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# Content

General

**AMC Core Values** 

Objective

Inspection and Testing/Mechanical Services

Organization development







# General

**AMC** is a multidisciplined company which provides engineering, construction, manpower supply and maintenance services to clients active in the energy, water, mining, oil, gas and (petro) chemical markets.

Through our joint ventures with partners in the engineering, mechanical, construction and inspection sectors, we are able to provide multi-disciplined technical services which include complete solutions for non-destructive examinations, mechanical integrity inspections, quality assurance, quality controls, coating inspection, certified welding inspection, tank calibration services as well as mechanical services during both maintenance activities and new construction/projects.

In collaboration with our global service partners, we strive to be the industry's first preference for all related services.

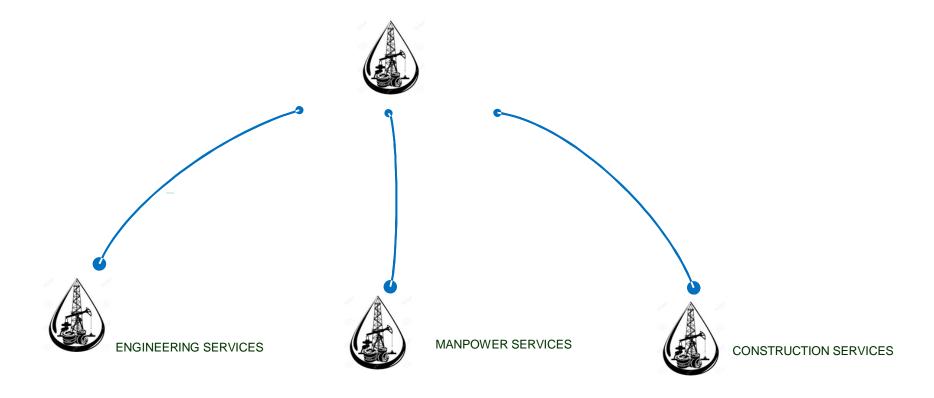






# General

AMC is active in the following sectors: construction, engineering, contracting, consultancy and facility management.



## **Core Values**

**Proactive:** Everyone is able to take their own initiative to exceed customer expectations

**Committed:** Passion, determination, perseverance, and the sense of urgency

Integrity: Trustful, Fair and Honest is who I am

Professional: HSE and Quality are imbedded in all our actions and are noticeable at work as

well as at off the job

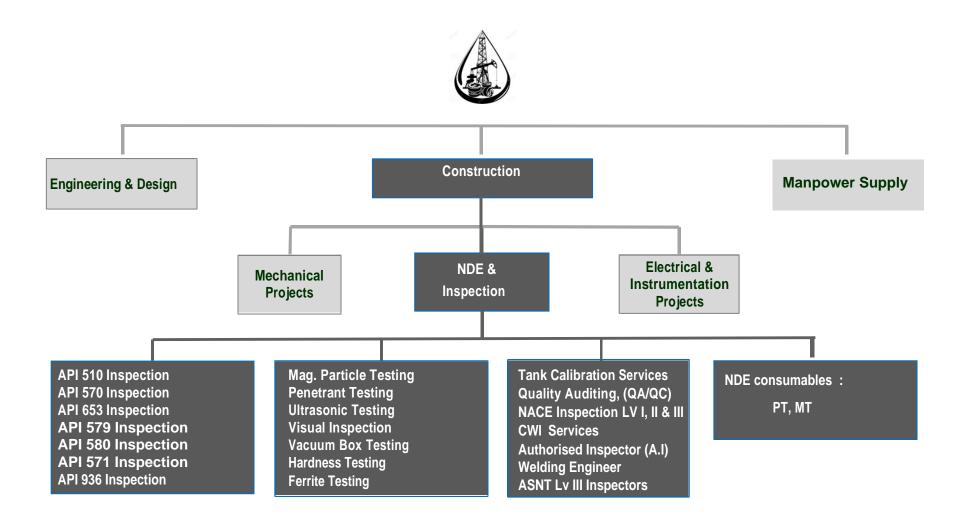
**Innovative:** Always searching for new methods to improve efficiency and effectivity

**Result orientated:** Take pride in achieving our promises by making use of readily available

resources

**Teaming:** We work together to achieve the goals of our customers

and personnel



Our team consists of highly qualified, experienced and multi-disciplined personnel who ensure delivery of a high quality service to our customers.

A dynamic combination of personnel and highly experienced inspectors form an inspection team which not only maximizes quality and efficiency, but is designed to reduce cost allowing us to create a win-win situation for all parties. AMC's goal is to take advantage of the expertise of our foreign counterparts and ultimately provide **ALL** of our services completely local by the continuous training and development of our in-house personnel. Our team is also qualified to perform the most demanding & challenging assignments with Power, Mining, Process Oil, Gas, Refinery and Utility industries and are also proficient in the use of relevant engineering codes.









# Services

### **Magnetic Particle Testing**

This NDT method is accomplished by inducing a magnetic field in a ferromagnetic material and then dusting the surface with iron particles (either dry or suspended in liquid). Surface and near-surface flaws disrupt the flow of the magnetic field within the part and force some of the field to leak out at the surface. Iron particles are attracted and concentrated at sites of the magnetic flux leakages. This produces a visible indication of defect on the surface of the material.







## **Liquid Penetrant Testing**

With this testing method, the test object is coated with a solution that contains a visible or fluorescent dye. Excess solution is then removed from the surface of the object but is left in surface breaking defects. A developer is then applied to draw the penetrant out of the defects.







#### Services continued,

# **Ultrasonic Testing**

In ultrasonic testing, high-frequency sound waves are transmitted into a material to detect imperfections or to locate changes in material properties. AMC has qualified, certified technicians to perform ultrasonic techniques which include:

Thickness, Lamination/Phased Array Testing
Shear wave ultrasonic inspection & flaw detection







# **Leak Testing**

Detecting leaks using conventional methods for both in-service and out of service applications such as:

Vacuum Box Testing

**Diesel Testing** 

**Helium Testing** 

**Hydrostatic Pressure Testing** 

**Pneumatic Pressure Testing** 







### **Hardness/ Ferrite Testing Services**

Measuring the hardness of materials to determine its resistance to plastic deformation using the brinell hardness test method.



# **Positive Material Identification (PMI)**

The analysis of a metallic alloy to establish composition by reading the quantities by percentage of its constituent elements. Typically using the method of X-ray fluorescence.





## AMC specializes in the following services:

## **API Inspection**

Our pool of API Inspectors are experienced in piping, pressure vessels, process plants, and refineries as well as commercial and industrial facilities. Our Inspectors hold certifications in the following API disciplines:

API 510 - Pressure Vessels

API 570 - Piping Systems

API 579 – Fitness for Service Inspection

API 653 - Above Ground Storage Tanks

API 580 - Risk Based Inspection

API SIFE/SIRE - Source Inspection Fixed/Rotating Equipment

API 571 - Corrosion & Materials

API 936 - Refractory Inspection





### **Certified Welding Inspection Services (CWI)**

This involves qualification of welders in different processes, materials and applications, generation and qualification of welding procedure specifications, quality assurance and quality control.

### **NACE Coating Inspection**

adhesion testing etc.

This involves QA/QC for surface preparations and coating for all

industrial applications, integrity testing of coating systems, corrosion assessments and testing, material selections, Cathodic protection systems evaluations and QA/QC, holiday detection,





# ASNT LEVEL III SERVICES: Services continued,

Training and Certification of MT, PT, RT personnel

Generate MT, PT, RT, VT, UT-T NDE procedures to ASME/API/AWS codes

Generate ASNT - TC - 1A Employer's Written Practice molded to meet employer needs

Radiographic interpretation and evaluation to varying codes

#### WELDING ENGINEERING SERVICES, INCLUSIVE OF THE FOLLOWING:

Generate WPS's (SMAW, GTAW, FCAW, SAW) along with combination processes

Qualify same WPS's as above with approved variables

Document PQR's for above WPS's

Qualify welders and issue certificates with with approved variables

Generate on site QC documentation for best practice of welding, structual & piping components

Provide Quality Control and documentation of on site welding

#### **ASSEST MANAGEMENT SERVICES:**

Pressure Vessels, Process Piping and Storage Tanks

# **Calibration of Storage Tanks**

AMC provides storage tank calibration services also known as "Tank Strapping", compliant with the API Manual of Petroleum Management Standard (MPMS) Chapter 2 -Tank Calibration and sound engineering practices.

Our tank calibration services include direct physical measurement of the tank geometry and the in-house calculation of capacity tables from those measurements. Our services are provided by experienced API - 653 certified field inspectors and engineers.

This service is also available via 3D scanning.







#### **3D Range of Services:**

- High Definition 3D Laser Scanning (Onshore and Offshore Facilities)
- 3D Intelligent Models (CADWorx and PDMS) for new and existing facilities
- Plant and Equipment Layouts
- Volumetric calculation of stock pile and land fills
- Tank Calibration
- Piping & Instrumentation Diagrams (P&IDs)
- Pipe Stress Analysis (CAESAR II Software)
- Fabrication and Isometric Spool Drawings
- Weld Mapping
- Pipe Support Design Pipe Racks, Hangers, U-Clamps etc.
- CAD Training (AutoCAD, Revit Architecture, 3DS Max, CADWorx Plant Professional, CADWorx
- Fieldpipe, CADWorx P&ID, Caesar II, PV Elite, Tank, Leica Cyclone 9.0 and Edgewise Plant)
- Support and Sales on ALL Intergraph CADWorx and Analysis Solutions Software
- Support and Sales on ALL ClearEdge 3D Software
- Animation/Simulation

#### **Our Competitive Advantage:**

- Short time to completion
- Service reliability
- Lower implementation cost
- Highly knowledgeable workforce
- Sufficient equipment and skilled labour to execute the project
- High level of standards with everything done and managed in-house and locally
- High flexibility and reliability
- Steady growth and successful track record
- First class service



#### **3D SCAN EQUIPMENT**

Leica HDS 6200



Leica ScanStation P20



Leica HDS 7000



**Leica Viva Total Station TS15** 





#### Miscellaneous items:

Canon EOS Rebel T3i Camera Leica HDS 6200 accessory kit

Leica Wooden Tripod Sphere targets

Canon EOS Rebel T2i Camera Leica HDS 7000 accessory kit

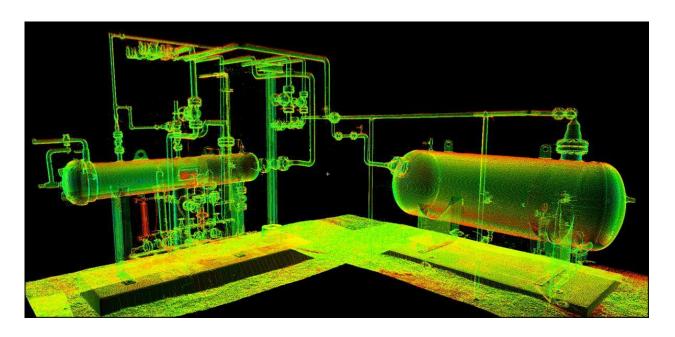
Seco Tripod Leica Swivel and Paper Targets

#### **PROCESS STEPS:**

3D Laser Scanning and 3D Modeling:

3D laser scanning is a fast and accurate method by which an object's physical dimensions are captured using laser technology. This laser technology can capture millions of points within seconds of scanning to create a 3-dimensional shape of any object. Collectively, these points are referred to as "point cloud" data. Each point within the point cloud has an (X,Y,Z) coordinate. The point cloud data of any facility can easily be correlated to the facility's coordinate system.





We can now take the point cloud data and create a 3D non-intelligent model using Leica Cyclone Software. This model would be an EXACT representation of what exists on the field.





A 3D intelligent model can then be created. This is done using Intergraph CADWorx Plant Professional Software. The intelligent model provides hundreds of ready-to-use specifications based on international standards. With this intelligent model, generating bill of materials and isometrics for any project of any scale is just a click away. 2D engineering drawings and P&IDs can also be easily developed.

#### **2D Engineering Drawings:**

With this technology, we have the capacity to produce engineering drawings for facilities in a much reduced time frame when compared to conventional methods. Accurate detailed drawings can be produced and delivered for the following list:

Piping Electrical

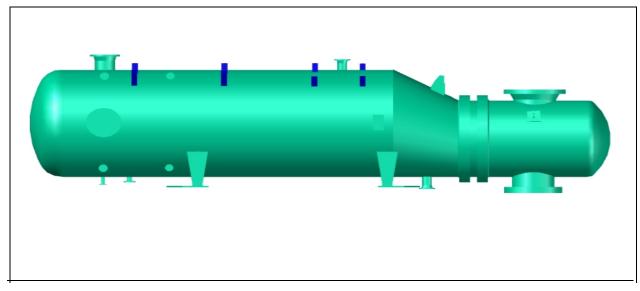
Architectural General Arrangements

Structural Plumbing

HVAC P&IDs

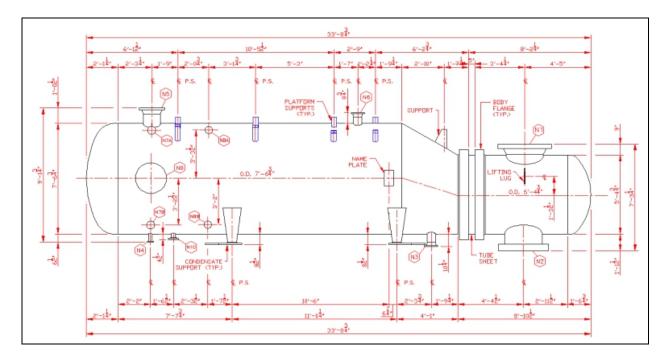
Vessels & Equipment Civil

#### **3D Intelligent Models**

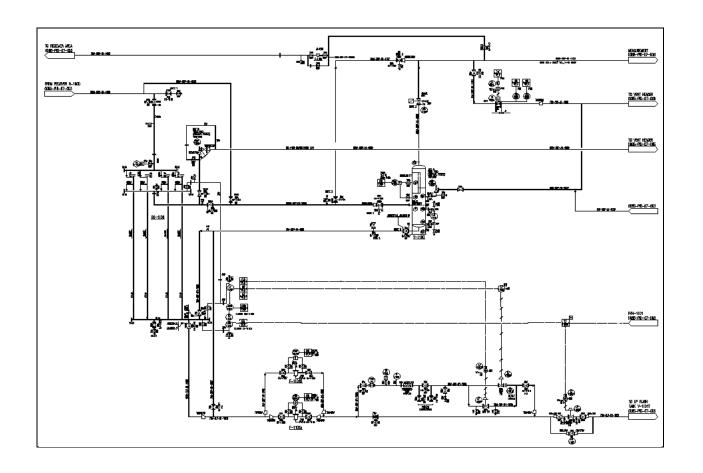




#### **2D Engineering Drawings**

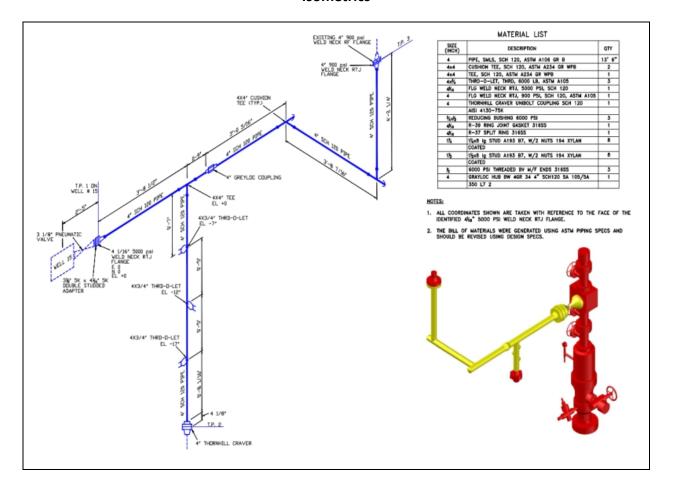








#### Isometrics





# **Mechanical Integrity Services**

AMC specializes in mechanical integrity inspection programs for piping systems, pressure vessels, tanks and all related components to ensure their continued integrity and fitness for service.

To provide you with the most accurate analysis possible, we have assembled what we believe to be the best team of API Certified Inspectors, Certified ASNT NDE Inspectors, Computer Specialists and draftsmen in the industry.

We offer tremendous experience in this field and are capable of performing all of your inspection, data analysis, Inspection software and AutoCAD requirements. AMC will implement programs that meet the regulatory requirements of OSHA 1910.119 and API recommended practices and to carry out these functions in a safe, reliable and cost-efficient manner.



# Mechanical Integrity Services cont'd

#### **Features**

Experienced Management
Project estimates based on verified field data
Skilled inspection teams
(API, ASNT, NACE and AWS certified)
Proprietary computerized inspection software
(UltraPIPE)
Vendor shop inspection
Document scanning
Fully auditable systems
Complete piping classification & systemization
Engineering

#### **Benefits**

Excellent safety Program/Procedures
Comprehensive inspection program
Procedurally driven, allowing consistency
Cost effective, team oriented approach
Applied accepted practices
(NBIC, API, NFPA & NACE)
Organized data presentation
Simplified and affordable follow-up



# MECHANICAL SERVICES - SUB SUPPLIER

#### Leak Repair

Repair services on steam, air, water and process lines Engineering solutions for leaks from 1600°F to cryogenic Box installation, flange clamps, fiberglass pipe wraps with ceramic coating High pressure packing glands.

#### Pipe Wrapping

Restore pipe to original PSI rating as well as increases tensile strength of pipe

#### Hot Tap and Line Stop

Realigning or replacing pipe section from 1" to 24" without shutting down or decommissioning operations, equipment to accommodate max piping diameter of 20" available at present.







#### Bolt Torquing

Services performed on reactors, exchangers, piping, compressors, turbines and valves with nut sizes up to  $7^{5}/8$ ".

**Stud Tensioning** Simultaneous loading up to 100% of the studs found on reactors,

exchangers,

Piping, compressors, turbines and valves.

**Nut Splitting** Removal of sizes up to  $5^{3}/8''$  without damage to the stud and no hot

permit required.

**Stud Extraction** Removal of studs ranging in sizes from  $\frac{1}{2}$ " to 8" in diameter.

**Ultrasonic monitoring** Measuring of residual stud stress







#### Machining and Pipe cutting

**Flange facing** Channel heads: tube sheets, shell flanges, comparison flanges

Grey – Loc and Ring Type Joints (RTJ) flanges.

Internal bore mount, 2" to 120" O.D

External O.D mount from 4" to 90"

From 16RMS finish to AARH standards spiral serrated

All flanges made to API and ANSI specs.

Milling Pass partitions, pump bases, housings, turbine and compressor shells.

**On site services** foundation milling, slot milling, square flange milling, machinery milling

Laser – guided milling.

**In – place drilling** Stud removal, stud over – sizing, thread repair, mounting holes.

**Line Boring** Journals, housings, bearing landings, weld excavation on large

fabricated pieces, rotating machinery and heavy equipment

**Pipe beveling** Cutting and beveling of pipe up to 60"



American Water Works Association













