

SCOPE OF WORK

Assessment of pressure equipment technical condition as well as service life determination by acoustic emission method (AE) in 2027

1. General.

Monitoring of Public Company ORLEN Lietuva pressure vessels by acoustic emission method (AE). To determine technical condition and ensure safe operation of pressure pipelines, vessels in 2027.

2. Attachments

2.1. List of vessels subject to AE in 2027 (Attachment 1).

2.2. Equipment sketches and diagrams – 14 pcs (11 pcs. pressure vessels, 3 pcs. pipelines).

3. Description and specifics of work.

3.1. Work description.

3.1.1. Familiarize with the results of previous inspections and/or maintenance and technical data file, analyze the data and conduct visual inspection of equipment, if appropriate.

3.1.2. Within two weeks after signing the contract, draw up and coordinate with the Owner the AE program for each vessel.

3.1.3. Prior to commencement of the work, agree with the Owner the places for installation of AE sensors and other places for testing and identify such on the tested equipment.

3.1.4. Perform AE, by ensuring 100% control of elements and determine the exact location of the defective zones.

3.2. Special requirements (if any).

3.2.1. During the tender, the Contractor must submit a preliminary AE testing program for each vessel.

3.2.2. The AE testing programs shall specify the frequency and the way of testing so to assure 100 % reliability of the piece of equipment.

3.2.3. AE shall be performed in accordance with EN 14584 or similar standards.

3.2.4. Contractor shall install/demount AE sensors where possible from access platforms and/or scaffolding with the exclusions of cases where steeplejacks are required (see Par. 4.1).

3.2.5. Contractor's team must have at least 3 members, at least one speaking Lithuanian or Russian.

3.2.6. The Contractor is required to have all necessary personal protective equipment and, before start of works, fulfill all requirements prescribed by ORLEN Lietuva OHS Procedure for Contractors BDS-40.

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3.2.7. For the execution of works, the Contractor shall have the required transportation means.

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

3.2.9. In the proposal, Contractor shall provide a list of the equipment used, indicating the main characteristics of the equipment.

3.2.10. Contractor must have the technical capabilities and necessary certified equipment to perform acoustic emission (AE) tests on at least seven for the devices specified in Annex 1.

3.2.11. AE test report shall be presented by Contractor in Lithuanian or English language.

3.3. Requirements for work execution and documentation.

3.3.1. Within a day after AE testing, the Contractor shall provide preliminary conclusions which indicate the locations of high AE activity and recommendations for additional non-destructive control.

3.3.2. Contractor shall present the results and final conclusions within two weeks after AE testing.

3.4. Qualification requirements for Contractor.

3.4.1. A list of analogous works performed during the last 5 years.

3.4.2. A license or another document authorizing the performance of these works.

3.4.3. The following shall be presented for the evaluation and proving of Contractor's qualification:

3.4.4. Copy of the Company Registration Certificate.

3.4.5. A list of employees that will perform the works, their qualification certificates, etc. The Contractor's personnel performing AE tests must have level 2 and 3 qualification certificates in accordance with EN ISO 9712.

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

4.1. The Owner shall open/close insulation ports, shall prepare surfaces for installation of AE sensors, erect scaffolding or install sensors with the help of steeplejacks (where works cannot be performed from scaffolding or access platforms).

4.2. Pneumatic or hydraulic tests and pressure changes during operation (if the test is performed with the unit in operation) according to the pressure change schedule specified in the AE program.

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

5.1. The Contractor shall have all materials, equipment, machinery, PSE and special safety equipment required to perform the work described herein.

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5.2. Equipment used by the Contractor must be certified, metrologically tested and comply with the European Union occupational safety requirements.

6. Requirements for work completion.

6.1 The Contractor shall dispose of all waste resulting from the AE testing.

6.2. AE testing is considered complete after the Contractor submits the final report indicating the locations of high AE activity as well as containing conclusions and recommendations.

7. Requirements for work acceptance.

7.1. AE testing is considered complete after the Contractor submits the signed final report.

8. Requirements for work schedule.

8.1. Preliminary AE testing schedule is indicated in Attachment 1. The Contractor will be informed in advance about any changes to the schedule.