

## SPM CONSULTANCY SERVICES

## Why Choose Us

Design / Inspection / Consultancy Services for wide range of Equipments.

Competent human resources with extensive experience in engineering and quality control services. Support throughout Accreditation (ASME / IBR / PED / NABL / Class A foundries), Fabrication, and Inspection.

> Technically Competent & updated interpretations of Code requirements through training.

Quick Response Time Value Added Services failure analysis of critical components.

Repair, Alterations and yearly Inspection followed by Certification by IBR Competent Person.

Simple, Precise & Meticulous - delineates SPM quality that contribute to YOur success.

## **Director's Message**



'Success is the result of Preparation, Hard Work & Learning. Happiness doesn't come from doing easy work. But from the afterglow of satisfaction that comes after the achievement of a difficult task that demanded our best. As a founder of SPM, I keenly look forward with the unique strategies to meet the needs of client. There is nothing wrong with staying small. You can do big things with a small team.'

## Transforming vision into reality under an able Leadership

#### **PROFILE**

Senior Inspection and Management professional with wide experience of Inspection & Design with key focus on boiler and pressure vessels third party inspection. Gifted team builder & people development specialist. Persuasive and analytical with focus on practical implementation of ideas to deliver results.

Directed multiple projects and work-streams of varied complexity, size and budget, with aggressive timelines, worked across departments, with cross-cultural, global teams in matrix organization; trained and supervised staff, and coordinated third-party inspection activities. Hands-on experience with exclusive global Inspection agencies.

#### CAREER SUMMARY

A Mechanical Engineer graduate with wide experience in mechanical industry. Technical Expertise is in Engineering & Inspection of Pressure Vessels, Boilers, Turbines, Structural inspections, Industrial Piping, API Pumps & Line pipes. Experience gained in fields of Engineering, Inspection, Quality Control, Planning, Execution, Expediting & Quality Assurance.

#### Key Positions handled:

- Currently holding PEI (Pressure Equipment Inspector) card at SPM consultancy services.
- Overall Design Head at TUV-SUD South Asia.
- Inspection Head at TUV-SUD South Asia for Pune & Nashik Region.
- An Authorized Inspector handling ASME activities at TUV-SUD South Asia / LRA.
- A Competent Person handling IBR inspections at TUV-SUD South Asia.
- PED Inspector at LRA.
- An AI / a Consultant to set up ASME systems at more than 10 Fabrication shops.
- Surveyor at LRA / Bureau Veritas / TUV-SUD to cater the Third Party Inspections of various Engineering Mechanical & Electrical
  components which includes Pressure Vessels, Boilers, Turbines, Turbine Shafts, Centrifugal Pumps, Reciprocating Pumps, API Line
  Pipes, Pipes, Tubes, Forgings, Castings, Gear Boxes, Engines, Electrical Motors, Electrical Cables.
- Quality In charge in Techno Force, Nashik handling various Q.A. / Q.C. activities involved in fabrication of Pressure Vessels as per ASME Code.

#### Proactively participated & completed following projects:

- Setting up, Development & execution in fabrication activities for CC1 & CC2 motors for 'Akash' Missiles.
- Inspections for setting up complete A1 Jetty installation including structural inspections, piping inspections & laying off, Piling inspections at Yard as well as at site.
- Annual underwater inspections for piles, structures, Cathodic Protections at Reliance Jamnagar refinery.
- Annual inspections of A, B, C, D Jetties at Reliance Jamnagar,
- Annual inspections of Single Point Mooring System at Reliance Jamnagar.
- Successfully completed Failure analysis of Castings from Metallurgical Point of view for Sandvik Asia.
- Delivered various training sessions for Design, Material Identification, In-Process Inspections, Final Inspections, Welding Documentation (WPS / PQR / WPQ) as per ASME, EN & IS Codes.
- Third party inspections of Casing & Tubing Line pipes for ONGC project at JSL, Sinnar.
- Third Party Inspections of Cryogenic vessels at IOCL, Nasik.

## **Engineering Services**

Our Engineering Centre is one of fastest growing Design Examination Service Providers for Mechanical and Thermal Engineering sector with enhanced expertise in Pressure Equipment Design Verification. We perform independent verification of designs & calculations to ensure compliance to various National & International Codes, Standards, and Regulations.

Our special focus has always been the constant improvement of our customer's processes, Quality Systems to ensure Safety of people, property & environment from the Industrial hazards and detrimental effects. Personnel & quality systems at DAC are rigorously scrutinized & continuously monitored through an internal system to ensure that only the highest level of value added services are delivered to our Customers.

### **Industrial Services**

We offer a gamut of quality management services to infrastructure companies. Technical expertise in mechanical, electrical and metallurgy are some of them. The company deploys only internally certified personnel with the required skill sets and knowledge to ensure the quality of its services. Its rigorous internal audits and measures help it constantly evaluate its own services.

## **Industrial Sectors**

#### Oil & Gas Refinery, E&P, Gas Distribution



Petro Chemicals Fertilisers, Chemicals & Pharma

#### **Boilers**



Pressure vessel, Coloumns and Reactors



### **Heat Exchanger**



INTER CONDENSOR FOR HGPCL VISAKH REFINERY

#### Power Conventional



Infrastructure
Structural Components for Power
Plant, Steel Plant.



Aviation

Modules, Refuellers, Pit Cleaners, AFT.



**AVIATION REFUELLER AT IOCL** 

### Cryogenic

Static & Transport Vessels



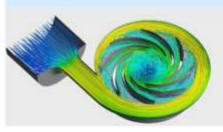
Skid units



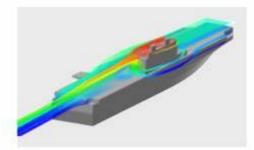
## **Product Types**

## **Engineering Services**

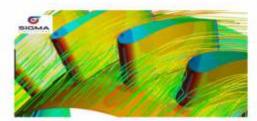
### A) Computational Fluid (CFD)



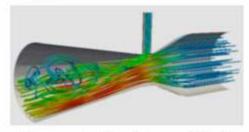
- Validation of conceptual thought and processes in industry
- Performance and rating of heat exchangers
- Solutions for irregular process solutions
- Solutions for R&D activities in product development (avoiding actual cost impact)



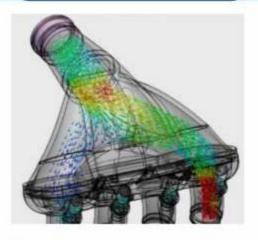
 Solutions for product geometric changes



- Thermal & physical behavior of fluid flow passages in operation
- Pressure drop analysis for various fluids



 Temperature & velocity profile inside flow passages



Pump performance & validation

### **B) Static Equipments**

### a) Preparation of Design Calculations and Drawings to meet the Statutory ">mpliance:

- Indian Boiler Regulation IBR 1950 and its Amendments
- SMPV (Unfired) Rules 2016 India
- Ministry of Manpower, Singapore
- Factories & Machinery (Steam Boiler and Unfired Pressure Vessels) Regulations, 1970 – DOSH, Malaysia
- Pressure Equipment Directive 2014/68/EU-European Union
- Canadian Registration Number (CRN)
- ASME Stamped Boilers and Pressure Vessels

# b) Calculations & Drawings Services for

#### Boilers (Power & Process)



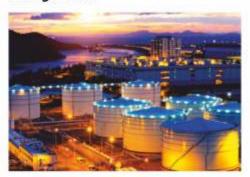
#### Pressure vessel

Reformers, Reactors, Multiwall Reactors, Converter Vessels, Filters, Mounded Bullets, Spheres, Autoclave

#### Coloumns



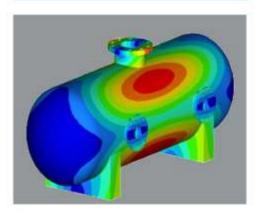
#### Storage Tanks



- Heat Exchanger:
   Shell & Tube Type Heat Exchangers,
   Air Cooled Heat Exchanger.
- Cryogenic Static Vessels
- Cryogenic Transportation Vessels
- Structures (Steel & RCC)
- Steel Chimney & Stacks
- Residual Life Assesment (RLA) of in-service equipments.



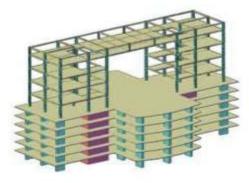
### C) Finite Element Analysis



- Linear & Non-Linear Static analysis of Pressure vessel.
- Fatigue analysis for fluctuating / alternating loads.
- Thermal analysis for the effect of operating temperature.
- Creep analysis for the evaluation in stresses at high temperature.
- Linear & Non-Linear Buckling analysis for stability under
- compressive loads / external pressure
- Vibrational analysis
- Composite analysis
- Response spectrum analysis
- Piping stress due to thermal expansion and support selection
- Transient structural / Thermal Analysis
- Optimization
- Explicit analysis
- Reliability of Printed circuit boards
- Self Developed Formula Based Spreadsheets for supporting calculations.
- Fitness for Service / Rerating
- Concept Design
- 3D Modeling
- Design Optimization
- API 510 (In-service Inspection & rerating of Pressure Equipment)
- API 579 / ASME FFS-1 (Fitness for Service)
  - Gross and local corrosion
  - Pitting
  - Misalignment
  - Distortion
  - Dent, gouges & combination

### D) Structural calculations

- Stad Pro calculations
- 2D drafting & detailing
- TEKLA Modelling
- Design Code- ASCE, EN, IS, DNV, FEM etc.



Products - Transport frames, STS Cranes, Maintenance towers, Duct support structures, Steel roofs and structures, Cargo carrying units



Loads considered - Dead, Live, Wind, Snow, Seismic and Load combinations Phases for structural design -Lifting, transportation and Operating.

### E) Design Engineering Services for

### **Belt Conveyors**

- 3D Models & Assembly of Belt Conveyors
- Belt Conveyor design calculations
- Access platform, Stairs & ladder design
- Manufacturing drawings with BOM
- Machining Drawing
- NDT Control Plan
- Part & Assembly modifications



#### Davits & offshore cranes

- Basic Hydraulic sizing.
- Hydraulic component selections based on force calculations.
- Hydraulic diagram reading and implementation.
- Hydraulic routing.
- Detail drawings for shop use.
- Details of hose list required for assembly.

F) BOM & Purchase
Indenting preparation
for Material
Procurement,
Plate Cutting Plan,
Inventory Management,
TDC Preparation

G) Critical / Specialized Equipment Design Examination

## **Inspection Services**

## A) Second Party & Third Party Inspection Services: Shop and site inspection involving stage and final inspection for

- Boilers
- Pressure vessels, Columns and Reactors



### Heat Exchanger

Shell & Tube Type Heat Exchangers, Air Cooled Heat Exchangers.



- Risers
- Aviations (Refuellers, Modules, AFT Tanks, Pit Cleaner)
- Plates, Pipes, flanges, Valves, Forgings, Castings, Fittings.
- Cranes and lifting equipments.
- High Voltage Transmission Line string & accessories.
- Machinery: Pumps, Compressors, Fan, Blowers, Gear Units.
- Structural inspections.
- Electrical Equipments: Electric Motors, Control Panels, Cables, Transformers, Fittings.

#### Storage Tanks

Heat Exchanger:



Cryogenic Static Vessels





Cryogenic



Structures (Steel & RCC)



Shell & Tube Type Heat Exchangers,

Air Cooled Heat Exchanger.









## B) Annual Inspections of Operating Boilers as per Indian Boiler Regulations.

### Shop Preparation Assistance for ASME Certification. (Consultancy for Design / QA, QC / Welding / NDE Level III)



 Developing & Setting up QA / QC Systems as per IMS at shop floor (ISO 9001 + ISO 14001+ISO 45001)
 Developing QA / QC Systems as per the Product manufacturing plan.
 Setting up Internal Quality Systems

### C) Consultancy Services



- Setting up Internal Quality Systems accommodating current practices for Inventory Control & Delivery Time improvements.
- Consultancy for NABL Accreditation for Mechanical & Chemical (Spectro Analysis) Laboratory as per ISO/IEC 17025:2017 standard and NABL requirements
- Setting up NCR systems.
- Setting up Instruments Calibration system.

- Setting up Material as well as manufacturing products traceability.
- Quality System Audit of Vendors.
- Vendor Assessment and Development.
- Welding
- Welding procedure qualifications as per ASME, AWS, EN, IS, IBR Pd5500 etc.
- Welding and welder operator qualification services as per ASME, AWS, EN, IS, IBR Pd5500 etc.
- Supply Chain inspection
- Vendor site Inspection
- Vendor assessments and audits
- In-Service Inspection of Pressure Vessels, Storage Tanks / Residual Life Assessment (RLA) for Boilers
- Witnessing and Certification of UTM, Impact Machine and Furnace Calibration.

## **Failure analysis Services**

Our Industrial experts collect & analysis data to determine the cause of a failure often with the goal of determining corrective actions or liability. We believe that failure analysis shall enforce trust from the company stakeholders by assuming asset integrity which can save money, lives, and resources if done correctly and acted upon. It is an important discipline in many branches of manufacturing industry, where it is a vital tool used in the development of new products and for the improvement of existing products. We carry out the failure analysis process by collecting failed components to pinpoint the probable cause of failure using a wide array of methods, especially microscopy and spectroscopy, Nondestructive testing (NDT) methods.

## **Training Services**

Our Training programs are delivered with participants designed to meet the current and evolving needs of the Industry. Courses are delivered by Authorised and Competent faculty with extensive knowledge and domain expertise. Our training program are delivered at site or may be arranged online to meet the specific, current & evolving needs of industry.

We provide training program for:

- Overview of various ASME Codes
- ASME Code Awareness program for QC personnel.
- ASME Code Awareness Program for Design personnel.
- Preparation & guidance on implementation of Quality Control System.
- Material: Different Material forms,
   Material Identification & Traceability.

- Welding Documents :
  - Overview about Welding Procedure Qualification / Procedure Qualification Records / WPQ, WOPQ.
- Laboratory Testing :

Overview about various Laboratory testing including chemical, Mechanical & Metallurgical testings.



#### Contact Us:

## **SPM Consultancy Services**

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## Valued Customers: To name a few...































