CASE STUDY

Det Norske Veritas uses Octave Aspect Pressure Vessel to successfully complete vessel design verification

Key facts:

Company:
Det Norske Veritas

Website:
www.dnvgl.com

Industry:
Oil & Gas - Offshore

Country: Norway

Octave products used:
Aspect Pressure Vessel
(PV Elite)

Headquartered in Oslo, Norway, with a global presence, Det Norske Veritas (DNV) is an International Association of Classification Societies organization and one of the world's largest providers of risk management services to the maritime, oil, gas and energy, food and beverage, and healthcare industries. DNV has worked internationally since 1867.

Identifying goals

DNV Brazil undertook a pressure vessel design verification project for Petrobras to extract natural gas in the Santos Basin, a PMXL1 fixed platform. The project required verification according to ASME VIII Division 1 & 2 2004, addenda 2006 for all classed vessels -plus inspections for further certification involving 40 vessels with design pressures of up to 100 Kgf/cm^2.

Overcoming challenges

A main challenge of this two-year project for DNV was dealing with different types of vessels (i.e., heat exchangers, towers, separators) in a short period of time with delays from designers and manufacturers in providing equipment according to schedule.

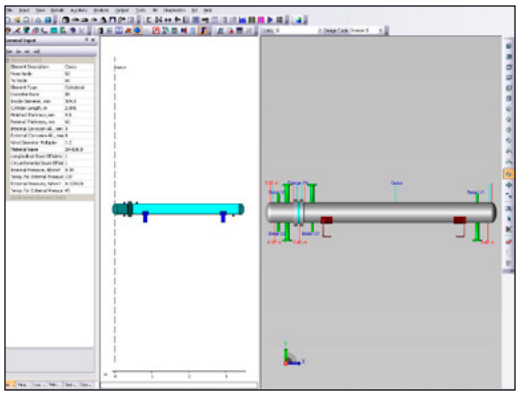
Key benefits:

- Produce models and analysis for multiple types of vessels (i.e. heat exchangers, towers, separators)
- Ensure the project and all vessels are in accordance with ASME VIII Division 1 & 2 2004, addenda 2006
- Quickly and efficiently obtain a Design Verification Report and certificate for all vessels

Realizing results

After the client provided the drawings, DNV input them in the database, created an independent model in Aspect Pressure Vessel, ran the analysis and generated an approval letter for those drawings. The manufacturer then closed the comments and issued a new revision after which DNV issued a Design Verification Report (DVR) describing all the approved drawings, references, correspondences and remarks. Next came the inspection and tests phase, with DNV surveyors using the approved drawings to check compliance with the approved project. Once completed, DNV issued a certificate, concluding the project.

Using Aspect Pressure Vessel, DNV Brazil was able to verify the vessel designs quickly and accurately, which included the approval letter and the DVR. The result was improved approval times.



"Aspect Pressure Vessel helped our project engineers develop new and important pressure vessel skills, and the quick design verification with Aspect Pressure Vessel enabled us have enough time to fix any vessel problems or deviations while it was still in manufacture's hands," Rafael Silva, Mechanical Engineer at DNV Brazil added. "This helped avoid rework in the yard."

"Aspect Pressure Vessel helped us perform faster and more accurate design verification through the input of vendor's drawings to Aspect Pressure Vessel and simulation and the elimination of the chance for errors."

Rafael Silva
Mechanical Engineer, DNV Brazil

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property, and assets– for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency, and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.