

Our Ref.: TE-EEDE-3560/19-C

**TO:
NPP KOZLODUY EAD
Bulgaria**

**From
TECNATOM**

PROPOSAL

according call for market consultation № 41101

Regarding: **“Re-qualification of safety related valves for Units 5 and 6 of Kozloduy NPP EAD for severe environmental conditions (LOCA, HELB) during the extended period of operation”**

DEAR SIRs,

After analyzing the information provided by you in connection with the above market consultation, we would like to present you our assessment and the expert **indicative budget proposal** for the implementation of the service, which is: **989,230.00 EUR, no VAT included**

1. The re-qualification of safety related valves for Units 5 and 6 of Kozloduy involves the following number of samples:

Unit	In rooms under environmental conditions HELB	In rooms under environmental conditions LOCA	Total for one Unit
Unit 5	93	187	280
Unit 6	88	191	279
Total number of components (Unit 5 + Unit 6)	181	378	559

To provide this indicative proposal we have taken into consideration **all your requirements** and the detailed scope of this service:

Re-qualification of safety related valves for Units 5 and 6 of Kozloduy NPP EAD for severe environmental conditions (LOCA, HELB) during the extended period of operation	
Position № from Terms of Reference	Description
2.1.	Elaboration of a list of input data required for the re-qualification
2.2.	Assessment of the designed safety function of the component and the applicable regulatory requirements, codes and standards, design grounds and documentation
2.3.	Analysis of the available data under the above items and elaboration of a final list of valves in the scope
2.4.	Grouping of the valves depending on similarity (material, producer, aging mechanism) according to the list of the previous item and selection of a standard samples. The selection of standard samples should be made in a manner allowing application of the results of their inspection on the whole valve group
2.5.	Identification of the respective degradation mechanisms and aging effects of the electrical drives of the valves by: <ul style="list-style-type: none"> • <i>Assessment of the properties of the materials as well as some other production conditions that affect the operation and the aging;</i> • <i>Assessment of the operation history and technical maintenance;</i> • <i>Assessment of the stressors that impact the components (including loadings on the component and conditions of the environment inside and outside the component);</i> • <i>Assessment of the inspection and supervision results;</i> • <i>Assessment of the internal and external operation experience, including the elaborations under IGALL project.</i>
2.6.	Elaboration of measures for valve aging control

Re-qualification of safety related valves for Units 5 and 6 of Kozloduy NPP EAD for severe environmental conditions (LOCA, HELB) during the extended period of operation	
Position № from Terms of Reference	Description
2.7.	Assessment of the obsolence of the valves by determination whether the producers continues production of the replacement equipment and spare parts.
2.8.	Determination of the current technical condition of the electricity driving of the valve standard samples
2.9.	Elaboration of methodology (work program) for execution of re-qualification of the selected valve standard samples taking into account the method for application of conservatism towards the operation condition. The method consists of comparison between the actual stressors and environmental conditions (temperature and radiation condition), which the equipment really sustain during the operation and which are taken into account with the re-qualification. This comparison with the actual operational values could lead to a re-assessment of the qualification resource (decreasing of the excessive conservatism of the required values comparing with the actual values)
2.10.	Execution of re-qualification of the selected valve standard simples
2.11.	Analysis of the re-qualification results. The analysis should include a proposal and justification of the term for extension of the valves operation as well as a list of valves that should be replaced (if any)
2.12.	Elaboration of a programme/schedule for in time replacement of the non-qualified equipment
2.13.	Elaboration of a final report

A very roughly breakdown of the estimated indicative budget, would be as follows:

Pos. **2.1; 2.2; 2.3. and 2.4** bring around **10 %** of the above mentioned price or **98,923.00 EUR;**

Pos. **2.5; 2.6; 2.7; 2.8 and 2.9** bring around **40 %** of the above mentioned price or **393,292.00 EUR;**

Pos. **2.10; 2.11; 2.12 and 2.13** bring around **50 %** of the above mentioned price or **491,615.00 EUR;**

The abovementioned values are **not binding** and **will be specified in detail when a public procurement procedure with identical scope of work is announced.**

2. Other terms

2.1. **Time limit for performance of the service** – 18 months, according to the specified requirements.

3. Correspondence coordinates:

- 3.1. **Address:** Av. Montes de Oca 1, San Sebastián de los Reyes (Madrid)
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We hope that our indicative budget proposal is of interest to you.

For any questions, do not hesitate to contact us for clarification.

We remain at your disposal,

Sincerely yours,

June, 7, 2019

Spain, San Sebastián de los Reyes



Заличено на основание чл. 2 от ЗЗЛД

Javier Alonso
Vice President, Inspection and Testing Services
Tecnatom S.A.