

TECHNICAL PART OF DOCUMENTATION

LOT 56: NDT INSPECTION ORDER

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1 TECHNICAL DESCRIPTION OF SERVICES

For the purposes of the 2025 overhaul service TEŠ requires the providers of NDT inspections as well as a supervising body to carry out periodical inspections of the pressure equipment. Companies participating at the call for tenders must have sufficient number of in-house personnel to carry out the NDT inspections as well as a sufficient number of in-house personnel to carry out periodic inspections of pressure equipment. In addition, they shall have a lot of experience in performing works on boilers and in using the state-of-the-art boiler materials.

The subject of the ordered services is the performance of different types of inspections, such as:

- NDT inspections of welds and basic materials;
- Visual inspection;
- Inspection of stored materials to be installed or what is known as positive material identification (PMI); measurements carried out at the plant;
- Pressure tests and tightness inspections;
- Inspection of pressure equipment;
- Supervision of the performance of works;
- On-site tests of welders before the work commences (supervision during the on-site tests and inspection of the welds once the tests are completed).

1.1 Prerequisites

Tenderers must be certified under the EN ISO/IEC 17025 standard for:

- Radiographic examination of welded joints under EN ISO 17636-1;
- Magnetic examination of welded joints under EN ISO 17638;
- Penetrant testing of welded joints under EN ISO 3452-1;
- Ultrasound examination of welded joints under EN ISO 17640;
- Visual examination of welded joints under EN ISO 17637.

Tenderers must be certified under the EN ISO 17020 standard for

- Periodic inspections of pressure equipment.

Tenderers must be qualified for the performance of the PAUT procedure with the qualification being obtained in line with the requirements of VGB-R 516 ENIQ and EN ISO 13588.

Supporting documents demonstrating the fulfilment of the above requirements must be attached to the tender.

2 TECHNICAL REQUIREMENTS

2.1 Requirements for equipment

Tenderers must have the following NDT equipment:

- at least two (2) Se-75 radiation sources and one Ir-192 radiation source. One (1) Se-75 radiation source with activity of at least 1.0 TBq at all times and one Ir-192 radiation source of activity of at least 1.0 TBq at all times.
- At least one (1) x-ray radiation source with activity of at least up to 200 kV.
- A mobile unit (laboratory) for the processing and interpretation of radiographic images on the site.
- If the volume of the services to be provided significantly deviates from the order, the tenderer shall be capable to set up a radiographic laboratory at the plant.
- At least one (1) mobile steel hardness tester to measure the material hardness using the Vickers HV10 scale (UCI or equivalent).
- Calibration test blocks to test hardness of steel of the following categories: T24, P91 and 10CrMo9-10.
- At least one (1) PMI (positive material identification) tester.
- At least one (1) videoscope of 7 m in length and up to 8 mm in diameter and one (1) videoscope of 25 m in length and up to 30 mm in diameter.
- At least one metal thickness gauge with an option of printing out the measurements.

Supporting documents and certificates of the possession and calibration of the above-listed equipment must be attached to the tender.

2.2 Requirements for personnel

- The tenderer must have at least fifteen (15) level 1 examiners for radiographic examination certified under EN ISO 9712, and at least ten (10) of them must be level 2 examiners.
- The tenderer must have at least five (5) examiners for ultrasound examination.
- The tenderer must have at least fifteen (15) examiners for penetrant testing and magnetic-particle inspection, certified under EN ISO 9712 for level 2 at least.
- The tenderer must have at least one (1) level 3 examiner certified under EN ISO 9712 for each of the above-listed NDT methods.
- Personnel for RT examination must meet the prerequisites for work with radiation sources (qualification for work with radiation sources issued by the certified authority; inclusion in personal dosimetry programme...).
- The tenderer must have at least one (1) x-ray radiation source with activity of at least up to 200 kV.
- The tenderer must have at least two (2) Se-75 radiation sources and one Ir-192 radiation source. The activity of Se-75 radiation source must be at least 1.0 TBq at all times and that of the Ir-192 radiation source must be of at least 1.0 TBq at all times.
- The tenderer must have at least one (1) videoscope of 7 m in length and up to 8 mm in diameter and one (1) videoscope of 25 m in length and up to 30 mm in diameter.

- The tenderer shall provide a coordinator who shall communicate with the Employer and the maintenance provider and shall coordinate the work of NDT inspection provider.
- The tenderer must have a sufficient number of qualified personnel to be able to provide a 24-hour NDT inspection.
- The tenderer shall have at least two (2) European welding engineers.

The list of personnel and equipment as well as supporting documents and certificates for the above-listed requirements must be attached to the tender.

2.3 Means of proof

The Employer requires from the tenderer to attach to their tender the following means of proof and documents:

- Accreditation documents and appendices thereto as well as a certificate of qualification for the performance of the PAUT method;
- A valid radiation permit for the performance of industrial radiography in the Republic of Slovenia;
- Permits for the use of radiation sources in the Republic of Slovenia which also demonstrate the ownership of Se-75, Ir-192 and x-ray radiation sources;
- Certificate of source activity for the Se-75 radiation source demonstrating that the activity of at least one radiation source exceeds 1.0 TBq;
- Certificate of source activity for the Ir-192 radiation source demonstrating that the activity of at least one radiation source exceeds 1.0 TBq;
- Details of the vehicle – the mobile unit (laboratory) for the processing and interpretation of radiographic images on the site;
- A list of equipment with basic technical characteristics and calibration certificates;
- A list of personnel with the following certificates attached:
 - Copies of the required certificates under EN ISO 9712,
 - Certificates of qualification for work with radiation sources issued by the certified authority,
 - A list of individuals included in the personal dosimetry programme,
 - M1 forms for all workers for whom they submitted the qualification certificates.

3 REFERENCES

The tenderer must be able to submit at least the following references for the last ten (10) years:

- one (1) reference for the radiographic examination of steam pipelines of boilers with heat output over 30 MW;
- one (1) reference for the radiographic examination of steam super heaters, piping assemblies, pipe collectors and similar pipes for boilers with heat output over 30 MW,

- one (1) hardness testing reference for P91 or P92 or T24 or equivalent materials,
- one (1) reference for NDT examinations on parts of steam turbines, high-pressure valves, pumps and similar equipment at power plants of heat output over 30 MW,
- at least one (1) reference for the examination using the PAUT method for thickness under 6 mm.

4 OBLIGATIONS OF THE EMPLOYER

To ensure the proper performance of examinations, the Employer undertakes to:

- install, adjust and uninstall work platforms (scaffolds);
- uninstall and install heat insulation at places where the NDT examinations are to take place;
- provide electricity;
- make available the space required to set up the mobile radiographic laboratory.

5 OBLIGATIONS OF THE TENDERER

To ensure the proper performance of examinations, the tenderer undertakes to:

- have, throughout the duration of the overhaul, sufficient number of experts qualified to provide the agreed NDT inspections;
- increase the number of experts accordingly provided the volume of the required NDT inspections increases;
- use adequate personal protective equipment;
- use their own equipment required for the performance of NDT inspections;
- perform NDT inspections in an economically efficient manner and within the shortest possible time;
- provide all documentation required to access the Employer's premises, in a timely manner.
- see that their workers will comply with the safety at work measures, fire protection and environmental protection measures under applicable legislation of the Republic of Slovenia and rules of TEŠ.
- perform the ordered periodic inspections and tests of pressure equipment, and to prepare and submit to the Employer the documentation required for the obtaining of operating permit for the pressure equipment subject to inspection;
- to submit to the Employer a record of performed inspections and expert opinion, if so requested, after each provided service.

6 HEALTH AND SAFETY AT WORK

- Before commencing with the performance of the ordered NDT inspections, the tenderer shall obtain an adequate work order and work permit issued by the Employer.

- Before commencing the radiographic inspection, the tenderer shall be obliged to inform thereof the control room of the facility where the inspection is to be performed.
- The tenderer may start with the NDT testing only after having received a notification from the Employer's shift manager that the site is empty and that they may start with the testing.
- The tenderer is responsible for setting up the safety barrier and warning signs for the controlled area and is obliged to verify once again, before the commencement of work, that other workers are not present within the dangerous area.
- The tenderer shall be obliged to actively supervise the area at all times and to immediately stop the exposure if necessary.
- When they are done, the tenderer must inform the control room they have completed the radiographic inspection.
- The tenderer shall be obliged to obtain all documents required to access the premises of TEŠ for all their workers who will participate in the performance of NDT inspection, with such documents being valid throughout the term of the contract.

7 PRICES OF THE PROVIDED SERVICES

The tenderer shall state in their tender the anticipated total price of ordered services as well as the price of individual services, listed hereinafter:

	Service description	Unit	Estimated number of units	Price per unit	Anticipated price of estimated number of units
1)	RT examination (2 examiners)	On-site visit of up to 4 hours	5	Visit	
2)	RT examination (2 examiners)	On-site visit of up to 8 hours	13	Visit	
3)	RT examination (2 examiners)	On-site visit of up to 12 hours	14	Visit	
4)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, preparedness of welders (1 examiner)	On-site visit of up to 4 hours	13	Visit	
5)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, discharge of welders (1 examiner)	On-site visit of up to 8 hours	34	Visit	
6)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, discharge of welders (1 examiner)	On-site visit of up to 12 hours	34	Visit	
7)	RT examination (2 examiners)	On-site visit of up to 4 hours, outside regular working hours	2	Visit	

8)	RT examination (2 examiners)	On-site visit of up to 8 hours, outside regular working hours	3	Visit	
9)	RT examination (2 examiners)	On-site visit of up to 12 hours, outside regular working hours	2	Visit	
10)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, discharge of welders (1 examiner)	On-site visit of up to 4 hours, outside regular working hours	5	Visit	
11)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, preparedness of welders (1 examiner)	On-site visit of up to 8 hours, outside regular working hours	10	Visit	
12)	VT, HT, PT, MT, LT, PMI, pressure test, supervision, preparedness of welders (1 examiner)	On-site visit of up to 12 hours, outside regular working hours	10	Visit	
13)	External boiler examination	Visit	4	Visit	
14)	External and internal boiler examination	Visit	4	Visit	
15)	External and internal boiler examination and hardness test or equivalent method	Visit	2	Visit	
16)	External pipeline examination	Visit	4	Visit	
17)	External and internal pipeline examination	Visit	6	Visit	
18)	External and internal pipeline examination and hardness test or equivalent method	Visit	2	Visit	
19)	Drawing up a brief expert opinion	Pcs	12	Pcs	
20)	Drawing up an elaborated expert opinion	Pcs	8	Pcs	
	Total				

The quantities for individual items in the price list are estimates only given on the basis of past periods and may change depending on the actual requirements.

Statement of grounds:

Service 1) is estimated to 20 units and service 7) is estimated to 10 units. Depending on the actual requirements, it can happen for service 1) to only account for 10 units with service 7) accounting for 20, 30...units, or more. It may also happen for a certain service not to be provided at all with other services exceeding the anticipated volume by much.

8 TIMETABLE

The overhaul service is anticipated for 2025.

The Employer reserves the right to postpone, change or extend the deadline for the provision of services under the relevant lot on account of circumstances attributable to the Employer and in the event the date scheduled for the overhaul service has been changed.