diesel generators |
|  | SverdNIIchimmash JSC | Evaporators |
|  | NPO TsNIITMASH JSC | Metal tests |
|  | ENITS JSC | APCS |
|  | IPU RSA | APCS |
|  | VNIIA FSUE | APCS |
|  | FNPTs NIIIS FSUE | APCS |
|  | VNIIEM NPP | CPS electric equipment complex |
|  | PSZ FSUE | APRMS |
|  | KB Promengineering JSC | ARSMS and ASIDM |
|  | Instrument factory TENZOR JSC | AFPS |
|  | Obninsk R&D Center Prognoz | Conduct of psychophysiological examination of licensed specialist |
|  | REA | Engineering Services and Technical Support of operation |
|  | Atomtechexport JSC | Engineering Services and Technical Support of operation |
|  | Atommashexport JSC | Refueling machine |
|  | Moscow plant Fizpribor JSC | Racks (remote control device) |
|  | Tseller JSC | Emergency coolant level control system |
|  | SNIIP JSC | APCS |
|  | NTL-Pribor JSC | Thermal control devices |
|  | NIITFA JSC | Boron concentratometer |
|  | NPP Radiation Monitoring. Devices and Methods JSC | Radiation monitoring devices |
|  | VO Elektroapparat JSC | High-voltage electrical equipment |
|  | INPK Russian energy technologies CSC | Hydrogen recombiner, hydrogen concentration monitoring system |
|  | DIANA TREST | Special laundries equipment |
|  | EnergoIntegration JSC | Electrical equipment of the emergency power supply system |
|  | ESCO-Engineering | Maintenance and repair of equipment |
|  | Stroyelectromontazh Group of Companies | Maintenance and repair of equipment |
|  | JSC «Atomenergoremont» | Maintenance and repair of equipment |
|  | «InterpromAvtomatica», Ltd. | Auxiliary boiler house upgrading |

# Appendix 2-Application Form for sending specialists to ВNPP Site/Tehran

Working Order of Service.

Please, be notified that the following experts (specialists) are to start the service work under the Contract No.\_\_\_, at ВNPP worksite/Tehran on the date given below.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| No. | Position | Organization | Starting date | Ending Date | Remarks |
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Applied by (Name) (Position)

Approved by (Name) (Position)

# Appendix 3-Application Form for the Engineering Services at the Principal’s Request

|  |  |  |  |
| --- | --- | --- | --- |
| Name of Issue to be Settled |  | Principal/ Principal’s Dept. |  |
| Date of Request |  | Deadline of the Response |  |
| Description of subjects to be solved and requirement made by the Principal | | | |
| Attachment |  | | |
| Applicant |  | Received by |  |
| Confirmed by |  | Performed by |  |

# Appendix 4-General conditions for providing services by the Contractor

1- **Technical support for operation**

1.1 For provision of long-term services, a Contractor’s authorized representative(s), specialists of the Contractor shall be sent to the site/Tehran.

Provision of Services shall be carried out in conformity with the Principal’s request on a long-term basis. Additionally, the Contractor, upon the request of the Principal, shall provide services of briefing and consultative character regarding operational experience of power units in Russia, except copyright protected data.

The interaction of the Principle and the Contractor at the Contractor’s experts sending to IRI for technical support of operation is as follows:

Stage 1. The Principle shall send a request drawn up in accordance with Appendix 2 specifying the specialty (areas of rendering services) and duration of starting/finishing services. The Contractor, REA, shall be indicated in the “Organization” column.

Stage 2. The Contractor shall consider the request, select candidates for rendering the required services. The specialists are selected among experienced NPP staff, affiliates of REA. The examination of the request with exception of the emergency cases shall be up to 2 weeks.

After considering the results, the Contractor shall chart full names of the specialists together with their working experience (resume or CV) and send them to the Principle. The place of employment of the specialist (NPP/affiliate) shall be indicated in the “Organization” column.

Stage 3. The Principal shall consider the proposals regarding the list of the performers and, in case of no reproof, shall send an official order-letter drawn up according to Appendix 2.

Review of the order shall be up to 2 weeks.

Stage 4. The Contractor shall send copies of the following documents to the Principal:

* + personal data form
  + passport copy
  + copy of education diploma including work experience.

Stage 5. The Contractor shall get employment visas form F-30 (visa with labour permit) to the specialists. Time period for visas arrangement is 2 months and more.

Stage 6. Once the visas are received, the Contactor shall inform the Principal about its readiness to send specialists.

Stage 7. The Principal shall send a consent letter about receiving specialists within the indicated period and about readiness of accommodation.

Stage 8. The Contractor shall send the specialists and inform the Principal about their departure. The Principal shall provide meeting of the specialists at the airport and their accommodation according to place of residence.

Stage 9. The Contractor, with the Principal’s assistance, shall send the documents of the business traveler in order to get employment certificate and residence permit.

1.2. List of specialist that can be involved in technical support for operation of Bushehr NPP on permanent basis during the first year of present contract is given in Appendix 6 (Table 6.1). Membership of alerted crew of experts shall be defined by the Principal in the Application Form (Appendix 2).

List of the Contractor’s permanent staff who will be engaged in works during the second, third, forth and fifth years shall be agreed upon by the Principal and the Contractor in five months before the next year of the Contract execution starts.

List of the Contractor’s specialist Job Descriptions is available in Appendix 16.

1.3. Any demand in each Contractor’s specialist involvement in TAVANA Co. activities in Tehran shall be requested by the Principal according to specified time stipulated in the Application Form (Appendix 2). Meanwhile, type and technical specification of the activity shall be defined by the Principal in the Application Form (Appendix 3).

1.4 To arrange for fast (within 7 calendar days) deputation of the Contractor’s specialist for urgent short-term (not exceeding 30 days) rendering of engineering services under conditions when the Principal considers the matter to be urgent and the above specified terms are not predictable or planned, the procedure of interaction between the Principal and the Contractor changes as follows:

The Contractor shall consider the Principal’s request and selects the candidates of specialists for the required services rendering within up to 1 week. Simultaneously with submission to the Principal of details of the specialists to be deputed, the Contractor proceeds to arrangement of Iran entry visas (time period of visa issue is 5 working days).

The Principal consider the proposals regarding the list of the performers and, in case of no reproof, shall send an official order-letter drawn up according to Appendix 3 within 3 working days.

At the same time, the reimbursement rate for urgently sent specialists increases to 1,5 (one and a half time) relatively to the rate specified in section 7.2 of the Contract.

Upon receipt of the visas and order-letter from the Principal the Contractor shall depute specialists to Iran.

Once the services rendering is over, the Contractor shall formalize the Timesheet for the Contractor’s specialist (Appendix 7), Certificate of Handover and Acceptance of works (Appendix 15.1) and Certificate of Acceptance of performed Services (Appendix 15).

1.5.The services on operation support may be rendered by the Contractor at place of subcontractors’ permanent work in RF also. The procedure of interaction between the Principal and the Contractor, if secondment of the Contractor’s specialist to IRI is not required, is as follows:

Stage 1. The Contractor shall forward an inquiry drawn up according to Appendix 3 specifying desirable work completion time.

Stage 2. The Contractor shall study the request and shall forward TCP, with involvement of subcontracting organizations (if necessary), which describes stages of the work execution, the price, responsible performers and time work completion time.

The time of TCP preparation shall be up to 2 months.

Stage 3. The Principal shall study the TCP and, if necessary, may hold additional meetings with the Contractor. Based on the results of negotiations, in case agreement is reached, the Principal shall send a request to the Contractor to prepare an Addendum to the Contract specifying the scope of works, the price and the completion time.

Stage 4. The Contractor shall prepare draft work order to the present Contract agreed with the Concern’s structural subdivisions and forward for the Principal’s consideration. The work order includes: statement of work to be completed, calendar plan, price and settlement terms and other conditions. In case of significant reproofs unavailability, the Principal shall inform the Contractor hereof. The Contractor shall sign the work order in the shortest possible time and send it to the Principal in 2 copies.

Stage 5. Upon signature of the work order to the Contract by the Principal, The Contractor shall start services rendering.

**2. Technical support for repair and maintenance**

For provision of technical support during repair and maintenance, the Contractor shall involve permanent representatives on site/Tehran and also provisionally sent specialists of Contractor and subcontracting organizations as well in accordance with the list indicated in Appendix 1 to the present Contract.

2.1. Procedure of the Contractor and the Principal interaction during provision of technical support for maintenance and repair.

Stage 1. The Principle shall send a request drawn up in accordance with Appendix 3 specifying the area of rendering services and duration of starting/finishing services.

Stage 2. The Contractor shall send a request for the specialists ‘names and reimbursement rate of rendering services addressed to the indicated enterprises, based on the Contractor’s request. The review of the issue shall take up to 2 weeks. Basing on results, the Contractor shall send the reimbursement rate and duration of detachment of the specialists to the Principal.

Stage 3. The Contractor shall examine the calculation of reimbursement rate and duration of detachment of the specialists and, in case of no reproof, shall send an official order-letter drawn up according to Appendix 2 specifying the agreed reimbursement rate. The review of the order-letter shall take up to 2 weeks.

Stage 3a. If necessary, the Contractor shall organize a meeting with representatives of the Principle and contract partners in order to agree the price of rendering services. After the price is agreed, the Contractor sends an official inquiry specifying the reimbursement rate in conformity with Appendix 2.

Stage 4a. The Contractor shall prepare draft contract with the Russian contract partner. Duration of drawing up shall take up to 2,5 months.

Stage 4b. After the contract with the Russian contract partner is concluded, the latter shall send to the Principle a package of documents required for sending specialists:

* + personal data form
  + passport copy
  + copy of education diploma including work experience.

Stage 5. The Contractor shall approach to the Consular Department of the I.R. of Iran Embassy in Russia to formalize the employment visas.

Stage 6. Once the visas are obtained, the Contractor shall inform the Principle about its readiness to send specialists.

Stage 7. The Principal shall send a consent letter about receiving specialists within the indicated period and about readiness of accommodation.

Stage 8. The Contractor shall send the specialists and inform the Contractor about their departure. The Principal shall provide meeting of the specialists at the airport and their allocation according to place of residence.

Stage 9. Once the services rendering is over, the Contractor shall formalize the Timesheet for the Contractor’s specialist (Appendix 7), Certificate of Handover and Acceptance of works (Appendix 15.1) and Certificate of Acceptance of performed Services (Appendix 15).

2.2. Interaction procedure stipulated in item 2.1 shall come into effect in 6 (six) months after the Contract entry into force (this time period is required to the Contractor for signing preliminary agreements with the subcontracting organizations, the list of which is specified in Appendix 1 to the Contract).

2.3. Should the volume of Contractor’s services on maintenance and repair support be calculated based on agreed work order, the procedure of the Contractor and the Principal interaction shall be similar to that of specified in paragraph 3 of the present Appendix (stages 3 – 7).

1. **Technical support of upgrading**

By results of Bushehr NPP operation experience or justified Contractor’s proposals, the Principal shall formulate a topic of its interest in the frame of areas contained in Appendix 5.

3.1. Procedure of the Contractor and the Principal interaction in the course of upgrading process:

Stage 1. The Principle shall address the Contractor’s permanent representative on Site/Tehran and request preliminary information on the topic: whether such works were done at Concern’s NPPs, a range of potential performers, etc.

Stage 2. The Contractor shall forward all available information on possibility of carrying out upgrading to the Principle.

Stage 3. In case of Contractor’s interest to carry out the work the Contractor shall forward an inquiry drawn up according to Appendix 3 specifying desirable work completion time.

Stage 4. The Contractor shall study the request and shall forward TCP, with involvement of subcontracting organizations (if necessary), which describes stages of the work execution, the price, responsible performers and time work completion time.

The time of TCP preparation shall be up to 2 months.

Stage 5. The Principal shall study the TCP and, if necessary, may hold additional meetings with the Contractor. Basing on the results of negotiations, in case of reaching agreement, the Principal shall send a request to the Contractor to prepare an Addendum to the Contract specifying the scope of works, the price and the completion time.

Stage 6. The Contractor shall prepare draft work order to the present Contract agreed with the Concern’s structural subdivisions and forward for the Principal’s consideration. The work order includes: statement of work to be completed, calendar plan, price and settlement terms, terms of sending specialists and other conditions, including guarantee period. In case of no significant reproofs, the Principal shall inform the Contractor hereof. The Contractor shall sign the work order as soon as possible and send it to the Principle in 2 copies.

Stage 7. Upon signing the work order to the Contract by the Principal, The Contractor shall start performance of works.

3.2. General planning of services and demand for specialists shall be realized in annual frame and agreed not later than 5 (five) months prior to the next year coming. The approved scope of works cab insignificantly corrected in a regular manner depending on actual work.

3.3. All design documentation including the aforementioned orders necessary to the Service rendering under the Contract shall be sent or made available to the Contractor by the Principal as per the Contractor’s request. The Principal shall also provide the Contractor with available design, operational and operating documents in Russian and/or English languages.

3.4. Within the period of rendering services by the specialists of the Contractor’s specialists, in accordance with the working schedule set forth in the request, the Principal has the right to shorten or extend the term of rendering services depending on the actual schedule of services performance by sending written notification of such changes to the Contractor not later than with 2 weeks anticipation.

3.5. During the period of rendering services under the working schedule set forth, the Contractor shall also carry out services following the working orders, requests or lists of questions of the Principal issued in the format agreed, sent as an official letter either by fax and e-mail.

3.6. Any notice, request, consent, agreement, approval or permission which shall be submitted by one Party to the other according to the Contract conditions shall be made in writing and certified by the signatures of representatives of the Parties.

3.7. The services rendered at BNPP Site / Tehran shall be organized by the Contractor’s Authorized Representative.

3.8. The Contractor’s specialists contractually employed at the BNPP Site /Tehran may represent the manufacturers of the equipment upon the Contractor’s decision that shall not impede the performance of their duties under the present Contact. They may also be sent to other enterprises in Iran provided the expenses associated with such business trips including transportation, meals, medical service, hotel accommodations, and daily allowances shall be paid by the Principal. These days are considered to be working days and shall be paid in running order.

**The Principal The Contractor**

# Appendix 5- The open list of potential cooperation areas

|  |  |  |
| --- | --- | --- |
|  | | |
| **No.** | **Item/Process** | **Description** |
| 1 | Reactor | The Contractor shall be periodically present during the dismantling and installation of reactor plant (including reactor pressure vessel, core barrel, core baffle, protecting tube component, upper units etc.,), provide technical guidance and give a feasible technical proposal for problems of equipment that may occur. |
| 2 | Steam generators, LPH, HPH | The Contractor shall carry out periodical technical supervision, provide instruction and give a feasible technical proposal to problems of equipment that may occur, during the maintenance and inspection of steam generator (SG) and high/low pressure heaters (HPH & LPH) etc. |
| 3 | Reactor Coolant pumps (RCP) | The Contractor during the maintenance of RCP shall take the responsibility for periodical design supervision and give feasible technical proposal to the problems that may occur during the maintenance of primary coolant pumps at BNPP site. |
| 4 | Turbine / II circuit main equipment | The Contractor shall carry out periodical technical supervision of the dismantling process, maintenance, installation and test process of HPC/LPC of turbine and maintenance process of the turbine body and other equipment (such as turning gear, bearings, turbine control system, stop valves and control valves etc.), providing technical guidance and putting forward technical proposal to all the problems that may occur during these works. |
| 5 | Generator/ Exciter and diesel generators | The Contractor shall carry out periodical technical supervision of relevant process, electric and actuation of trip of generator / exciter (drawing out rotor and pulling generator shroud), mechanical and electric testing, developing the corresponding technical proposal to the possible actual problem and making analysis in the course of malfunction existing in generator or exciter (such as the low insulation of the rotor etc.). |
| 6 | Refueling Process | The Contractor shall participate in the maintenance inspection and test of the refueling machine; shall instruct operators on technical aspects of the refueling machine operation prior to its operation; shall carry out periodical technical supervision and technical operators on the operation on the loading and unloading of the fuel; shall offer technical proposals to mechanical, electrical and I&C problems of the refueling machine and shall participate in solving problems, analysis of the conducted technical service and putting forward suggestion on maintenance and preservation, technical modification and preparation of the list of spare parts etc. for the refueling machine. |
| 7 | Fuel Management | Providing assistance in comparison of parameters related to reactor core designs with measured values and giving necessary recommendations, analysis of operation regimes from viewpoint of meeting of safety limits and conditions, calculation of reactor main parameters during physical tests and increase of power, prediction of reactor parameters changes in comparison to normal operation. Recommendations for improvement of monitoring of condition of spent FAs during storage in SFP, for application of additional equipment for cleaning of SFP, reactor from sediments. |
| 8 | BNPP Special systems (CPS-EE, ESFIP, MCDS, TPTS, TLS-U, IOPRS) | The Contractor shall carry out periodical technical supervision, provide instruction and give the feasible technical proposal to problems of equipment that may occur, during the operation and maintenance of CPS-EE, ESFIP, MCDS, TPTS, TLS-U, IOPRS etc. |
| 9 | Large sized Electric Motor | The Contractor shall give guidance on the high voltage electrical motors, such as primary circulation pump, feedwater pumps and circulation pump etc, developing the corresponding technical proposal to actual problems that may be encountered on site during the operation and outage of BNPP. |
| 10 | Polar crane | The Contractor shall give guidance on the polar crane, developing the corresponding technical proposal to actual problems that may be encountered on site during the operation and maintenance of polar crane. |
| 11 | Relay Protection | The Contractor shall carry out periodical technical supervision for maintenance, calibration and defect elimination of generator-transformer group protection elements and maintenance, calibration and test activities of generator exciting regulating system, carrying out analysis in the course of malfunction may occur and putting forward technical solutions. |
| 12 | NFME system (neutron flux monitoring equipment) | The Contractor shall carry out periodical technical supervision and technical support while operation, adjustment and calibration of the neutron flux monitoring equipment during the period of the PM for BNPP and provide technical solution in the course of malfunction that may occur. |
| 13 | Automated radiation  monitoring system (ARMS) | 1. Assist in elimination of operational failures in the upper level network of ARMS,  2. Answer the corresponding questions to be asked by BNPP specialists and develop recommendations with respect to enhancement of ARMS operational reliability.  3. Assist to BNPP specialist in development of off-line database to be containing historical data. |
| 14 | Technical diagnostics system (TDS) of the primary circuit main equipments | Participation in an inspection of transmission for the signals. |
| 15 | Automated Fire Protection system (AFPS) | 1. Inspect the operation status of FP I&C system upper computer and compile inspection report.  2. Implement adaptability modification according to FP I&C system technical improvement.  3. Assist Iranian Party in lying down and verifying the scenario for FP I&C system upper level computer system backup.  4. Assist the Iranian Party in laying down a scenario for FPI & C system hardware maintenance and upgrading and fulfilling the feasibility study. |
| 16 | In-core monitoring system | Contractor shall be present periodically on site during system examination, carrying-out scheduled maintenance of upper level computer complex and low level computer complex, operation of in – core Instrumentation system and comprehensive analysis system hardware, checking for characteristics of functional devices and blocks, carrying out calibration and controlling working capacity of technical means and software, blocks of input of analogue signals, performance of procedure of fuel reload in the database of the in-core instrumentation system. The contractor shall give technical consultations and prepare well-grounded technical proposals regarding the equipment and software problems, give recommendations on prevention of faults of the equipment, functional devices and units, analogue signals input units if any arise. |
| 17 | In-service inspection (ISI) | Providing assistance in ISI of reactor vessel with SK-27.  Providing assistance in ISI of main circulation pipelines with SK-36.  Providing assistance in ISI of SG tubes with SK-016M. Providing assistance in analysis of data of reactor samples providing assistance in ISI of pipelines and joints providing assistance in analysis of corrosion and erosion of equipment and pipelines and providing recommendations and solutions. |
| 18 | Chemistry | Give technical recommendation during degradation of water treatment balance of 1, 2 circuits of BNPP, water chemistry operation analysis and technical support. Transfer of experience of application of new methods and equipment for maintaining of WC of NPP systems. |
| 19 | Vibration measurement | Providing technical support during vibration measurement of BNPP rotating equipment and give necessary technical solution and recommendations, if necessary. |
| 20 | General repairs | Providing assistance in involvement of repair's Russian head organization during planning, coordination and carrying out of BNPP routine (if necessary) and overhaul/general repairs and scheduled repairs. |
| 21 | Main Designers (such as AEP, OKB Gidropress and etc.) technical support in the course of NPP operation | Designer’s support of the design during operation and updating of Bushehr NPP.  In the course of operation:  1. Consultancy on design issues, arising in the course of NPP operation.  2. Consultancy on the design changes proposed by the BNPP Specialist.  3. Consultancy on design issue connected with the contents of operational documentation.  4. Consultancy on design issues connected with the content of hydraulic and regular tests of process systems. If needed, participation in tests and analysis of tests results.  5. Consultancy on design issues on equipment repair and upgrading works in terms of design requirements to the equipment, equipment binding systems, support structures for the equipment and layout solutions in the area of equipment disposition.  6. Consultancy on issues of provision of safe and comfortable conditions for NPP specialist work.  7. Consultancy provided in order to define the reasons for NPP systems and elements failures and development of measures for the failures reasons elimination.  8. Consultancy support in Principal cooperation with other Russian organizations.  9. Participation in consultation work on design issues on details and systems of NPP, which are to comply with the design requirements. |
| 22 | Main Designers (such as AEP, OKB Gidropress and etc.) technical support (When conducting reconstruction and modernization of elements and systems of the BNPP-1) | Providing designer's support of the design during operation and upgrading of Bushehr NPP. When conducting reconstruction and upgrading of components and systems of the BNPP:  1. Consultation services on design issues, arising in the course of modifications and reconstructions of NPP components and systems.  2. Consultation on design changes proposed by the BNPP Specialist.  3. Performance of control over the mounted structures to reveal conformance with the design documentation, by request of the BNPP Specialist.  4. Consultation on design issues at the stage of commissioning works of the reconditioned equipment or systems.  5. Participation in advisory service on design issues solution connected with design of the reactor plant.  6. Participation in advisory service on design issues of components and systems of NPP, which are to comply with the requirements stipulated in the design documentation. |
| 23 | Training of MCR specialist | Providing assistance in training of MCR specialist |
| 24 | Simulator | Providing assistance in technical support of FSS, modification of scenarios, etc. |
| 25 | Emergency preparedness | Assistance to BNPP in establishing emergency response center, assistance to BNPP in response to nuclear / radiological accident. |
| 26 | Scientific and technical exchange | Scientific and technical exchange, workshops, direct contacts with plants, technical meetings, emergency drills. |
| 27 | Spare parts | Providing assistance in development of list of necessary spare parts of BNPP, assistance in an on-time providing of BNPP with required spare and replaceable parts and standby equipment not existed at BNPP. Rendering assistance to BNPP in establishing cooperation and direct contacts with manufacturing plants of spare parts and equipment for NPP. |
| 28 | Chief Designer of RP B-446 | Provision of follow-up of BNPP operation, including issues of modification and upgrading, change (extending) of nominal power of the reactor plant by the Chief Designer of RP B-446. |

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# Appendix 6 -Duties and job description of permanent specialist of the Contractor on the Site/Tehran

# Table 6.1 Duties and job description of permanent specialist of the Contractor on the Site:

| **Sl. No.** | **Position (Grade)** | **Duties and job description** |
| --- | --- | --- |
| 1 | Manager/Director of Representation (4В) | Representation management |
| 2 | OKB Gidropress JSC Chief Technologist of reactor plant design (5В) | Engineering and technical support during operation (including maintenance and repair), upgrading and modification of reactor plant. Expert in equipment. |
| 3 | OKB Gidropress JSC Chief Technologist of reactor plant design (5В) | Engineering and technical support during operation, upgrading and modification of reactor plant. Expert in operation modes. |
| 4 | Atomenergoproyekt JSC Chief Technologist of the NPP design (5В) | Technical support for the NPP designer during operation, upgrading and modification of the nuclear plant. |
| 5 | Nuclear fuel and reactor physics Chief Technologist (5В) | Assistance in reconciliation of parameters relating to the calculations of the reactor core configuration with the measured values and giving necessary recommendations. Analysis of operation modes from the point of view of correspondence of safety margins to the conditions of safe operation, calculation of the main reactor parameters during physical tests and power increase, prediction of reactor parameters changing if compared with normal operation. Recommendations on improving control of spent FA condition during storage in the cooling pool, on utilization of additional equipment for cleaning the pool and the reactor vessel from sediments. |
| 6 | Power Machines JSC Chief Technologist (5В) | Technical support during operation (including maintenance and repair), turbine generator upgrading |
| 7 | Power Machines JSC Chief Technologist of generator (5В) | Technical support during operation (including maintenance and repair), generator upgrading |
| 8 | CKBM JSC Chief Technologist of RCP (5В) | Technical support during operation (including maintenance and repair), RCP upgrading |
| 9 | OKBM Afrikantov JSC Chief Technologist of integrating equipment (5В) | Recommendations on high voltage electric motors, (feedwater pumps, circulation pump, etc.), development of technical proposals on current problems which may occur during operation on Bushehr-1 NPP site. |
| 10 | Reactor Service systems and equipment operation modes Chief Technologist (5В) | Transfer of experience in reactor service equipment operation, including recommendations and consultation on development of operational documentation, including symptoms-based emergency operating instructions (SBEOI) and severe accident management guidelines  Assistance for BNNP-1 in establishment of emergency response centre, actions in nuclear/radiation accidents. |
| 11 | Turbine service systems and equipment operation modes Chief Technologist (5В) | Experience transfer regarding turbine service equipment operation, including recommendations and consultation on development of operational documentation, including SBEOI) and severe accident management guidelines |
| 12 | Electrical equipment Chief Technologist (5В) | Periodical technical supervision of maintenance, checking and remedy of defects of generator-transformer unit protection elements, analysis of eventual malfunctions, proposal of technical solution |
| 13 | APCS Chief Technologist (5В) | Periodical technical supervision of maintenance, development of technical proposals on problems that may occur to the equipment during operation of CPS-EE, ESFIP, MCDS, diagnostics systems, NMS, TPTS, TLS-U, IOPRS, etc. |
| 14 | SIRM Chief Technologist (5В) | Presence on site during inspection of the system, carrying out scheduled maintenance of upper and lower level computer complexes. Comparative analysis of SIRM hardware during operation of the system, checking of parameters of functional devices and units, checking and control of operability of hardware and software, analogue signals input units, performing the fuel reloading procedure in SIRM database. Carrying out technical consultations and development of technical proposals in the case of problems with equipment and software, giving recommendations on prevention of eventual failures of equipment, functional devices and units, analogue signals input units. |
| 15 | Water Chemistry Systems Engineer (5В) | Analysis of water chemistry balance and technical support of performing water chemistry balance and operation of the reactor water cleanup system and secondary purification system at BNPP-1. Experience transfer regarding application of advanced methodology and equipment for water chemistry balance of NPP systems. Development of technical recommendations in the case of water chemistry degradation. |
| 16 | Transportation and technological facilities Chief Technologist (5В) | Participation in preventive inspections and testing of refueling machine. Briefing of operators on technical aspects of refueling machine operation before its operation. Development of technical proposals when revealing problems regarding mechanical and electrical equipment, instrumentation and participation in the problems solution. Analyze the performed maintenance and make proposals on maintenance and preservation, technical modifications and drawing up of a list of spare parts for the refueling machine, etc.  Giving recommendations regarding polar crane, development of technical proposals on current problems which may occur on site during operation and maintenance of polar crane. |
| 17 | ARMS Chief Technologist (5В) | Assistance in elimination of operational failures in ARMS circuit of upper level.  Responses to corresponding questions asked by BNPP-1 specialists and making recommendations regarding ARMS operational reliability improvement.  Assistance to BNPP specialists in development of off-line database backup which shall archive accumulated data. |

# Table 6.2 Duties and job description of specialists of the Contractor in Tehran:

| **Sl. No.** | **Area of the work** | **Duties and job description** | **Man-Month for Five Years** |
| --- | --- | --- | --- |
| 1 | Reactor plant design | Rendering the engineering services and assistance/ consultation of the Iranian experts in the following but not limited areas:   * Development of the Thermal Hydraulic modeling of the BNPP-1 for safety analysis. * Analysis the accident condition during the abnormal events at BNPP and elaborate the recommendations to the NPP operators * Verification and validation of the computer codes * Analysis of the suggestions of the NPP operator regarding modernization of equipment of the reactor plant, optimization of the operating modes and justification by means of computational analysis and experimental investigation. * Analysis of the NPP operation on defect, failures and malfunction and providing recommendation on elimination * Development the mathematical modeling of the reactor equipment * Development of the technical document for NPP operation * Deterministic safety analyses to support PSA * Validation and verification of EOPs and plant simulator * Best estimate analyses for equipment qualification * Periodic safety review (PSR) of BNPP-1 * Supporting safety analyses during design change/modification of operational systems and components. * Strength analysis of systems/structural and equipment with considering ageing effects (material embrittlement, fatigue, corrosion, erosion, …) * Thermal stratification transient analysis for suspected systems of BNPP-1 * Rendering suggestions/recommendations and corrective actions to improve the performance of systems and components. | 60 |
| 2 | General design of the plant | Rendering the engineering services and assistance/ consultation of the Iranian experts in the following but not limited areas:   * Development of the living PSA for BNPP-1 * Improvement of environmental monitoring system * Nuclear wastes management and radiation protection * Development of operational documentation (severe accident management guidelines and emergency operating procedure). * Investigation of the causes of failures (root cause analysis) in the equipment operation. * Life Management /extension of the NPP equipment. * Verification of the analysis performed by the principle for upgrading the system and equipment * Development/establish of an efficient aging management system for BNPP-1 * Development of an efficient surveillance and equipment qualification program. * Rendering suggestions/recommendations and corrective actions to improve the performance of the systems and components. * Developing the configuration management for BNPP-1 * Assessment of system/equipment condition, residual life prediction and trending analysis. * Review, assessment and validation of the analysis made by the Principle. * Engineering services for development/improvement of the following programs/activities for the BNPP-1:   *- Maintenance program*  *- In service inspection*  *- Operator procedures*  *- System/equipment surveillance program*  *- Ageing management program-* | 120 |
| 3 | Nuclear fuel and reactor physics | Rendering consultation services and/or Assistance the Iranian experts on the following but not limited areas:  **3.1 In-Core Fuel Management and Reactor Physics**   * Periodic analysis of the physical operational data at steady state and transient conditions; * Neutron physics calculation in order to evaluation of performance of the In-Core monitoring systems(ICIS, NFME, …); * Annual fuel management calculation including burn-up and optimized core pattern analysis; * Neutron physics calculation in order to analysis of the transient and emergency modes and during physical start-up tests as well; * Development and updating of the documents related to short/long term fuel management such as nuclear design report, safety justification report, album of neutron-physical characteristics of the reactor and…; * Investigation on subjects like possibility of increasing of fuel burn-up, using new materials, modifications and power up-rating of the reactor core.   1. **Fuel Engineering Services** * Investigation on cause of fuel damages occurred during operation campaign; * Providing the required engineering services on using new fuel types such as safety and economic justification, selection of the specific type of new fuel and …; * Providing the required engineering services on issues related to spent fuel such as updating of documents and instructions of transportation and storage in fuel pond and…;   Providing the required engineering services on issues related to probable changes on fuel pond and its related systems such as cooling system, refueling machine and …; | 30  30 |
| 4 | Engineering services | Rendering the engineering services and assistance/ consultation of the Iranian experts in the following but not limited areas:   * Conditioning monitoring and performance analysis * Investigation of the causes of failures (root cause analysis) * Ageing assessment and residual life prediction * Supporting technical analysis during design change/improvement * Improvement/optimization of operational instructions and procedures * Review, assessment and validation of the analysis made by the Principle | 30 |
| 5 | RCP and related systems | Rendering the engineering services and assistance/ consultation of the Iranian experts  regarding the RCP and related systems and main components as well as transferring information and experiences :   * Root cause investigation and analysis of failures and providing the corrective solutions or actions * Time limited ageing analysis * Improvement/modernization of systems and components * Residual life time prediction and assessment * Strength analysis of RCP and related components during unanticipated operational conditions (stress, fatigue, vibration, seismic, …) * Improvement/optimization of operational instructions and procedures * Review, assessment and validation of the analysis made by the Principle. | 30 |
| 6 | Rotary Equipment | Rendering the engineering services and assistance/ consultation of the Iranian experts regarding the high voltage electric motors, (feedwater pumps, circulation pump, etc.), and related systems and main components as well as transferring information and experiences :   * Root cause investigation and analysis of failures or problems and providing the corrective solutions or actions * Improvement/modernization of related systems and components * Ageing degradation and residual life prediction assessment * Strength analysis during unanticipated operational conditions (stress, fatigue, vibration, seismic, …) * Improvement/optimization of operational instructions and procedures * Review, assessment and validation of the analysis made by the Principle | 30 |
| 7 | Turbine service systems and equipment | Rendering the engineering services and assistance/ consultation of the Iranian experts  regarding the turbine system and related main components as well as transferring technical information and experiences:   * Conditioning monitoring and performance analysis * Investigation of the causes of failures (root cause analysis) * Ageing assessment and residual life prediction * Supporting technical analysis during design change/improvement and modernization * Improvement/optimization of operational instructions and procedures * Review, assessment and validation of the analysis made by the Principle. | 30 |
| 8 | APCS | Rendering the engineering services and assistance/ consultation of the Iranian experts in the following but not limited areas regarding the I&C systems such as CPS-EE, ESFIP, MCDS, diagnostics systems, NMS, TPTS, TLS-U, IOPRS, etc. as well as transferring technical information and experiences:   * Root cause investigation and analysis of failures or problems and providing the corrective solutions or actions * Supporting technical analysis during design change/improvement or modernization of the related systems | 30 |
| 9 | Water Chemistry Systems | Rendering the engineering services and assistance/ consultation of the Iranian experts in the following but not limited areas  regarding the water chemistry systems as well as transferring technical information and experiences:   * Root cause investigation and analysis of failures or problems and providing the corrective solutions or actions * Analysis of water chemistry balance and technical support of performing water chemistry balance and operation of the reactor water cleanup system and secondary purification system at BNPP-1. * Supporting technical analysis during design change/improvement or modernization of the related systems * Ageing degradation assessment * Improvement/optimization of operational instructions and procedures * Review, assessment and validation of the analysis made by the Principle | 30 |

# Appendix 7- Format of the Timesheet

**for the Contractor’s specialist for "\_\_\_\_\_\_"\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 20\_\_\_\_\_**

|  |  |
| --- | --- |
| The Principal | NPPD |
| The Contractor | REA |
| Project | Bushehr Nuclear Power Plant, Unit 1 (Iran) |
| Type of works | Performance of works, required for safety operation of BNPP-1 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Name** | **Position** | | **\_\_\_\_\_\_\_\_\_ 20\_\_\_\_** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | **Number of Hours** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** | **21** | **22** | **23** | **24** | **25** | **26** | **27** | **28** | **29** | **30** |
| **grade 4** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  |  | | В | В | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | 176,00 |
|  |  |  | | В | В | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 |  |  |  |  |  |  |  | 132,00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total for month, man-hour | | | | | | | | | | | 308 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total for month, man- months | | | | | | | | | | | 1,75 |
| **grade 5** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|  |  |  | | В | В | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | 176,00 |
|  |  |  | | В | В | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | В | В | 9 | 9 | 9 | 9 | 8 | 176,00 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total per month, man-hour | | | | | | | | | | | 352 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | Total per month, man- months | | | | | | | | | | | 2,00 |

**Legend in time sheet:**

**Р** - working days in IRI, **В** - days off in IRI, **П** - holidays in IRI, **Б** - Sick note, **К** - being on mission, **О** – leave.

Amount of man\*months shall be determined by method of dividing total amount of man-hours per month as per the Timesheet to the standard amount of hours in this specific month in compliance with the working time schedule.

**Authorized representative of the Principal Authorized representative of the Contractor**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**“\_\_\_\_\_”\_\_\_\_\_\_\_\_\_\_\_\_\_ 20 \_\_\_\_ “\_\_\_\_\_”\_\_\_\_\_\_\_\_\_\_\_\_\_ 20 \_\_\_\_**

# Appendix 8- Contractor’s Monthly Report Format on rendering of services

| **No.** | **Description of the Contractor‘s specialist services** | **List of works in the framework of rendering of services, for which information on performance shall be provided for the reporting period** |
| --- | --- | --- |
| 1 | General information. Performance of all functions and duties in the framework of approved job descriptions of the specialist | 1. Total number of the Contractor’s specialist, involved in rendering of services, shall be specified |
| 2. In case of any comments the list of comments to the Contractor’s specialist shall be included |
| 2 | The reactor installation General Designer’s (OKB Gidropress JSC) author’s supervision | The reactor installation engineering and technical support during operation (including maintenance and repair), upgrading and modification |
| 3 | Artichect-Engineer’s (Atomenergoproyekt JSC) author’s supervision | Technical support during operation, upgrading and modification of the nuclear plant |
| 4 | Power Machines JSC author’s supervision | Technical support during operation (including maintenance and repair), upgrading of the turbine and the generator |
| 5 | TSKBM JSC author’s supervision | Technical support during operation (including maintenance and repair), upgrading of the RCP |
| 6 | OKBM Afrikantov JSC author’s supervision | Recommendations on high voltage electric motors, (feedwater pumps, circulation pump, etc.), development of technical proposals on current problems which may occur during operation on Bushehr NPP site |
| 7 | Technical support of nuclear fuel operation and in the field of reactor physics | Assistance in reconciliation of parameters relating to the calculations of the reactor core configuration with the measured values and giving necessary recommendations.  Analysis of operation modes from the point of view of correspondence of safety margins to the conditions of safe operation, calculation of the main reactor parameters during physical tests and power increase, prediction of reactor parameters changing if compared with normal operation. Recommendations on improving control of spent FA condition during storage in the cooling pool, on utilization of additional equipment for cleaning the pool and the reactor vessel from sediments |
| 8 | Technical support of operation of systems and equipment of reactor, turbine services, electrical, ACPS, transportation and technological facilities | 1. Transfer of experience of operation of equipment in reactor and turbine services, recommendations and consultation on development of operating documentation among others, including SBEOI and severe accident management guidelines |
| 2. Assistance for BNNP in establishment of emergency response centre, actions in nuclear/radiation accidents |
| 3. Periodical technical supervision of maintenance, checking and remedy of defects of generator-transformer unit protection elements, analysis of eventual malfunctions, proposal of technical solutions |
| 4. Periodical technical supervision of maintenance, development of technical proposals on problems that may occur to the equipment during operation of CPS-EE, ESFIP, MCDS, diagnostics systems, NMS, TPTS, TLS-U, IOPRS, etc |
| 5. Carrying out scheduled maintenance of SIRM upper and lower levels. Comparative analysis of SIRM hardware during operation of the system, checking of parameters of functional devices and units, checking and control of operability of hardware and software, analogue signals input units, performing the fuel reloading procedure in SIRM database. Carrying out technical consultations and development of justified technical proposals in the case of problems with equipment and software, giving recommendations on prevention of eventual failures of equipment, functional devices and units, analogue signals input units |
| 6. Analysis of water chemistry balance and technical support of performing water chemistry balance and operation of the reactor water cleanup system and secondary purification system at BNPP. Experience transfer regarding application of advanced methodology and equipment for water chemistry balance of NPP systems. Development of technical recommendations in the case of water chemistry degradation |
| 7. Participation in preventive inspections and testing of refueling machine. Briefing of operators on technical aspects of refueling machine operation before its operation. Development of technical proposals when revealing problems regarding mechanical and electrical equipment, instrumentation and participation in the problems solution. Analyze the performed maintenance and make proposals on maintenance and preservation, technical modifications and drawing up of a list of spare parts for the refueling machine, etc.  Giving recommendations regarding polar crane, development of technical proposals on current problems which may occur on site during operation and maintenance of polar crane |
| 8. Assistance in elimination of operational failures in ARMS circuit of upper level.  Responses to corresponding questions asked by BNPP specialists and making recommendations regarding ARMS operational reliability improvement.  Assistance to BNPP specialists in development of off-line database backup which shall archive accumulated data |

Note: in the process of production activity the format of the Contractor’s monthly report may be changed by agreement of the Parties.

The Contractor’s representative

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Full name

**The Principal The Contractor**

# Appendix 9- Certificate on Release of Retention

We, as signed below, on behalf of the Contractor by ……….…………………….,

on behalf of the Principal by ………...……,

confirm the fulfillment of the Contractor's obligations regarding Good Performance of the Contractor's obligation under the Contract on Rendering of Engineering Services and Technical Support of Operation of the Bushehr NPP unit No. 1 at \_\_\_\_\_\_\_\_\_\_\_.

Signing of its Certificate should be the basis to draw up an invoice by REA for payment of Retention money as per Letter of Credit No. …………., which sum is due for performed Services as per the Contract.

Amount of retention: EURO…………………. (…………………….…....……Euro).

Fulfillment of the Contractor's obligations regarding Good Performance under the Contract for year 20--- has been confirmed by the representative of the Principal at the BNPP-1 site on the related performed Services.

|  |  |  |
| --- | --- | --- |
| **Representative of the Principal** |  | **Representative of the Contractor** |

# Appendix 10-Requirement of Qualification of the Contractor Specialist

|  |  |  |
| --- | --- | --- |
| **Position** | **Requirements to qualification** | **Documents, which confirm the specialist qualification** |
| Director of representation | Higher vocational education and work experience at least 3 years at NPP managerial positions | -copy of Diploma;  -statement from employment record. |
| Chief Technologist | Higher vocational (technical) education and work experience at least 5 years at positions of specialists and managerial positions at nuclear power plant | -copy of Diploma;  -statement from employment record. |

Note: The Contractor’s specialist are hired after the Principal’s consideration and approval of the documents confirming qualification.

**The Principal The Contractor**

# Appendix 11-Work Handover Schedule

The present Procedure is made for timely works handover by the Parties and for signing the documents envisaged by this Appendix.

1. Upon expiration of each reporting month, the Contractor shall draw up the work time schedule of the Principal specialist within the reporting month (time-sheet form is provided in Appendix No.7) together with Certificate of Handover and Acceptance of works (Appendix 15.1) and officially submit it to the Principal at BNPP Site for assessment and approval on the third day of the month following the reporting one.

2. The representatives of the Principal at BNPP Site shall review and approve the work time schedule of the Contractor's specialist at BNPP within the reporting month together with Certificate of Handover and Acceptance of works not later than three working days from the date of its receipt.

3. Not later than in two days from the date of the work time schedule of the Contractor’s specialist at BNPP approval by the Principal together with the Certificate of Handover and Acceptance of works, the Contractor shall submit to the Principal the report on rendered services (performed works) for the reporting month as per the form envisaged by Appendix No. 8 to the Contract.

4. The Principal has the right to submit to the Contractor comments to the report once within four working days. The Contractor shall eliminate the comments within four calendar days or provide clarifications and submit the final version of the report to the Principal.

5. After the final report version is submitted to the Principal, the latter shall not demand from the Contractor to introduce additional modifications to the report.

6. Not later than in three calendar days from the date of the Principal approving the work time schedule of the Contractor’s specialist at BNPP within the reporting month together with the Certificate of Handover and Acceptance of works, the Contractor shall submit a copy of the approved Time Sheet together with Certificate of Handover and Acceptance of works, Certificate of Acceptance performed Services (Appendix No. 15) and relevant invoice of the performed services to the Principal in Tehran (NPPD Co.). Nevertheless, the Contractor shall within shortest possible time submit the original copy of the submitted Time Sheet together with the Certificate of Handover and Acceptance of works to the Principal. The ground for submission of the Certificate of Acceptance performed Services shall be the work time schedule of the Contractor’s specialist at BNPP with the Certificate of Handover and Acceptance of works which have been approved by the Principal's representative at BNPP-1.

7. The Principal shall consider and sign the Certificate of Acceptance performed Services within seven working days from the date of its official receipt.

**The Principal The Contractor**

**Appendix 12- BNPP/Tehran Working Regulation of the Contractor’s Specialist**

The specialist of the Contractor shall work according to the work time schedule of the Principal specialist, which includes the work days, holidays and mournful days. The days off, according to the work time schedule of the Principal specialist, shall be: days off, holidays and mournful days.

Duration of a work week of the Contractor’s specialist is 44 hours.

The below is the schedule of the work week:

1. Work week – 5-days;
2. Work days – Saturday, Sunday, Monday, Tuesday, Wednesday;
3. Duration of a work day:

- 9 hours on Saturday, Sunday, Monday, Tuesday;

- 8 hours on Wednesday;

1. Days off – Thursday, Friday.

Below is the schedule of a work day:

* 1. Duration of a work day ‑ 9 hours (lunch included);
  2. Beginning of a work day – 7:30;
  3. Break for lunch – 1 hour;
  4. End of a work day – 16:30;
  5. End of a work day on Wednesday – 15:30.

Time of the work day beginning and time of the lunch break can be changed upon the preliminary notification of the Principal, providing that the total duration of the work day time – 9 hours – is retained.

Duration of a scheduled annual vacation is 30 work days.

Within the first month since the date of Contract putting into force, the Contractor shall submit the annual schedule of the Contractor’s specialist vacations to the Principal indicating the duration of the vacations in terms of calendar days. In case of necessity, the Principal has the right to transfer the scheduled vacation of the Contractors specialist to another time in accordance with IRI legislation.

Notes:

1. The Time Sheet shall be kept according to IRI legislation, however all the days including leaves and the days of absenting due to sickness or illness of the Contractor’s specialist, labor being payable to the specialist as per IRI Law shall be paid to the Contractor.

2. When IRI labor legislation change, these changes will also be spread to the specialist of the Contractor.

**The Principal The Contractor**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

# Appendix 13-Working and Living Conditions of the Contractor's Specialist

|  |  |  |
| --- | --- | --- |
| **Services** | **Principal’s obligations** | **Remarks** |
| 1. Purchasing air tickets and transfer from Emam Khomeni Airport to Morvarid residential camp. | Meeting and transfer from Emam Khomeni Airport to Mehr Abad Airport or to a residence place in Tehran | \* The specialist and their family members shall be transported from Emam Khomeini Airport to Mehrabad Airport or to a residence place in Tehran, and from Bushehr airport to BNPP camp and vice versa by bus.  \* In case of limited number of persons, they will be transported by sedan cars (Samand, Peugeot or van).  \* Trips shall be arranged with the view of minimum stay of specialist in Tehran.  \* The ticket for the family members of specialist in the said direction shall be supplied by the Principal, but the expenses shall be borne by the user. |
| Purchasing Bushehr-Tehran round trip air ticket for Contractor’s specialist approved by the Principal |
| Meeting and transfer from Bushehr Airport to Morvarid Camp |
| Accommodation in Tehran in case of services rendering in Tehran, flight delay or unforeseen circumstances |
| 2. Provision with housing. | The Principal is obliged to provide family houses and single units (subject to agreement between the Contractor and the Principal single unit may be a one room house or a room in a house).  In Tehran, the Principal is obliged to provide an apartment or a single room in a four-star hotel, or to pay the Contractor’s rental expenses borne at RF trade representation area in the amount of a single room price in a four-star hotel. | Houses shall be prepared according to the Table No.1. |
| Single specialist are settled in houses in groups (each room is intended for one person). The management of specialist settlement in houses shall be executed by the Contractor's suggestion and the Principal's approval. |
| 3. Provision with utility services inside the houses. | The Principal shall purchase the equipment for the houses in accordance with IRI laws and regulations. | The equipment needed for each type of house is specified in the Table No.2. |
| 4. Water, power, gas cylinder, internet line, telephone line and cable television | The Principal shall provide the houses with water, power, gas, telephone and internet. The Principal shall maintain and update the existing TV installations in the Russian camp. | The telephone call and internet use charges shall be paid by the users (residents). |
| 5. Medical services | The Principal makes necessary coordination with Shahed Polyclinic at Morvarid camp to provide the specialist and their family members with medical services. | The charges of supplying with medicines and relevant paramedical tests shall be borne by the user. |
| To provide better services, a Persian Russian interpreter shall be present in the Polyclinic. |
| The Principal makes the required coordination with medical centers in Bushehr and Tehran (dentistry, radiology, laboratory, etc.). |
| 6. Transition from camp to Site and vice versa, and from the residence place in Tehran and back | The transfer of the Contractor's specialist to the Site and vice versa and from the residence place in Tehran and back shall be conducted by the Principal, by the vehicles considered in this regard. | Additionally based on the Contractor’s offer and Principal’s approval sedan cars («Peugeot») shall be placed at the Contractor’s permanent representative disposal at the Principal’s expense. |

The Principal shall bear the responsibility for performing in time and with the proper quality of the services the functions envisaged by the present Appendix and related to the fulfillment of the liabilities for meeting, transferring, accommodating and housing of the Contractor’s specialist within the scope agreed upon by the Parties.

**Table №1**

Under its obligations the Principal shall prepare to the Contractor houses equipped with the following items:

|  |  |
| --- | --- |
| 1 | Water heater and fittings |
| 2 | Bathroom Shower |
| 3 | Bathroom mixer taps |
| 4 | Mirror and bulb light |
| 5 | Washbasin and relevant fittings |
| 6 | Dishwashing cabinet |
| 7 | Dishwashing cabinet fittings |
| 8 | Door lock and hinge |
| 9 | Cupboard and table |
| 10 | Kitchen extractor |
| 11 | Switch and socket |
| 12 | Door, shelf, chest of drawers |
| 13 | Venetian blind and glasses |
| 14 | Window and relevant handle |
| 15 | Room door, lock and handle |
| 16 | Light bulb |
| 17 | Fluorescent lamp installed on house |
| 18 | Toilet extractor |
| 19 | Toilet washbasin and relevant fittings |
| 20 | Toilet mirror, soap bowl, toilet brush, dust bin |
| 21 | Water closet and fittings |
| 22 | Bathroom walls condition |
| 23 | Toilet walls condition |
| 24 | Complete painting of the house |
| 26 | Big bathtub with relevant taps |
| 27 | Bathroom and toilet ceramics |

**Table №2**

List of household articles required for houses maintenance regardless of their type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Houses for families or group of specialists** | |  | **Single houses** | |
| **Household utensils** | **Specification** |  | **Household** | **Specification** |
| Air conditioner | Air conditioners available at houses shall be used after maintenance, and in case of defect, they shall be replaced by the Principal.  Split-systems shall be installed for chief managers of operation specialist upon the Contractor’s proposal and the Principal’s agreement. |  | Air conditioner | Air conditioners available at houses shall be used after maintenance, and in case of defect, they shall be replaced by the Principal.  Split-systems shall be installed for chief managers of operation specialist upon the Contractor’s proposal and the Principal’s agreement. |
|  |
| Refrigerator | Iranian type 10' |  | Refrigerator | Iranian type 10' |
|  |
| TV Set, TV table |  |  | TV Set, TV table |  |
|  |
| Bed, bed spread and pillow | Metal one, in the number of persons |  | Bed, bed spread and pillow |  |
|  |
| Microwave oven | Iranian type |  | Iron and ironing board |  |
|  |
| Electric oven |  |  | Electric oven | Two burners, table-top |
|  |
| Iron and ironing board |  |  | Washing machine | Twisting type |
|  |
| Washing machine | 5-kilo-automatic, one |  | Desk |  |
|  |
| Gas oven | Three burners, table-top |  | Desk lamp |  |
|  |
| Dining table | Four-person, one |  | Electric kettle |  |
|  |
| Computer desk |  |  | Moquette carpet |  |
|  |
| Desk lamp |  |  | Mirror |  |
|  |
| Electric kettle |  |  | Telephone set |  |
|  |
| Full-length mirror – hangers |  |  | Electric vacuum cleaner |  |
|  |
| Moquette carpet |  |  |  |  |
|  |
| Kitchenware | One set |  |  |  |
|  |
| Electric vacuum cleaner |  |  |  |  |
|  |
| Sofa and two armchairs |  |  |  |  |
|  |

# Appendix 14-Criteria for the Contractor’s specialist work evaluation

List of production omissions as well as violations when the bonus will not be charged to the wage of the specialist of the Contractor or will be charged in a less amount.

|  |  |  |  |
| --- | --- | --- | --- |
| № | **Violation** | **Quality coefficient decrease**  **%** | **Note** |
|  | Unauthorized absence from the workplace for more than 4 hours within the working day without a reasonable excuse | 100 |  |
|  | Late coming to work | Maximum 50 | Depending on the violation seriousness |
|  | Violations of labor protection regulations | Maximum 10 | Depending on the violation seriousness |
|  | Violations of fire safety requirements | Maximum 10 | Depending on the violation seriousness |
|  | Violations of nuclear power engineering rules and regulations | Maximum 10 | Depending on the violation seriousness |
|  | Violations of production and technical documentation requirements | 10 | Depending on the violation seriousness |
|  | Violations of “Technological specification of safe operation” and operating instructions requirements resulting in violation or failure against the criteria of the procedure in force | Maximum 100 | Depending on the violation seriousness |
|  | Violations of “Technological specification of safe operation” and operating instructions requirements not resulting in violation or failure against the criteria of the procedure in force | Maximum 50 | Depending on the violation seriousness |
|  | Low quality of the executed work revealed during equipment trial run or inspections performed by the supervisory bodies | Maximum 20 | Depending on the violation seriousness |
|  | Frustrations of the deadlines specified in the work performance schedules, protocols and measures | Maximum 10 | Depending on the violation seriousness |
|  | Violation of rules of behavior and residence by the Contractor specialist in IRI | Maximum 15 | Depending on the violation seriousness |

**The Principal The Contractor**

# Appendix 15-Certificate of Performed Services

**Certificate № ……**

We, as signed below, on behalf of the Contractor by ………………………..……….,   
on behalf of the Principal by …………………………, confirm the obligations regarding performance of the Contractor's Services in \_\_\_\_\_\_\_, (month) 20\_ \_for rendering of Engineering Services of the Bushehr NPP unit No. 1.

Signing of this Certificate should be the basis to draw up an invoice by REA for a payment as per Letter of Credit No. \_\_\_\_\_\_\_\_\_\_\_\_\_, which sum is due for performed Services as per the Contract.

Basic price of performed Services: EURO……………… (………………………………..Euro)

Net amount: EURO……………………………. (……………………………….…....……Euro)

Fulfillment of the Contractor’s obligations under the Contract for (month) \_\_\_\_ 20\_\_\_ has been approved by the representative of the Principal at the BNPP based on the related performed Services.

**The Principal The Contractor**

# Appendix 15.1-Form of Certificate of Handover and Acceptance of Works

**CERTIFICATE No.\_\_\_**

We, the undersigned, the Principal in the person of\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, acting based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, on the one part, and the Contractor, in the person of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, acting based on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_on the other part, have drawn up the present Certificate confirming, that the Contractor’s obligations under the Contract for rendering the Engineering Services and Technical Support of BNPP-1 operation for \_\_\_\_\_\_\_\_\_\_\_200\_\_ were fulfilled. Amount of man/months is \_\_\_\_. The price of performed works (rendered services) as per the Certificate amounts to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/100) EURO, not to be imposed by VAT.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Contractor’s expert grade | Reimbursement rate, EURO | Amount of man-months | Price of performed works (rendered services), EURO |
| 1 | 4 |  |  |  |
| 2 | 5 |  |  |  |
|  | Total |  |  |  |

Retained payment deduction - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_EURO

(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) EURO, 00 cents

Due for payment taking into regard the retained payment deduction - \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_EURO

(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) EURO, \_\_cents

Fulfillment of the Contractor’s obligations under the Contract for rendering the engineering services and technical support of BNPP-1 operation for \_\_\_\_\_\_\_\_\_\_\_200\_\_ is confirmed by the Work Time Schedule of the Contractor’s specialist for \_\_\_\_\_\_\_\_\_\_\_200\_\_\_.

**The Principal The Contractor**

# Appendix 16-List of the Contractor’s specialist Job Descriptions

|  |  |
| --- | --- |
|  | Manager/Director of Representation |
|  | OKB Gidropress JSC Chief Technologist of reactor plant design |
|  | Atomenergoproyekt JSC Chief Technologist of the NPP design |
|  | Nuclear fuel and reactor physics Chief Technologist |
|  | Power Machines JSC Chief Technologist |
|  | Power Machines JSC Chief Technologist of generator |
|  | CKBM JSC Chief Technologist of RCP |
|  | OKBM Afrikantov JSC Chief Technologist of integrating equipment |
|  | Reactor Service systems and equipment operation modes Chief Technologist |
|  | Turbine service systems and equipment operation modes Chief Technologist |
|  | Electrical equipment Chief Technologist |
|  | APCS Chief Technologist |
|  | SIRM Chief Technologist |
|  | Water Chemistry Systems Engineer |
|  | Transportation and technological facilities Chief Technologist |
|  | ARMS Chief Technologist |

Note; it is need to be completed.

# Appendix 17-Reimbursement rate

**Appendix 17.1**

|  |  |  |
| --- | --- | --- |
|  | **Reimbursement rate for grade 4"В"** | **Month (EURO)** |
|  | Reimbursement rate for the year 2014 | 38 327 |
|  | Reimbursement rate for the year 2015 (5,1%) | 40 281 |
|  | Reimbursement rate for the year 2016 (4,7%) | 42 174 |
|  | Reimbursement rate for the year 2017 (4,4%) | 44 029 |
|  | Reimbursement rate for the year 2018 (4,1%) | 45 835 |

**Appendix 17.2**

|  |  |  |
| --- | --- | --- |
|  | **Reimbursement rate for grade 5"В"** | **Month (EURO)** |
|  | Reimbursement rate for the year 2014 | 31 868 |
|  | Reimbursement rate for the year 2015 (5,1%) | 33 493 |
|  | Reimbursement rate for the year 2016 (4,7%) | 35 067 |
|  | Reimbursement rate for the year 2017 (4,4%) | 36 610 |
|  | Reimbursement rate for the year 2018 (4,1%) | 38 111 |

# Appendix 18- List of products envisaged by the norms of Protective and supplementary diet

**LUNCH:**

|  |  |
| --- | --- |
| **Course:** | **Dessert** |
| Chicken barbecue | Salad, yogurt, fruit, dates |
| Kebab | Salad, Churned sour milk, lime, fruit, dates |
| Kebab | Salad, Churned sour milk, lime, fruit, dates |
| Special Kebab | Salad, «Delster» drink, lime, fruit, dates |
| Cooked rice and fried hen | Yogurt, olive, salad, fruit, dates |
| Dill, rice and fish | Pickles, limes, fruit, dates |
| Meat and vegetable stew minced | Salad, yogurt, fruit, dates |
| Meat stew and potato | Salad, yogurt, fruit, dates |
| Lentil, rice and meat | Salad, yogurt, fruit, dates |
| Cabbage, rice and meat | Salad, yogurt, fruit, dates |
| Spanish rice | Salad, yogurt, fruit, dates |
| Macaroni | Salad, yogurt, fruit, dates |

**DINNER:**

|  |  |
| --- | --- |
| **Course:** | **Dessert** |
| Cabbage, rice | Yogurt, olives |
| Spanish rice | Yogurt, soup |
| Macaroni | Yogurt |
| Minced meat stew and potato | Yogurt |
| Egg plant stew | Yogurt |
| Cutlet | Yogurt, ketchup |
| Barbecue of chicken with bone attached | Yogurt, soup |
| Barbecue hen | Yogurt |
| Kebab | Churned sour milk, limes |

**BREAKFAST:**

|  |
| --- |
| **Course:** |
| Butter and jam |
| Egg or milk |
| Cheese, tomato, cucumber |
| Butter, honey, cheese |
| Cheese & biscuit |
| Cheese |