



## CASE STUDY

# NEWES achieves true international code flexibility with Octave design and analysis solutions

### Key facts:

**Company:** NEWES

**Website:**  
[www.newes.nl](http://www.newes.nl)

**Industry:** Power & Utilities

**Country:** The Netherlands

**Octave products used:**  
Forte 3DWorx (*CADWorx Plant Professional*), Aspect Pipe Stress (*CAESAR II*)

### Dutch maintenance and service provider executes a pipe design project for a power plant

NEWES is the largest maintenance and service company for the steam boiler industry in the Netherlands. NEWES (formerly NEM Energy Services/NEW Energy Services) is privately owned and focuses on developing international markets and services in the boiler industry.

### Identifying goals

The company was contracted to perform pipe design for a new power plant with three clinical boilers. The plant would be generating process steam for a chemical plant. The scope included creating a DN500 steam line from the three boilers to the pressure reducing stations that have connections with the existing steam piping systems. This also comprised safety lines to safety valves with blow out lines. In addition, NEWES was asked to create a DN350 feed water line from the boiler feed water tank to the boiler feed water pumps.

All of the systems were to be designed within the PED (European Pressure Equipment Directive) according to the Dutch laws for pressure vessels. The goal of the project was to design and install a functional power plant in accordance with the European legislation, ensuring customer satisfaction.



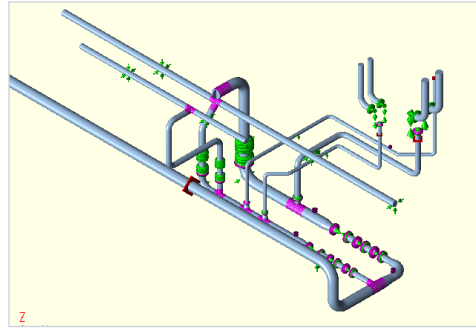
### Overcoming challenges

The three cylindrical boiler connections with low allowable forces and moments made the steam line design especially challenging. The distance between the three boilers was only seven meters and one or two of the boilers could be out of service at times. In addition, the main obstacle for successful design and implementation of feed water lines were the allowable forces and moments on the feed water pumps.

To overcome these challenges, NEWES chose to design an expansion loop between each boiler connection and the main steam line. The system would be checked according various design cases, ensuring compliance with the specified loads and accuracy of the design.

*“One of the key benefits of using (Octave’s Aspect analysis) solutions is their ability to use created 3D model also for CAD engineering. This model gives the user a global overview of designs and calculations, helping to prevent mistakes.”*

**Stefan Wesseling**  
Service Specialist,  
NEWES



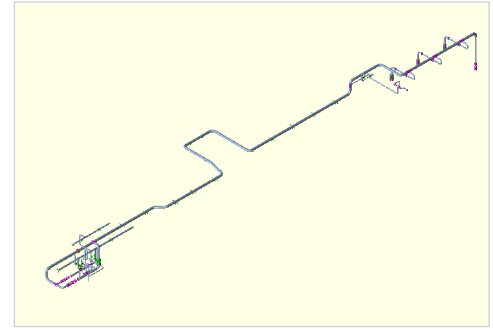
A connection from the new boiler to the existing system was desugbed with the pressure reducers and safety valves.

## Realizing results

NEWES chose to use Aspect Pipe Stress for all of the stress calculations in accordance with relevant codes, while Octave’s pressure vessel analysis solution was used for the internal pressure calculations according to ASME and EN codes. First, the piping system stresses were checked with Aspect Pipe Stress and the resulting nozzle loads for the boilers were checked according to the EN13445.

The key benefits NEWES realized by using Octave software included:

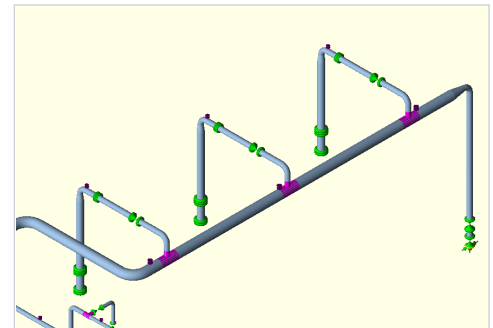
- True international code flexibility: ability to perform stress calculations in accordance with all international design codes
- Shortened project time due to efficient and accurate pipe stress and pressure vessel analysis
- Accurate and correct stress and pressure vessel analysis



An example of the three boiler connections that were included.

## Moving forward

NEWES will continue to use Octave’s pipe stress and pressure vessel analysis solutions on its upcoming projects for ensuring design safety. Stefan Wesseling, service specialist at NEWES, commented, “One of the key benefits of using (Octave’s Aspect analysis) solutions is their ability to use created 3D model also for CAD engineering. This model gives the user a global overview of designs and calculations, helping to prevent mistakes.”



An example of the three boiler connections that were included.

## 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.

©2026 Intergraph Corporation and/or its affiliates. All rights reserved.