Piping Stress Analysis and Finite Element Analysis (FEA) for Equipment Nozzles

Key Features

Technology:

Piping Stress Analysis – CAESAR II

FEA Analysis Package – Nozzle Pro

Review Software – Navisworks

Duration:

The project was completed in a week

Deliverables:

1. C2 File
2. Nozzle Pro Report
3. CAESAR Report
4. Marked up Isometric Drawings

The Client

A privately held multi-discipline engineering, procurement and construction management company with 700+ employees working worldwide. They operate in industries like petrochemical, refining, paper, power, industrial power/cogeneration, gas transmission, manufacturing and fabrication.

The Business Need

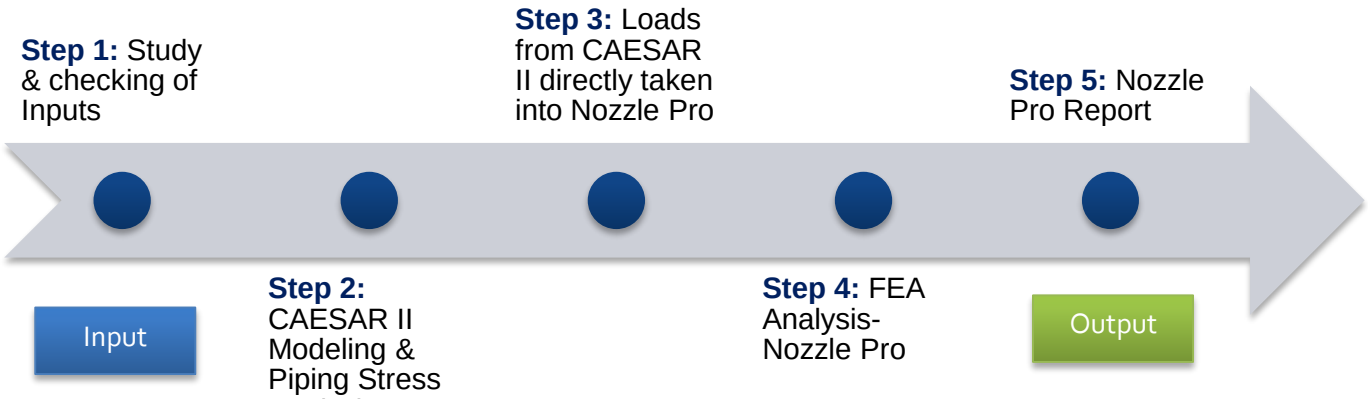
This project was to conduct piping stress analysis and Finite Element Analysis (FEA) for equipment nozzles (25 no. of nozzles).

Rishabh's Solution

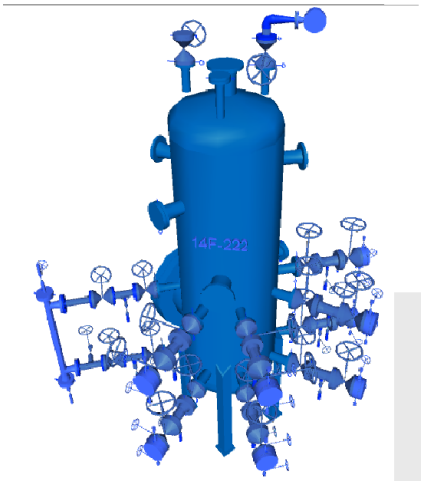
Rishabh Engineering was appointed to check and evaluate all the Process Nozzles connected to Critical Equipment's (Knock Out Drum, Absorber Overhead Drum, Absorber Separator & Stripper Tower) using Finite Element Analysis method on Nozzle Pro.

Piping Stress Analysis was conducted to analyze the piping loads, and then used the resulting loads in the Nozzle Pro to carry out Finite Element Analysis for the nozzles.

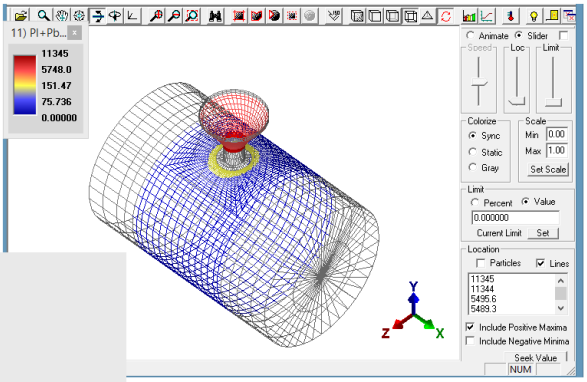
We successfully completed Piping Stress Analysis & FEA by using ASME B31.3, ASME Section VIII Div. 2 Codes and completed the project in a week with a team of 3 members (including a team leader).



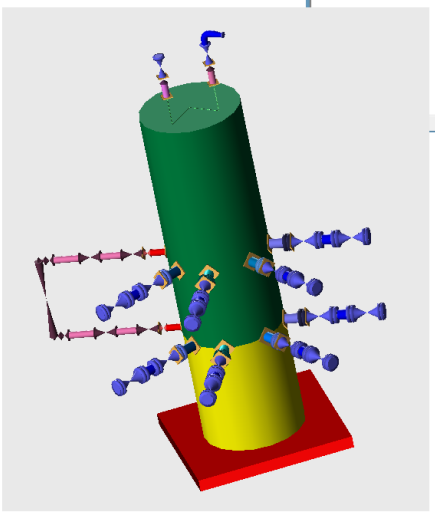
Process Flow Chart – Piping Stress Analysis & Finite Element Analysis



Navisworks Review Model



FEA Analysis of nozzles on Nozzle Pro



CAESAR II Modeling & Piping Stress Analysis

Piping Stress Analysis & Finite Element Analysis

Technology Used

- Piping Stress Analysis – CAESAR II
- FEA Analysis package – Nozzle Pro
- Review Software – Navisworks

Key Deliverables

Piping Stress Analysis with Finite Element Analysis including:

- .C2 File
- Nozzle Pro Report
- CAESAR Report
- Marked up Isometric Drawings

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About Rishabh Engineering

Rishabh Engineering provides multidisciplinary engineering support services to EPC companies in industries like Oil and Gas, Petrochemical, Power and Water treatment. Our parent company, Rishabh Software is a CMMI level-3, ISO9001 and ISO27001 company that provides services in Software Development, Business Process Outsourcing (BPO) and Engineering Services Outsourcing (ESO) to clients globally. Rishabh has offices in USA, UK and India with their main delivery center in Vadodara, India.