

Scope of Supply “ORLEN Lietuva” Refinery PSV chattering analysis

2026.09.14

1. Description of Work - General

Public Company **ORLEN Lietuva** (hereinafter referred to as the "Buyer") operates an oil refinery and requires a comprehensive analysis of Pressure Safety Valve (PSV) installations to evaluate and prevent PSV chattering phenomena.

The Supplier shall perform a technical assessment of approximately **104 Pressure Safety Valves (PSVs)** installed within the refinery process units and utilities systems.

The objective of the study is to identify PSV installations that may be susceptible to chattering, instability, excessive vibration, or improper operation during relieving conditions and to provide recommendations for mitigation where required.

2. Confidentiality Requirements

Prior to the transfer of any technical documentation, drawings, process information, or operational data, the Supplier shall execute and return a **Non-Disclosure Agreement (NDA)** provided by the Buyer.

No project documentation, calculations, reports, or information supplied by the Buyer may be disclosed to any third party without the Buyer's written approval.

The NDA shall be fully executed before any project information is released.

3. Scope of Work - Specific Requirements

The Supplier shall perform the following activities:

3.1 Data Review

Review all available documentation provided by the Buyer, including but not limited to:

- **Attachment No.1** Process & Instrumentation Diagrams (P&IDs);
- **Attachment No. 2** PSV specifications, operating and relieving scenarios, governing relief load;
- Pipeline Isometric Drawings (where available) could be provided;
- Process design data (where available) could be provided;
- Additional process and mechanical documentation as necessary (where available) could be provided;

3.2 PSV Chattering Assessment

For each PSV included in the study, the Supplier shall:

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- Evaluate the potential for chattering during relief events;
- Assess inlet and outlet piping configurations;
- Review pressure losses in inlet and discharge systems;
- Assess dynamic stability of the PSV installation;
- Evaluate compliance with applicable industry standards and recognized engineering practices;

3.3 Recommendations

Where a risk of chattering or unstable PSV operation is identified, the Supplier shall:

- Quantify and describe the identified issue;
- Provide engineering recommendations to mitigate or eliminate chattering;
- Propose practical modifications where required, including but not limited to:
 - piping modifications;
 - sizing review;
 - alternative valve configurations;
 - other technically justified solutions.

4. Deliverables

The Supplier shall provide:

1. A PSV assessment summary for all analyzed valves;
2. A ranked list of PSVs identified as having a potential chattering risk;
3. Detailed engineering evaluation for affected PSVs;
4. Recommendations and mitigation measures;
5. Final report in electronic format (PDF and editable format).

The final report shall clearly state assumptions, methodology, analysis results, conclusions, and recommendations.

5. Performance Schedule

The Supplier shall complete the entire scope of work within **four (4) months** from the date on which all required technical documentation has been provided by the Buyer and the NDA has been fully executed.

Any anticipated delays or requests for additional information shall be communicated to the Buyer without undue delay.

6. Standards and Methodology

The Supplier shall utilize recognized industry standards, engineering practices, and applicable guidelines for PSV stability and chattering assessment.

The methodology used shall be clearly documented in the final report.

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7. Supplier Qualifications

The Supplier shall demonstrate:

- Proven experience in PSV dynamic behavior and chattering assessments;
- Experience in refinery, petrochemical, chemical, or similar process industries;
- References from comparable projects performed within the last five years.

8. Requirements for Technical Proposal

The technical proposal shall include:

- Proposed methodology;
- Project execution plan;
- List of required information and assumptions;
- Schedule for completion;
- Examples of similar completed studies and relevant experience.

9. Cost Estimation

The Supplier shall submit a fixed-price commercial proposal covering the complete scope of work described herein.

The proposal shall clearly state:

- Total price;
- Any optional services;
- Validity period of the offer.