

How to Review a Pulsation Study

This pulsation-study review course helps engineers examine third-party acoustic and mechanical-vibration reports without treating the analysis as a black box. It covers required inputs, result interpretation, recommendations and the documentation needed for pumps and compressors. This self-paced online course includes video lectures and a completion certificate with PDH credits.

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WHAT YOU'LL LEARN

Pulsation studies can result in quite elaborate and complex reports with large output data sets. To the non-specialist it may feel like you are being confronted with difficult recommendations to which you should adhere, yet it is unclear how these were concluded based on the large "black box of data" which is submitted by a pulsation specialist. You may therefore think that you need to be a subject matter expert to review pulsation reports. Whilst this is partly true, there are significant parts of these studies that you can review for yourself, even if you are not an expert.

This course demonstrates the steps a non-specialist can take to review a pulsation analysis.. It is shown which topics should be present in a pulsation report and how they relate to the conclusions and recommendations. How to evaluate the robustness of the results in the pulsation study is explained, and to illustrate how to validate these, the BOSview software suite is used. The topics in this course include how to review the chapters in the pulsation analysis report about pumps and compressors, dampers, piping geometry, pulsation levels and mechanical vibrations.

Important note: This course does not cover pulsations and vibrations fundamentals or details of how to conduct the different design analyses per API618/API674.

This course contains 4 online courses based on video content and demonstrations in BOSview. An example model is explained for each subject that is discussed.

You receive 1-year unlimited access to the course. This allows you to perform courses again, should you need to refresh your knowledge for your work projects.

SKILLS YOU'LL GAIN

- ✓ are able to perform a concise review of a pulsation study to verify that the study meets the minimum quality levels,
- ✓ understand the important aspects of a pulsation report,
- ✓ know how to utilize BOSview to review pulsation study results,
- ✓ can identify potential issues that should be reviewed by an expert,
- ✓ can ensure that the documentation of a pulsation analysis is complete, enabling an in- depth review when required.

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ABOUT THE INSTRUCTOR

Dynaflow Research Group

Dynaflow Research Group is an engineering consultancy working across piping design and analysis, flow dynamics, vibration, FRP piping, pressure equipment and specialist engineering software. Its experience includes EN and ASME design rules for piping and pressure vessels, buried piping, water hammer, pulsation, dynamic stress assessment, vibration measurement, FEA tools, BOSfluids, BOSpulse, PV Elite and NozzlePRO workflows.

WHO THIS COURSE IS FOR

- ✓ Pulsation engineers preparing or reviewing pulsation studies
- ✓ Vibration engineers reviewing compressor or pump studies
- ✓ Rotating-equipment engineers receiving third-party study results
- ✓ Package engineers procuring pumps or compressors
- ✓ Project managers responsible for pulsation-study deliverables

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COURSE CONTENT

Introduction and Scope

- Scope
- Why is a Pulsation study important?
- Understanding mechanical vibrations
- Example of reviewing mechanical vibration results

Important Aspects of Pulsation Analysis

- Pump/Compressor
- Example of reviewing a compressor
- Damper
- Example of reviewing a pulsation suppression device
- Piping geometry
- Example of reviewing piping geometry
- Pulsations
- Example of reviewing pulsation results

Summary of Required Documentation

- Pulsation aspects
- Mechanical vibration aspects
- Results

Important Aspects of Vibration Analysis

- Fatigue failures