**1. General.**

Eddy Current (EC) testing of Public Company ORLEN Lietuva (hereinafter – OL) heat exchanger tube bundle tubes in 2027 turnaround (TA). In order to ensure the determination of corrosion and other damages of internal and external surfaces of tubes for the prevention of unscheduled shutdown of units as well as to determine the remaining operation life of tube bundles, it is necessary to perform Eddy Current (EC) testing of tubes.

**2. Attachments.**

2.1. List of tube bundles and scope subject to EC testing (Appendix 1).

**3. Description and specifics of work.**

**3.1. Work description.**

3.1.1. Eddy current (EC) testing of tubes of heat exchangers.

3.1.2. Development and submission of final report to the Owner within 1 business week after completion of the work.

**3.2. Special requirements (if any).**

3.2.1. Provide information on methods for identification of internal and external defects for tube surfaces from carbon (CS), low-alloy steel (SS) and twisted type tubes.

3.2.2. Equipment must be capable of identification of very small defects (e.g. needle size holes) and surface cracks in carbon (CS) and low-alloy (SS) steel.

3.2.3. Provide an example of a test report.

3.2.4. Indicate mobilization period, i.e. period from the receipt of assignment to the beginning of its execution.

3.2.5. Provide the number of EC testing crews and equipment sets that could be used at the same time.

3.2.6. Contractor shall have transport required for execution of the work.

3.2.7. The Contractor's proposal shall list subcontractors, if any.

3.2.8. Contractor is required to have all necessary personal protective equipment and before start of works fulfill all requirements prescribed by OL OHS Procedure for Contractors BDS-40.

**3.3. Requirements for work execution and documentation.**

3.3.1. Development and submission of preliminary report within 12 hrs from the completion of inspection of each heat exchanger tube bundle.

3.3.2. Marking of tubes unfit for further operation on the tubesheets of the tube bundle on both sides for straight tubes and on one tubesheet for U-tubes.

**3.4. Qualification Requirements for Contractor**

3.4.1. Performance in compliance with ISO15549 and ISO12718. It is required to have Level II and III certified EC specialists (according to EN 473 standard). Provide copies of the certificates.

3.4.2. Present a license or another document authorizing performance of the work.

3.4.3. Provide the description of equipment to be used for EC testing, indicating the minimum and maximum diameters, thickness and material types of tubes that are possible to test.

3.4.4. Equipment must be capable of identifying very small defects (e.g. needle size holes) and surface cracks in carbon steel (SS).

3.4.5. Provide a list of works performed during the last 5 years and the number of tubes tested during the last year.

3.4.6. Indicate efficiency of one crew per shift (10 working hours), i.e. number of tested SS and CS tubes.

**4. Materials, equipment, and services to be provided by the Owner.**

4.1. Preparation of tube bundles for testing.

4.2. The client may provide the possibility to lease on-site amenity facilities.

**5. Materials, equipment, and services to be provided by the Contractor.**

5.1. The Contractor shall procure all the materials, equipment, mechanisms and software required for execution of the mentioned works.

5.2. The equipment used by the Contractor shall be certified and metrologically verified.

**6. Requirements for work completion.**

6.1. Contractor shall present preliminary EC testing report and mark on the tube bundle sheet (both sides or one if tube bundle is U-type) those tubes that are not suitable for further use.

**7. Requirements for work acceptance.**

7.1. The works shall be considered completed after the Contractor submits a duly signed final report as in Item 3.1.2 above.

**8. Requirements for work schedule.**

8.1. See Appendix 1. Any potential changes in the schedule will be notified to the Contractor in advance.

**9. Other information*.***

1. Proposal shall indicate the fixed price for testing of one tube of each tube bundle and the fixed price for testing of all tubes to be tested in one tube bundle as required by the scope of work.
2. Contractor shall quote its team (all brigades) mobilization price.