

## RESUME

### **BHARAT BATRA, P.E.**

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### **EDUCATION:**

**M.S. - Computer Science:** October 1984  
*New Jersey Institute Of Technology, Newark, NJ*

**M.S. - Mechanical Engineering:** October 1983 (G.P.A.=4.0/4.0)  
*New Jersey Institute Of Technology, Newark, NJ*

**Diploma in Business Management:** November 1980  
*R.P. Institute of Communication & Management, Bombay, India*

**B.S. - Mechanical Engineering:** May 1978  
*Indian Institute Of Technology, Kanpur, India*

### **EXPERIENCE:**

Mar. 1998 to  
Present

**PRESSURE EQUIPMENT ENGINEERING SERVICES, Missouri City, TX**  
**President & CEO**

- *Finite Element Analysis (using ANSYS software) and engineering evaluation of pressure vessels and pressure vessel components for **Exxon Chemical Company**.*
- *Analysis, re-rating and fitness-for-service evaluation for a wide variety of pressure vessels (including cryogenic) and heat exchangers for **Shell Oil Company**.*
- *Engineering evaluation, retirement thickness calculations and Code calculation for existing pressure vessels and heat exchangers for **Tesoro Refining Company**.*
- *Engineering evaluation, retirement thickness calculations and Code calculation for existing pressure vessels for **Equistar Chemical Company**.*
- *Retirement thickness calculations and reverse engineering for existing pressure vessels and heat exchangers for **Lyondell-CITGO refinery**.*
- *Finite Element Analysis (using ANSYS software) and engineering evaluation of pressure vessel for **Formosa Plastics Corporation**.*
- *Engineering evaluation, minimum thickness calculations and re-rating for various pressure vessels and tall columns for **Crown Central Petroleum Company** (now **Petrobras**).*
- *Design, Analysis, Re-rating and **Fitness-for-Service evaluations** of Pressure Vessels, Heat Exchangers, Storage Tanks and Piping for various Petroleum and Petrochemical companies.*
- ***Finite Elements Analysis** (using ANSYS software) of Pressure vessels, pressure vessel components and other mechanical components for various operating companies and fabricating companies.*
- ***Mechanical Integrity evaluations** for Pressure Vessels and Heat exchangers along with repair recommendations for various petrochemical companies.*
- ***Piping Stress Analysis (using CAESAR-II)** for various piping systems for various companies.*
- *Calculations / Recommendations for suitability of vessels for **in-situ PWHT** for heat treating companies.*
- *Pressure Vessel design work per **ASME, B&PV Code, Section VIII, Div.-2** for international fabricating company.*
- *Suitability for service calculations and record keeping paperwork for pressure vessels and heat exchangers for **British Petroleum** for Texas City refinery.*

Jan. 1997 to  
Feb. 1998

RAYTHEON ENGINEERS & CONSTRUCTORS, Houston, TX  
**Consulting Engineer**

- *Design, Analysis and re-rating of Pressure Vessels for FCCU revamp.*
- *Design & Engineering Analysis of Pressure vessels for HDPE plant.*
- *Finite Elements Analysis (using ANSYS software) of Pressure vessel components.*

Oct. 1989 to  
Jan. 1997

BECHTEL CORPORATION, Houston, TX  
**Consulting Engineer**

- *Design and procurement of pressure vessels for cryogenic service for Liquefied Natural Gas Plant for Atlantic LNG, Trinidad (May 1996 - Jan. 1997).*

Worked as **Consulting Engineer** in Pressure Equipment Group at **Shell Oil Company, Deer Park, TX (Oct. 1991 - April 1996):**

- *Design and analysis of **Pressure Vessels** (Tall Columns, Vertical Pressure Vessels, Horizontal Pressure Vessels, Spherical Vessels, Reactors etc.) based on ASME Boiler & Pressure Vessel Code, **Section VIII, Div.-1 and Div.-2.***
- *Analysis of **Power Boiler Components** per ASME Boiler & Pressure Vessel Code, **Section-I.***
- *Mechanical design and analysis of **Heat Exchangers** based on **TEMA.***
- *Design and analysis of **Storage tanks** based on **API-650** and low pressure storage tanks based on **API-620.***
- ***Re-rating** and Calculation of **minimum thicknesses** for existing pressure vessels, heat exchangers and storage tanks to obtain **remaining safe and useful life** out of equipment.*
- *Calculations for **Repair/Alteration** of existing Pressure Vessels and Tanks per **API-510, National Board Inspection Code** and **API-653.***
- *Evaluation of **cracks and flaws** using **fracture mechanics.***
- *Design of **structural systems and supports** for continued operation of vessels.*
- *Engineering support for **Piping stress analysis** using **CAESAR-II.***
- *Validation of **COMPRESS** - Pressure Vessel Design software on an ongoing basis.*
- *Calculations for suitability of vessels for in-situ **PWHT** and **hydrostatic testing.***

**Other Responsibilities (Oct. 1989 - Oct. 1991):**

- *Engineering, **material requisitions, technical bid evaluations,** vendor drawings & calculations review for process columns, towers and other pressure vessels for a **major refinery project.** The scope of project included **HTU, DCU, SRU units.***
- *Lead role for **repair, re-rating and modification** of existing pressure vessels for **waste water treatment project.***
- *Performed **quality assurance audits** for pressure vessels design for four projects.*
- ***Engineering design** of pressure vessels for furnace gas dryer project.*

Sep. 1984 to  
Oct. 1989

G.E. ENVIRONMENTAL SERVICES, Lebanon, PA  
**Senior Design Engineer**

- ***Finite Elements Analysis** of pressure vessel components and other structures (using ANSYS software) subjected to various types of loading including high temperature and pressure.*
- *Design of pressure vessels for **coal gasification** and other applications.*
- ***Piping Stress Analysis** for coal gasification and other applications.*
- *Design of **Cyclones and Plenums** for reactor and regenerator vessels used in **fluid catalytic cracking units** of petroleum refineries.*
- *Design of **dry and wet flue gas desulfurization vessels.***
- *Design of **storage Silos and tanks** (vertical & horizontal).*
- ***Development of specifications** for various types of equipment.*

Sep. 1981 to  
Aug. 1984

NEW JERSEY INSTITUTE OF TECHNOLOGY, Newark, NJ  
**Teaching Assistant**

*Responsible for teaching the following courses to B.S.M.E. Students: Engineering Graphics, ME Lab-I (Instrumentation and Measurements), ME Lab-II and ME Lab-III (Analysis, Evaluation and Testing of Mechanical Systems)*

Sep. 1978 to  
July 1981

INDIAN ALUMINUM COMPANY, LTD., Belgaum, India  
**Maintenance Engineer**

*Responsible for maintenance of Alumina Plant (A Chemical Plant) equipment e.g. Compressors, Pumps, Blowers, Heat exchangers, conveyor belts, ball mills, screw conveyors, impactors, pressure filters, bucket elevators, kilns, pollution control equipment (fabric filters, cyclones & multiclones), various types of drives etc.*

**Development Engineer**

*Responsible for engineering design and construction of various projects and modification jobs in the plant.*

**PAPERS  
PRESENTED:**

*Paper - On Radial Spring Constants at the juncture of a radial nozzle and a spherical shell presented at the fifth International Conference on Pressure Vessel Technology held in San Francisco, CA in September 1984.*

*Paper - On Rotational Spring Constants at the juncture of a radial nozzle and a spherical shell presented at Pressure Vessel and piping conference held in New Orleans, LA in June 1985.*

*Paper - Design of a Large Rectangular Flange presented at 11<sup>th</sup> International Conference on Pressure Vessel Technology held in Vancouver, Canada in July 2006.*

**PROFESSIONAL  
ACTIVITIES:**

*Registered Professional Engineer in the States of TX and PA.*

*American Society of Mechanical Engineers - Member.*

*Taught "Pressure Vessel Design" course at University of Houston, Houston, TX.*

*Presented "Pressure Vessel Design" Seminar at ASME South Texas Section, Houston, TX.*

**REFERENCES:**

*Will be furnished upon request.*