Belgrade, 19/01/2017

**CONTRACTING AUTHORITY’S CLARIFICATIONS No. 3**

**"NOx emission reduction at the TPP Nikola Tesla Unit A4"**

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| **No.** | **Question** | **Answer** |
|  | Q: Referring to the tender dossier, Volume 3 – Employer’s requirements, point 3.1, it could happen, that List of parameters given in the Table 1, because of wide range of coal quality, cannot be achieved with five mills in operation for boiler capacity of 650t/h. Please confirm that for boiler capacity of 650t/h optionally four mills could be used. | Values indicated under Table 1, Volume 3 shall be achieved during operation with FIVE mills. |
|  | In Volume 1, Section 1, point 12.1.1.1. it is foreseen that “The evidence must include successful experience as the prime contractor in construction of at least one (1) project of the similar nature and complexity comparable to the works, concerned by the tender during the last eight (8) years”.Q: Since the works executed in reference job should be "of the similar nature and complexity comparable to the works", does it mean experience on execution of the DeNOx project with primary measures? | The Contracting Authority cannot give a prior opinion on the assessment of the tender, as stated under section 5.3.4. of PRAG. The Evaluation Committee will analyse the applications in detail against the published selection criteria. |
|  | In Volume 5, point 3.1 – table 1, as well as in point 11.3, the coal range for performance test of boiler efficiency is given by section 11 by 6370÷8200 kJ/kg. Please confirm this range of lower heating value. | The End Recipient shall for the defined guarantee tests secure the coal whose low heating value ranges between 6370 and 8200 KJ/kg. (See Clarifications No.2 answer No. 93) |
|  | In Volume 3 - Employer’s requirements, point 11.3. - Conditions for proving performance values, it is indicated that “The tolerances regarding the calculation of boiler losses, given by this standard, will not be taken into consideration and the achieved value of the boiler efficiency should be presented as exact value without any corrections.”According Employer's Requirement the tolerances regarding calculation of boiler losses will be not taken into account. We assume that uncertainties of measurements will be considered due to the fact of inaccuracy of measurement equipment. Please confirm. | Please refer to answer no.16. |
|  | In Volume 3, point 3.1 it is foreseen that “Contractor shall guarantee the achievement of the following parameter values, in two operating modes of the unit: nominal steam flow of 940 t/h and at steam flow of 650 t/h”Q: Is six mill operation allowed for 960 t/h steam production? Please clarify. | See NOTE 1, point *3.1 Performance values which shall be fulfilled by the Contractor*.The above NOTE 1 indicates that all parameters listed in Table 1 shall be achieved during operation with 5 mills.  |
|  | Q: We are referring to Volume 3, chapter 4.2, mill grinding capacity in table 3. According our knowledge, the mills are designed and are operating with a maximum capacity of 98t/h. If by future tests maximum throughput of current milling system is lower than 105t/h, we assume that requested lower limit of coal range as basis for performance values will be adapted accordingly for 5-mills operation. Please confirm. | Contracting Authority considers that the question is not clear and precise enough. Contracting Authority cannot provide adequate answer for this question. However, the tender has to be fully in compliance with specific requirements defined within the Employer’s Requirements and all of the provisions of the Tender dossier. |
|  | Q: Regarding dates for project execution in Volume 3, point 1.3 and Volume 1, Annex 2, there are discrepancies of given dates for Completion of Works. See Volume 3, chapter 1.3, page 4 and Volume 1 Annex 2 page 7. Both dates do not fit to date of contract signature and 300 days for Time for Completion. Please clarify. | Please refer to Clarifications No.2 answer No.27. |
|  | Q: Regarding Volume 2, Section 3, sub-clause 2.5 of the Particular condition, please specify type of costs which are part of compensation, e.g. manpower, consumables, lignite. | In line with point 2.5 PCC ER, Employer retains the right to compensation of costs and damages without prior specification of the latter. |
|  | In Volume 2, Section 3, sub-clause 4.19 of Particular conditions it is stated “The End Recipient shall provide electricity and technical water free of charge”.Q: What is the definition of technical water? Is potable water excluded?Is fuel (lignite) free of charge for contractor during Contract execution? Please clarify. | Technical water: personal hygiene water.Potable water is excluded.During TEST A and TEST B and possibly during commissioning and other tests defined by the Tender Documentation, coal is free of charge.  |
|  | Q: Regarding Volume 2, Section 3, Particular conditions sub-clause 4.25- Existing Services, it is our understanding that solving damages under 4.25 of PC are not a precondition for issuing of TOC. Please confirm. | Please read last sentence of second paragraph of Clause 4.25 of Particular condition of Contracts “He shall make good any such damage at his own expense and to the complete satisfaction of the Engineer within the Time for Completion.” |
|  | Q: Referring to Volume 2, Section 3, Particular conditions sub-clause 5.2 Contractor’s documents, please specify what type of software can be used for drawings etc. | The Contracting Authority does not impose any particular software for drawings editing. |
|  | With reference to Delays Caused by Authorities in sub clause 8.5 of the General Conditions of the contract and Particular conditions, no cost compensation, only time extension in case of delay is foreseen. Q: Please specify regular approval periods for diverse permits required since it must be considered in time schedule. | Please read Clause 8.5 of Particular and General condition of Contracts. Clause 8.5 concerns all delays Caused by Authorities, and not only approval period for obtaining permits. Regular approval periods for different permits is defined in each particular Serbian regulation concerning subject matter. |
|  | Q: Referring to Volume 2, Section 3, Particular conditions, sub-clause 9.1, we have not found any statement as regard to exact duration of trial run (beside Info in ER 11.1 General TOC). Please clarify. | End Recipient gave the period of 60 days in which this trial run must be undertaken, alongside with other activities foreseen. Please refer to Employer`s Requirements (Section 1.3; 10.1; 10.2.1.1.3; 10.2.1.2.3 and 11.1) |
|  | Q: We assume that in case of a consortium between a foreign and a Serbian company disputes shall be settled under ICC Rules. | In case of disputes between the Employer and the Contractor being consortium/joint venture consisting of entity/entities established in Serbia and entity/entities established in different eligible country/countries, disputes will be settled in line with ICC rules.Procedure in case of eventual disputes within consortium/joint venture is not subject of this contract.  |
|  | Q: With reference to article 63 of General conditions and Volume 2, Section 3, Particular conditions, article 20, we assume that in case of a consortium between a foreign and a Serbian company disputes shall be settled under ICC Rules. Please confirm. | Please refer to answer No.14. |
|  | Q: Calculation and boiler efficiency during the Test on Completion are defined and will be performed in line with standard EN 12952-15. In Tender, it is stated that tolerances regarding boiler losses given by this standard and also, as we understood, tolerances for:• Low Heating Value• Feed water temperature• Atmospheric air temperature• Cold reheat steam temperaturewill not be used. Usage of these tolerances is common practice in EU countries. Please explain the reason. | The End Recipient accepts tolerances defined by the standard - EN 12952-15 related to:* Feed water temperature
* Atmospheric air temperature.

Other tolerances are not acceptable. |
|  | Q: With reference to the Works Contract Notice, point 22, as we understood the new works defined as “Repetition of similar works” cannot be the works which scope is defined by the Contract. The Contractor cannot use the estimated amount of 2,5 M € in order to fulfill Contract requirements. Please clarify/confirm. | Please refer to Clarifications No.2 answer No.44. |
|  | Q: According Paragraph 22 of the Works Contract Notice, we understand that “new works consisting in the repetition of similar works”, in conformity with the same basic project, can be entrusted to the initial contractor from the current tender procedure only for another boiler/unit, not Unit A4 because Unit A4 needs only one system for NOx reduction. Please clarify/confirm. | Please refer to Clarifications No.2 answer No.44. |
|  | In Volume 1, Section 4, Form 4.6.10 in point 1.1.7. it is foreseen to provide details about person who is in organization responsible for the management of health and safety and in point 1.7.2 details about responsible person for site health and safety on this project.Q: If the company is engaging specialized company for health and safety management in the organization as well as for the projects, is it sufficient to submit in above mentioned form information about that company and person within it responsible for managing H&S in our organization, and is it necessary in that case, to have it in the list of subcontractors? Note: value of service provided by H&S company would be lower than 10% of offer value. | The Tenderers are required to provide data on subcontractors and the percentage of works to be subcontracted (Form 4.6.3.2), only for those subcontracts that are larger than 10% of the Contract Price. |
|  | Q: Regarding Financial Identification form in Volume 1, Section 4 - Should, the form be filed and signed by all banks keeping the accounts of our company or just by bank/banks which will be included in this project execution?- For companies from Serbia should this form be filled with information about RSD and EUR account? | The Purpose of particular form is to identify financial institution and corresponding account of the account holder on which payments will be transferred to the Contractor. Hence, it is sufficient to identify one financial institution/one corresponding account. Please pay due attention on requirements imposed by the Financial Identification Form itself.  |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 1.3, Page 5: Pre-commissioning, cold and hot commissioning shall be organised and performed by Contractor itself. Trial operation and optimization shall be organised and performed by the End Recipient, while the Contractor shall take participation in that process. Official question / statement to the client: The Customer operates the unit during trial run. The Consortium is preparing procedures, instructions, time schedules etc. for optimisation and trial run. For this reason the organization of the procedure has to be done in close cooperation with the client. Please confirm. | We confirm this. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 3.1/4.1, Page 12. Official question / statement to the client: LCV of design coal in tender does not correspond to LCV calculated with given elementary analysis in tender (deviation: approx. 8%). Please clarify. | The End Recipient has under the Tender Dossier, Volume 3, Section 4.1 provided available official coal data |
|  | 3d4u\_techspec\_en.doc, Chapter 7.1.1, Page 17: Period of certain amendments of calculations and designs, based on the submitted objections by the expert control of the End Recipient shall not be longer than 7 days after the reception of such comments. Official question / statement to the client: Periods of amendments shall be dependent of the depth of such amendments / changes. As the period is a maximum period, the consortium asks for 14 days. Please clarify. | We confirm 7 days, as indicated under Volume 3, point 7.1.1, page 17.Please refer to Clarifications No.2 answer No.29. |
|  | Doc. 3d4u\_techspec\_en\_doc, Chapter 10.2.1.4.2, Page 36: I&C – All measurement-regulation equipment shall be delivered and installed by the Contractor. Official question / statement to the client: Any unforeseen works which are not caused by the consortium are not in the scope of the consortium. Please clarify. | All works related to measurement-regulation equipment installation, regardless of whether they were foreseen or not, shall be covered by the offered price of this item. |
|  | Chapter 10.2.2, Page 39, System I&C equipment: Contractor shall perform basic checks (cold commissioning= of measuring devices and actuators installed, and issue a Protocol on installation and setup for each device. Official question / statement to the client: The cold commissioning procedure contains the basic check of all NEW installed measurements and actuators by the consortium. Please confirm. | We confirm this. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.1; page 41/46, System Testing methods – Quality, obligations: Test „B“ consists of: Testinf Nox and CO emissions (by individual measurements at the boiler outlet, three sets of 2h measurements) at the boiler capacity of 940t/th (with the measurement of steam parameters from Table 1 chapter 3 of Technical guarantee) using reference measurement methods (Off. Gazette of the Republic of Serbia no. 6/2016 Annx VI). Official question / statement to the client: Please confirm that the Test B consists of the above mentioned points. | Volume 3, point 11. “*Test on Completion and Test after Completion”*, defines all conditions, scopes and methods, as well as all necessary details of the tests in question. |
|  | 3d4u\_techspec\_en.doc, Chapter 11.1, Page 41, System Testing methods – Quality, obligations: All necessary tests are the responsibility of the Contractor and he bears expenses of it. Official question / statement to the client: All necessary tests regarding the Low NOx optimization scope (Burner-, OFA-, PF-duct – settings) are the responsibility of the consortium. The verification tests for the boundary conditions, if required, are in the scope of the end recipient. Please confirm. | The term "boundary conditions" is unclear. |
|  | 8. Doc. 3d4u\_techspec\_en.doc, Chapter 11.1, Page 41, System Testing methods – quality, obligations: All control loops of the plant are put into operation, and must work automatically with such accuracy that the parameters can be maintained in a stable operational mode, and that there are no trip criteria (instructions for unit operational run, defined in End Recipient internal documentation) for components, assemblies, sub-systems or the entire plant. Official question / statement to the client: Instructions for unit operational run, defined in End Recipient internal documentation must be made available to th consortium prior to commissioning phase. There could be restrictions defined in internal documentation which could lead to massive time problems for the project. Furthermore trip criteria will kept as it is in the existing plant. If necessary the consortium will advise to extend or adapt accordingly. A stable operation will not be affected. Please confirm. | Internal documents will be made available to the selected tenderer “prior to commissioning phase”.“Trip criteria”: Accepted. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.1, Page 41, System Testing methods – Quality, obligations: The Contractor is obliged to guarantee that the plant, after implementation of the entire project, will achieve required operating parameters (Performance values) specified in section 3 of this part of tender documentation. Official question / statement to the client: Please provide evidence/relevant measurements 3rd Party report which proofs that boiler parameter listed in table 1 and table 3 (ch.3.1 and 4.2 of Volume 3) related to boiler efficiency, false air, mill capacity, mill grinding quality and capacity are sam or better prior commencement of the project. | The End Recipient is planning regular internal testing of the boiler immediately before unit shutdown for overhaul, to verify the “general state” of the boiler plant and its individual parts prior to the major unit overhaul. Considering the dates of planned tests, End Recipient will be able to make the investigation results available to the selected bidder once the investigations have been completed, if deemed necessary. The said investigation results (values of individual parameters investigated) may be used by the bidder only for information purposes, not as designing inputs. The values obtained during investigations will have no impact on the guaranteed values of parameters from Volume 3 Table 1 (point 3.1 “Performance value which shall be fulfilled by the Contractor”). |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.2, Page 41, System Testing methods – Quality, obligations: All the costs of the testing, as well as the costs of any, additional or repeated tests, caused by failure to meet certain performance values, are the responsibility of the Contractor and he shall bear the expenses for it. Official question / statement to the client: Consortium does only bear the costs for repeated tests and required repairs if the repetition and / or the damage is caused by the consortium. Consortium is not liable for loss of profit, personal costs, consumables (fuel, electricity) etc. Please confirm. | In the event of repeated test, the Consortium shall not be responsible for the loss of profit of End Recipient (caused by additional stoppage of Unit due to repetition of tests) and consumables (fuel and electricity) provided free of charge by the End Recipient.In the event of the repeated test, “Personal Cost” are under obligation of the Consortium. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.2 a), Page 42, System Conditions for providing performance values, Commenter TR/AS: The tolerances regarding the calculation of boiler losses, given by this standard, will not be taken into consideration and the achieved value of the boiler efficiency should be presented as exact value without any corrections. Official question / statement to the client: Calculations will be done according to EN 12952-15 which includes also tolerances regarding the calculation of boiler losses. | Please refer to answer No.16. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.2 a), Page 42, System Conditions for proving performance values: The guarantee value of boiler efficiency must be achieved under following conditions: 1. The boiler plant leakage - λ (false air), not less than 20%. Official question / statement to the client: The boiler plant leakage of >20% is a theoretical value which is only used for boiler efficiency calculation. Boiler false air is ≤ 20% according to "4.2 Operating parameters. | Please refer to Clarifications No.2 answer No.25. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.4.1. P3, Page 45, System Test A: Testing of one mill selected by the End Recipient. Official question / statement to the client: Consortium needs mill measurements of a 3rd Party prior to the installation of the LowNOx system. There has to be a basis for comparison to see possible effects on the same mill due to the LowNOx installation. Therefor we ask for mill measurement test, which should be defined during project execution phase. | Volume 3, point *3.1 „Performance values which shall be fulfilled by the Contractor“*, the Contractor shall prove the minimum mill capacity of 90 t/h. No additional mill parameters have to be proven by the Contractor. The value of the parameter in question from the guarantee tests of Unit A4 mills can be made available to the selected tenderer upon request. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 11.4.1, Page 45, System Test A: For successful proving of maximum guaranteed emissions of NOx and CO (Regulation on limit emissions values of polluting substances into the air, Off. Gazette of the Republic of Serbia no. 6/2016, Annex VI) it is required that in all three tests, both in the capacity of the boiler of 940t/h and at 650 t/h, the values measured by using reference measurement methods (Off. Gazette of the Republic of Serbia no. 5/2016, Annex I) are below to the values defined by contract (ER point 3.1, table 1), 200 mg/Nm (NOx) and 250 mg/Nm (CO) (mass content in volume unit for dry flue gas at a temperature of T=273.15K, pressure p=101.3kPa and volume content of oxygen 6%). Official question / statement to the client: If pre-conditions according to specification and consortium offer are given, the consortium has to proof the guarantee values otherwise correction curves will apply to achieve guaranteed values. | Application conditions and method of correction curves are defined under Volume 3, point 11.3. „*Conditions for proving performance values“*. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 7.1.3.1. P3, Page 23, System PF-duct. Official question / statement to the client: Please confirm that the existing PF-duct is in a proper condition and can be used without negative impact on stable boiler operation. Its future operation must not jeopardize the stable operation of the boiler unit. If not: Project boundaries relating PF ducts are mill flanges at 6.5m. Does that mean that the complete PF ducts have to be replaced with new ones? Please clarify? | PC (PF) ducts are exposed to abrasion during operation and their state will be determined during defect identification, i.e. once Unit A4 has been stopped for overhaul.If PC (PF) ducts are not part of the proposed design solution of the Bidder (see Volume 3 point 7.1.3.1. “Deliverables“, sub-point III), the existing PC ducts can be retained. However, damaged segments of the said ducts will be replaced by End Recipient, as part of the regular overhaul activities. |
|  | Doc. 3d4u\_techspec\_en.doc, Chapter 8.5, Page25, System QA/QC: Documentation of the tests performed: type of documents that must accompany each phase of the production of certain parts, will be defined by the agreed The Quality Assurance System and will be in accordance with the EU and national standards and regulations. Relevant documents shall be an integral part of transport documents of the parts and must be delivered to the Employer in the original and 2 copies. Official question / statement to the client: Generally we agree on this point. But the complete documentation will not be available during the delivery period. It will be submitted after the complete delivery confirmation. Please confirm. | Documentation should be delivered in line with Volume 3, chapter 8.5, page 25. |
|  | Doc. d4u\_techspec\_en.doc, Chapter 10.2.2., Page 39, System I&C: Works on DCS side: implementation of control algorithms, set point formation, devices setting etc. shall be performed by the End Recipient, Based on data given from the Contractor. Official question / statement to the client: Please can you describe more in detail format (template) of data which shall be given to End Recipient and also procedure for proving of implemented data in existing DCS. | In the Employer's Requirements, Paragraph 7.1.1.5 (pages 18, 19) are details of Contractor’s design, First 4 points in detail give description what End Recipient expects from Contractor in order to be in position to do implementation into DCS algorithms. Preferred form is in block diagrams and in the form of the function block diagrams., followed with necessary tables containing data of devices, data of process values or similar. End Recipient also expect proposal for MMI screens related to new design and changes in the field. All these design data should be submitted to End recipient before commissioning phase.After changes in DCS, Contractor shall do validation (proving). Procedure shall be established during Project implementation. |
|  | Doc. d4u\_techspec\_en.doc, Chapter 11.1, Page 41, System Test: Since boiler firing control and low NOx process has influence to Unit behaviour, Contractor shall take active presence and do system optimization of set points, control algorithms, control loop tuning of LNOx system during hot commissioning and optimization trial run. *Official question / statement to the client*: Please can you describe in detail procedure of system optimization which has to be done by Contractor, considering previous question and all implementation in DCS by End Recipient. | After algorithms implementation and during commissioning and optimization phase of the Project, it is expected that Contractor check implemented control logic, monitor process and give needed corrections (algorithms, set values, ratios, etc.) to End recipient stuff. Contractor will be allowed to have access to process with MMI, take diagrams, reports, print outs, on-line values etc. Practice in TPP is that operation of the plant are managed by operator staff, and changes in DCS system are to be done by TPP’s staff.It is common to have regular daily meeting on this subject during optimization phase. Responsibility for achieving designed emission values is up to Contractor, and not up to DCS implementation. |