

## Piping Stress & Structural Analysis Calculation for Metering Skids

### Key Features

#### Technology:

Intergraph CAESAR II

Autodesk AutoCAD 2017

STAAD Pro v8i

#### Duration:

The project was completed in 2 months

#### Deliverables:

1. Pipe Stress Calculation Report
2. Structural Stress Calculation Report
3. Stress Isometrics
4. Stress Analysis Report
5. Foundation Loads
6. Anchor Bolt Location Diagram
7. Sizing Calculations
8. Lifting Calculations
9. Structural Mark-Up
10. Transport Analysis

### The Client

Netherlands based specialized engineering contractor for design, construction and commissioning of field-proven innovative solutions for Custody Transfer Flow Measurement in the global Oil & Gas Industry. They majorly focused on Offshore Metering Systems, Pipeline Metering Systems and Metering Control Systems.

### The Business Need

The client required Rishabh Engineering to perform static piping stress analysis for thermal and seismic cases & structural stress calculations for 2 metering skids (Oil Skid and Gas Skid).

### Rishabh's Solution

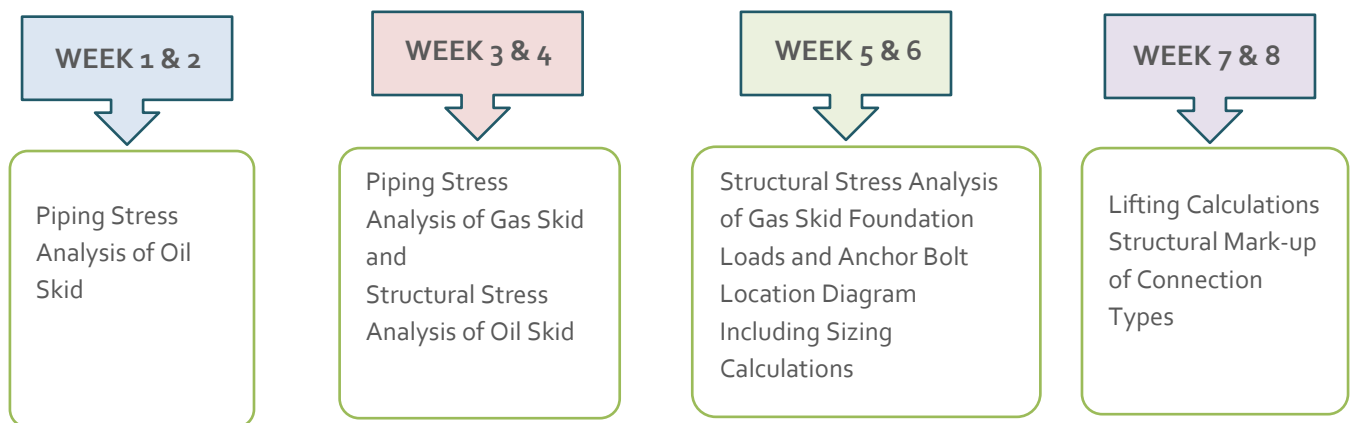
Rishabh Engineering was appointed to carry out Piping and Structural Stress Calculations for 2 Metering Skids along with stress isometrics, lifting calculations for each skid and mark-up of structural calculation with connection types.

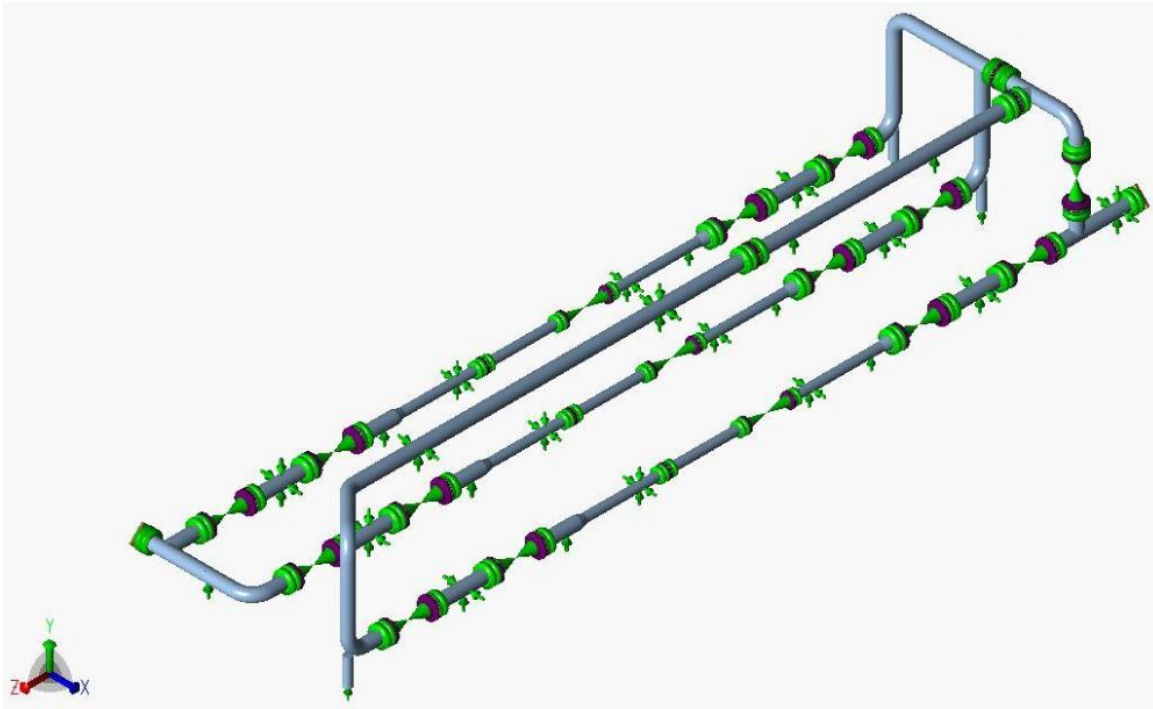
We successfully executed the project with Intergraph CAESAR II, thus completing the project in 2 months with a team of 5 members (including a team leader).

The project work was carried as per ASME B31.3, BS EN ISO-14692 standard and below design conditions:

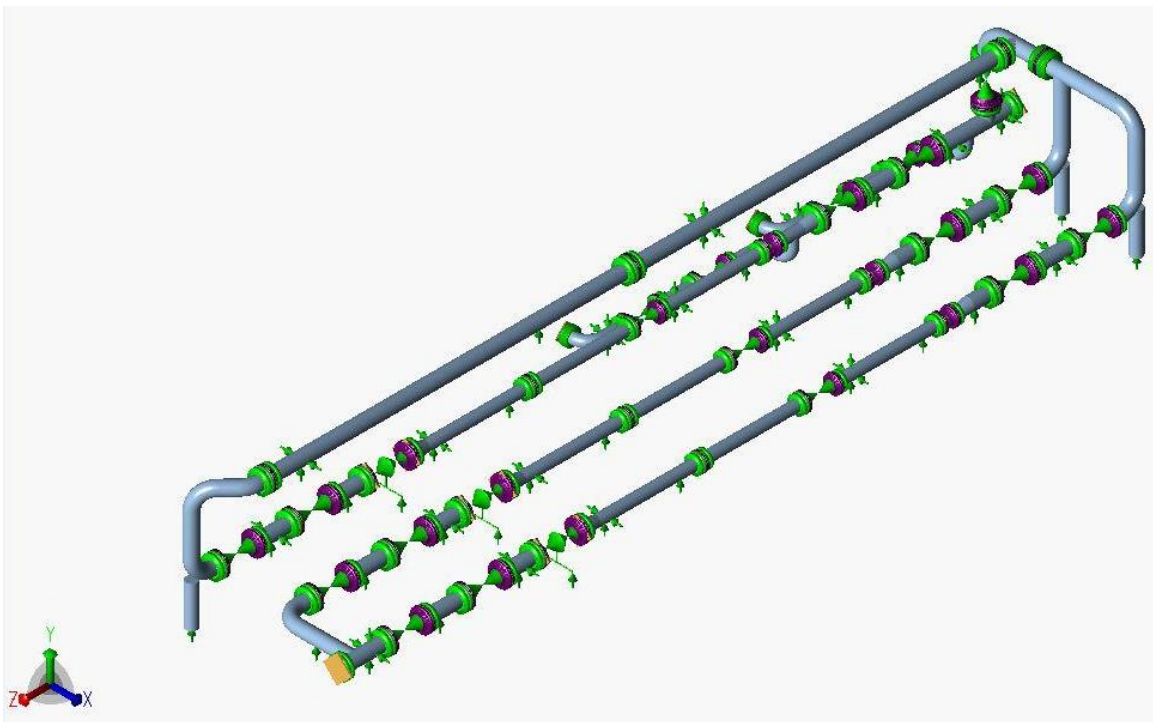
Parameter	Oil Skid Value	Gas Skid Value
Total Stress Isometrics	1	1
Lifting Calculations	4	2
Maximum Flow Rate	973.26 m <sup>3</sup> /h	1014.6 m <sup>3</sup> /h
Design Pressure	130 barg	140 barg
Design Temperature	-20 to 150 °C	-50 to 185 °C

## Project Execution Methodology





Gas Skid – Pipe & Structural Stress Calculation



Oil Skid – Piping & Structural Analysis Calculation

## Technology Used

- Pipe Stress Analysis – CAESAR II
- AutoCAD 2017
- STAAD Pro v8i

## Key Deliverables

- Pipe Stress Calculation Report
- Structural Stress Calculation Report
- Stress Isometrics
- Stress Analysis Report
- Foundation Loads
- Anchor Bolt Location Diagram
- Sizing Calculations
- Lifting Calculations
- Structural Mark-Up
- Transport Analysis

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More information about Rishabh Engineering, please visit:

[www.rishabheng.com](http://www.rishabheng.com) | [www.rishabhsoft.com](http://www.rishabhsoft.com) | [www.rishabhbpo.com](http://www.rishabhbpo.com)

### 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.