

CURRICULUM VITAE

Name: **QAYAM HADI (P.Eng, M.Eng)**
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Total Experience: 12 years in Engineering of Piping & Pipeline systems. Concept, Feed, Technical study & detailed design as per ASME, BPVC, API, ASTM and CSA standards. Stress flexibility analysis (Static and Dynamic), Material selection, Specification and Requisition / Corrosion Estimation, Pipe Wall Thickness, PWHT and NDE requirement and Branch Reinforcement Calculation. Engineering Work Package, preparation of Material Requisition & Technical Bid Evaluation, Material management, ensuring that designs comply as per standards, analyzing and evaluating proposed plant design, performing engineering design calculations for equipment and piping, development of equipment layout, plot plan and piping general arrangement drawings, isometrics, material specifications for piping and supports, stress modeling, stress analysis for critical line. CTR (cost / time / resource) planning for phase 3 and phase 4, EDSR (engineering document status report), kick off meeting & data collection, weekly project meetings, weekly report and schedule, design reviews. Visits to fabrication facilities to witness and observe fabrication and testing, support to vendor to resolve fabrication errors and opportunities, assist site construction with engineering issues & assist site operations.

Professional Qualifications:

- Masters of Engineering (Mechanical) from University of Alberta, Canada.
- Bachelors of Engineering (Mechanical) from Jamia Millia University (Central Government University), India.

Professional Affiliations:

- **P.Eng - APEGA** (The Association of Professional Engineers and Geoscientists of Alberta, Canada)

Trainings:

- Certified piping stress analysis using Caesar II training (Static & Dynamic analysis) from INTERGRAPH Calgary, Alberta, Canada.
- Certified post graduate course in Piping Engineering & Plant Design System.
- ASME Northern Alberta Section Workshop - Introduction to Fitness for service.
- Fundamentals of pipeline design and construction.
- Pipeline pumps Training.
- Certified centrifugal pump sizing and selection training.
- H2S Awareness Training, Workplace Hazardous Materials Information System (WHMIS Training)
- Field Level Hazard Assessment (FLHA Training), Construction Safety Training System

Skills:

- Caesar II, FE Pipe , Nozzle Pro, Intergraph Plant Design System PDS ,SmartPlant Review, Navisworks , Microstation and AutoCAD
- Pipe Class Component Software (PCC),
- Salad Program for Vibration Analysis
- Piping Material Management tool (GESPI and PICOM)
- Working knowledge of ASME , BPVC, API , CSA and WRC Codes and Standards

Experience Summary:

Dow Chemical Canada – Fort Saskatchewan -Alberta – CANADA Role: Piping Engineer/Regulatory Engineer/ Valve & Sealing TST Global SME July 2015 - Continuing
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- Projects:** *GEM Catalyst Capability Project - Polyethylene Plant*
 Train 1 Supercharger Project - Polyethylene Plant
 FS-1 MAPD Reactor Project– Light Hydrocarbon unit -1 Plant
 FS-1 Raw Water Pipeline Project – Water Treatment Plant
 Cooling Tower Replacement Project - Low Density Polyethylene Plant
 Energy Condensate Tank Project – Dow Power Plant
 Block 280 Leachate Tank Upgrade Project – Environmental Operations Plant
 2020 multiple turnaround project – Hydrocarbon unit

Work experience:

- Responsible member of APEGA for Piping and Mechanical Group and maintain resource forecasting;
- Provide On-going engineering support/resolution of Process Plant piping or equipment issues affecting operation and resolution of process plant compliance issues;
- Lead the design team in the implementation of Dow’s safety standards and best practices to ensure safe construction, startup, operation of projects and package registration;
- Developing layouts and conducting reviews to consider constructability, operability and maintainability of the facility
- Developing Piping Stress Analysis deliverables or work with Pipe Stress Engineers to provide necessary analysis as required
- Collaborating with Piping Workshare Focal Point to achieve yearly workshare targets in pipe stress analysis, piping specifications, and piping design
- Work with Pipe Material Specifications and the piping components to ensure that we have the most effective technology and cost advantage.
- Preparation of new pipe specifications for various Dow facilities;
- Applying global design standards, EH&S standards, most effective technology, loss prevention principles, applicable engineering codes, and best practices.

- Ensuring that environmental, Safety and Loss Prevention principles are used in design and imbedded in our Global Piping Work Process.
- Piping integrity check calculations based on ASME B31G, API570 and API 579 & Assessment of general metal loss - Level 1 & level 2 assessment (API 579).
- Providing Engineering support for Pipeline Integrity Projects including welding calculations, material selections, and determination of required hydrostatic test pressures, MOP/MAOP calculations, calculation of set points for pumps, compressors, and other pressure control devices to ensure MOP/MAOP is not exceeded.
- Involved in prioritizing pipeline segments and developing mitigation strategies for the risk associated.
- Detailed evaluation of underground pipeline systems based on API 1102 and ALA Guidelines;
- Familiar with integrity assessment methods such as In-Line-Inspection, non-destructive examination, hydrotesting, and External Corrosion Direct Assessment.
- Involved in development of new MET like Lokring, Uninsulated piping support selection and various specification development.
- Focal point for Underground permits and standards for Western Canada Operations sites.
- Involved in Diamond wrap repairs, Wear Pad PCC calculations, Clamp with strong back design.
- Stress analysis of various critical piping systems;
- Performed stress calculations like Hot tap calculation, Local stress check calculation/GRP pipe manual stress check, Flange leakage analysis, Expansion loop calculation, Wind load analysis, Fatigue analysis, Nozzle load check, WRC 107/297 check, Variable and constant Spring hanger design, Slug flow Analysis, PSV force calculation and buried pipeline calculations and ASME PCC 2 calculation;
- CTR (cost / time / resource) planning for phase 3 and phase 4, EDSR (engineering document status report), kick off meeting & data collection, weekly project meetings, weekly report and schedule, design reviews;
- Choose support location and types for critical and non-critical lines including Hanger design and selection, vessel clip load, clip orientation, selection of clip type & connected pipe support type and calculated vessel platform load;
- Vibration remediation on the basis of Dynamic analysis using Caesar II & Salad Program;
- Preparation of critical line list and PWHT and NDE requirement check Minimum Design Metal
- Temperature (MDMT) calculations, Pipe wall thickness / Area replacement / Miter bend calculation,
- Tubing/Bend/ Threaded and Hydro test Optimization calculation and corrosion rate calculation;
- Preparation of Enquiry requisitions, technical bid evaluations, Material and purchase requisitions and valve requisitions.
- Authenticated piping drawings, stress analysis reports, and mechanical equipment and closure weld registration;
- Approved piping specification variances as required by plants and project teams;
- Liaison to ensure implementing external specification updates as required. i.e., ABSA & CSA Z662.
- Interface with regulatory agencies representing Dow in specific areas with Area Inspectors.

Golder Associates Inc. – Vancouver. British Columbia – CANADA
April 2015 – July 2015

Role: Pipeline Engineer

Projects: *Client: Vale Limited*

Project: Voisey's Bay Mine Expansion Project

Work experience:

- Development and creation of mechanical equipment and piping package that included specifications, liaison with clients and vendors, drawing technical review, contract/work order creation and procurement support.
- Major pipeline sizing and specifications including detailed pipeline routing plans.
- Performed stress analysis for pumps and pipeline system using Caesar II;
- Performed Pipeline bowing calculation check;
- Aiding onsite with commissioning and optimization of design by group.

Saipem Canada Inc. (ENI Group) – Calgary. Alberta – CANADA
January 2012 – January 2015

Role: Piping Engineer

Projects: *Client: Canadian Natural Resources Limited*

Project: GOHTU Hydro-treater Unit Phase 2B – Fort McMurray Alberta, Canada

Project: Sulphur Recovery Unit Phase 3 – Fort McMurray Alberta, Canada

Work experience:

- Coordinating with estimation department for Man hours calculation based on deliverable from piping department perspective.
- Conducted 30%, 60 % & 90% review with Client and responsible for updated Model at all individual milestones
- Stress Analysis of various Pump Stations, Pipe Rack Piping & Equipment like Reactors, Heat Exchangers, Compressors and critical piping systems using Caesar II;
- Stress Manual Calculation like Flange Leakage analysis, Expansion Loop Calculations ,Wind load analysis ,Fatigue Analysis, Nozzle Load Check, WRC 107/297 check, Variable and constant Spring hanger design , Slug Flow Analysis and PSV force Calculations;
- Provides technical interpretation of design documents in support of construction managers, superintendents, and contractors and provides specific expertise for problem solving.
- Responsible for the application of the Project's management of change processes through the use of RFI's, Field Change Notices, and field sketches.
- Monitors, inspects and documents construction operations to ensure compliance with design documents, codes, specifications and project quality requirements.
- Choose support location and types for critical and non-critical lines including Hanger design and selection;
- Pipe Wall thickness Calculation, Area replacement Calculation, Miter Bend Calculation based on ASME B31.3 and corrosion rate calculation as per API 570.

- Pressure design of piping and piping components.
- Preparation of Material Requisition, datasheet and Technical bid evaluation for Pipes, Pipe Fittings, Sample Coolers, Strainers, steam traps and Valves;
- Preparation of critical line list and PWHT and NDE requirement check & Minimum Design Metal Temperature (MDMT) calculations as per ASME B31.3.
- Modifying Piping Line Class based on Project Requirements.
- Involved in Model Review for piping layout based on stress requirements.
- Preparation of RFI and Preparation of Proposal Bidding & Involved in bidding process for piping mechanical quantities.
- Manual Evaluation of weldments of pipe supports with structural members.
- Develop Construction Work Packages including piping scope of work specifications, data sheets, general arrangement layouts, isometrics and Bill of Material;
- Preparation of Color Coding Technical Specification & Review of Material Test Report and vendor documents;

Jacobs Canada Inc. – Edmonton. Alberta – CANADA
October 2010 – November 2011

Role: Mechanical Specialist

Projects: *Client: Enbridge Inc. – CANADA*

Project: Athabasca Pipeline Capacity Expansion Project

Client: Enbridge Inc. - CANADA

Project: Waupisoo Pipeline Capacity Expansion Project

Client: Y Welding Limited - CANADA

Project: Fitting Analysis of Y Laterals and Sweep Tees Joints

Work experience:

- Stress Analysis of various Pump Stations & Equipment piping layouts, above ground and underground pipeline system.
- Buckling Stability Check, Pipeline wall thickness calculation, Anchor force calculation, Virtual anchor length calculation, Induction bend Calculation and Buoyancy Calculation.
- Rail and Road crossing calculation as per API 1102.
- Performs analysis of nozzle loads / stress on vessels using WRC 107/297 by Caesar II software;
- Evaluation of Pump Nozzle Loads as per API 610;
- Metal Loss Calculation check as per API 570.
- Design of Flanges as per ASME section VIII Division 1, Kellogg Pressure Equivalent Method and Nuclear Code Method;
- Calculation of loads due to displacements of piping thermal expansion, anchor force, equipment settlement;
- Did Vibration remediation on the basis of Dynamic analysis of Aboveground Piping system using Caesar II.

- Well conversant with Water Hammer/Slug, Modal, Harmonic and Fatigue Analysis of piping systems.
- Preparation of Material Requisition and Technical bid evaluation for Pipes, Pipe Fittings, and Induction bends, Static mixers, Surge Alleviator and Valves.
- Choose support location and types for critical and non-critical lines including Hanger design and selection.
- Review of Material Test Report and vendor documents.
- Work closely with the facilities and projects groups along with Operations and Maintenance to ensure operational and project technical support;
- Monitor plant and equipment performance and reliability to identify opportunities for improvement;
- Review and maintain all engineering standards, specifications and procedures ;
- Perform troubleshooting and inspections on piping issues such as vibrations or stress analysis and generate technical recommendations.
- Provide direction and technical support to design, fabrication and construction of the piping systems, as well as operations and maintenance for all phases of the project;
- Develop Construction Work Packages including piping scope of work specifications, data sheets, general arrangement layouts, isometrics and Bill of Material;
- Assist site with piping engineering issues;
- Well conversant with the preparation of Design packages;
- Interaction with other engineering disciplines by doing squad checking to provide the integration of design;
- Pipe sizing, Pressure Drop Calculations, Expansion Loop Calculations;
- For the Y Welding performed Burst Pressure test and Area reinforcement calculations as per ASME 31.3 and ASME Section VIII Division 1.

Doosan Engineering Limited India – INDIA
July 2007 to July 2008.

Role: Piping/Mechanical Engineer

Projects: *Client: Foundation Power Company (Daharki) Limited*

Project: Daharki combined cycle Power Plant (175 MW Combined Cycle Power Plant)

Work experience:

- Prepared Material Requisition and Technical bid evaluation for Pipe, Pipe Fittings, Pumps, and pressure vessels involved in the project;
- Prepared system distribution piping layouts for Cooling tower, Heat exchanger, Boiler Feed Pumps, deaerator, steam & gas turbine buildings and utility piping;
- PDS Piping modeling for the High Pressure Main Steam lines, LP Steam Line , Raw water and Boiler feed water system & Main Cooling System;
- Calculation of loads due to displacements of piping thermal expansion, anchor force, equipment settlement;
- Modeling & stress analysis of critical piping systems connected to hot pumps, deaerator, heat exchangers, turbine, Vessels & connected to other equipment;

- Provide direction and technical support to design, fabrication and construction of the piping systems, as well as operations and maintenance for all phases of the project;
- Pipe sizing, Pressure Drop Calculations, Expansion Loop Calculations, Pump sizing and selection;
- Thickness calculations of pipe , Reinforcement pad calculations, Dyke wall calculations, Miter Bend Calculations as per ASME 31;
- Choose support location and type for non-critical lines, Nozzle thermal displacement calculation for various equipment & Calculated span limits for elevated temperature piping for sagging;
- Design calculation & selection of Hangers using ANVIL catalogue, Checking of support drawings and preparation of Support Index;
- Performed variety of analyses like Flange leakage check, WRC 107 check, API 610 Pump Nozzle load check;

Siemens Ltd – INDIA
September 2004 to July 2007

Role: Piping Engineer

Projects: *Project: Sulphur Recovery Unit and Associated Facilities, Indian Oil Corporation Ltd.-Gujarat*

Project: 1 x 27 MW Dalla Thermal Power Plant (UP)

Project: 1 X 35 MW Sardar units II. Bhuj

Work experience:

- Modeling & stress analysis of critical piping systems connected to hot pumps, deaerator ,heat exchangers, turbine, Vessels & connected to other equipment;
- Involved in design review of 3D model of plant for its accessibility, maintainability, constructability, safety, environmental implications, operability;
- Preparation of Datasheets and Technical bid evaluation for Spring Hangers, Selecting and locating appropriate piping supports (shoe, guide or axial stop), Equipment nozzle and flange evaluation based on vendor and code allowable;
- Used Industry specifications for design & detailing & prepared Piping Bulk & Valve MTO;
- Flange leakage test , Nozzle analysis as per WRC 107 /297, API 610 pump nozzle load check; Slug Flow Analysis and PSV force Calculations;
- Calculation of loads due to displacements of piping thermal expansion, anchor force, equipment settlement;
- Design calculation & selection of Hangers & Displacement calculation of equipment;
- Prepared system distribution piping layouts for Cooling tower, Heat exchanger, Boiler Feed Pumps, deaerator, steam & gas turbine buildings and utility piping;
- PDS Piping modeling for the High Pressure Main Steam lines, LP Steam Line , Raw water and Boiler feed water system & Main Cooling System;
- Prepared Material Requisition and Technical bid evaluation for Pipe, Pipe Fittings, Pumps, and pressure vessels involved in the project;
- Conceptual planning, Design and load calculations of main Pipe rack, Sleepers, Trenches & Culvert & design & modeling for bypass & control station;

- Design & modeling of plant, generated IFC, GA, revised IFC, RFI, running clash check, model clean-up, created piping layout for yard piping , pipe racks , pump system, reactors , compressor system, condenser lines;
- Checked location of vents, direction of streams, positions of drain nozzles, lines expansion when heating up / cooling down, location and elevation of all piping and instrument nozzles against requisition of equipment and drawing;
- Thickness calculations of pipe , Reinforcement pad calculations, Dyke wall calculations, Miter Bend Calculations as per ASME 31;
- Attended review meetings and all comments from such meetings recorded either in minutes of meeting or a signed and marked-up comment print of the reviewed document;

Educational Projects:

International Paper Publications:

- “ Feature-Based Approach for a Process Supply System Design ”
Authors: Qayam Hadi, Professor Y.S.Ma (Mechanical Engineering Dept. University of Alberta)
INTERNATIONAL CONFERENCE ON MANUFACTURING AUTOMATION (ICMA2010), Hong Kong.

Master’s Thesis Project:

“INTELLIGENT DESIGN APPROACH FOR PIPELINE DESIGN IN A PROCESS PLANT”

- The aim of this project was to create an efficient and reusable pipeline design system so that industrial contractors can enhance their practices by adopting the pilot approach.
- The PID’s were used as design inputs and the piping layout design were generated semi automatically using Autodesk Inventor 2010 via necessary interactions with the users of the design tool.
- Any changes can be implemented into the 3D mechanical models with minimum efforts via parametric modeling.
- Analytical calculation was done to calculate the design parameters of pressure vessel which was further validated with 3D finite element modeling using ANSYS.