

Our Mission:

“Providing a professional service, with professional people, to obtain professional results.”


Inter Spec
Environmental Inspection Services

***WORLD CLASS PROTECTION
.....THROUGH INSPECTION***

**Inspection
Training
Engineering
Tank Cleaning
Project Management
Regulatory Plan Development**

***Native American
Owned Certified 8(a)***

OVERVIEW

In the petrochemical industry today, there is a much greater awareness than ever before of the need for environmental protection and compliance with standards set by industry such as, the American Petroleum Institute, American Society of Mechanical Engineers, National Association of Corrosion Engineers, Steel Tank Institute, and other professional organizations. New federal and state regulations have caused owners to take an in-depth look into their facility's integrity; thus reducing chances of catastrophic loss and/or costly fines. Offering the utmost in "Quality Service" and "Experienced Professionals", Inter-

Spec is ready to meet these changing needs—professionally, responsively, effectively, and affordably.



MISSION STATEMENT

InterSpec's goal is to always provide world class services to owners of all types of bulk storage tanks, piping, fueling systems, and chemical containments. Our goal is to specifically offer services that meet or exceed our customers' needs and concerns by utilizing state-of-the-art technol-

ogy, a superior team of trained professionals, and continuous training and professional development of our personnel.



AN INDUSTRY LEADER

InterSpec continuously surpasses others as an industry leader in its ability to evaluate ASTs and piping systems and develop and deliver training programs that have greatly benefited numerous companies and government facilities. InterSpec has conducted hundreds of training seminars ranging from one to five-day courses. InterSpec's extensive experience enables us to evaluate, engineer, and repair most systems using the utmost in technology at afford-

able rates. In fact, our diverse experience and well-trained engineering professionals make us uniquely qualified in many instances to deliver value-added engineered solutions to government and commercial clients. These services are provided for petroleum, chemical, waste water treatment, fire protection systems, and aviation fuel delivery facilities. InterSpec is committed to provide an array of inspection, engineering, and training

services. InterSpec provides these services for both industry and government facilities.



CERTIFICATIONS

- ✦ API-653 Tank Inspection
- ✦ API-570 Pipe Inspection
- ✦ API-1110 Pipe Pressure Test
- ✦ API-510 Pressure Vessel Inspection
- ✦ Steel Tank Institute Inspection (STI)
- ✦ Certified Weld Inspection (CWI)
- ✦ NACE Coatings Inspection
- ✦ PA AST/UST Inspection
- ✦ FRP Tank Inspection
- ✦ NDE Non-Destructive Evaluation
- ✦ MFL Magnetic Flux Leakage



INSPECTION SERVICES

All inspections conducted by Inter-Spec follow Industry Standards and certified inspection procedures. Typical components inspected include tanks, piping, pressure vessels, and associated equipment. Evaluations are in accordance with standards such as API Standards 653, 570, and 510, ASME B31.3, ASME B16.5, STI, NACE, and other supporting recommended practices. Using the latest technology, our inspectors obtain informational data using the appropriate inspection procedures. After the information is obtained, it is evaluated by our inspectors and engineering staff. Results are prepared in report form for the customer, complete with CAD drawings, photographs, engineering data, a suitability for service statement, life expectancy, and necessary recommendations and/or any corrective actions required. After meet-

ing all requirements for structural soundness and integrity, the container or system is certified to the appropriate standard. Non-destructive evaluations such as visual, ultrasonic, magnetic particle, liquid penetrant and magnetic flux leakage evaluations are typical tests performed by our inspectors in obtaining data for evaluation. Our inspectors check for cracks, bulges, distortions, fatigue failures, thermal expansion from heating and rapid cooling, and fabrication defects. It is very important to identify any such areas, since these may be accelerated by temperature, stress, fatigue, impingement, high velocity, or irregularity of flow rates. We carefully perform visual inspections of the container and areas under insulation to identify discrepancies in the material's condition and look for deterioration that may be in the form of electro-

chemical, chemical, mechanical, or a combination of these. Once found, we use the appropriate method of NDE to complete the evaluation. Corrosion, the prime cause of deterioration in most container systems, is often caused by caustics, inorganic acids, organic acids, and low pH water. Bacterial corrosion is commonly found in petroleum based products resulting in rapid deterioration of the containers if not treated expeditiously. Atmospheric corrosion occurs on tanks where humidity conditions are above 60%, which results in an increased rate of oxygen being absorbed; therefore increasing the corrosion rate. Areas under insulation where moisture from rain, condensation, snow, etc. is present also experiences higher rates of corrosion. Fitting connections, flanges, areas next to weld seams, and areas of high stress are also checked in systems that carry caustic products.

API-653 INSPECTIONS

API Standard 653 is the Industry Standard most commonly used for tank inspection repair, alteration, and reconstruction. This standard utilizes the principles of the design code (API Standard 650 and its predecessor API 12C). The design code was employed to provide the petro-chemical industry with tanks of adequate safety along with the information of accumulated knowledge and experience of manufactures and consumers alike. Inspecting tanks to API Standard 653 assists our clients in maintaining tank integrity using these vast resources. The reason for tank inspection in accordance with API Standard 653 is generally to determine the mechanical integrity of the tank and its rate of corrosion. After reviewing the inspection results, steps are taken to reduce the potential for failure and release of stored product. Maintaining a safe operating condition, along with determining any deterioration, is another reason for tank inspection. An API Standard 653 inspection is categorized in two parts--in-service tank inspection and out-of-service tank inspection. These inspections conducted periodically assure a level of structural integrity for protecting the environment and owners from costly cleanup due to incidental product loss.



In-Service Inspection

The in-service inspection, sometimes described as external inspection, is conducted by an authorized inspector and includes a visual inspection of the tanks exterior surface. This inspection is usually conducted while the tank is in operation or when the interior is not assessable or available for inspection. During the in-service inspection, InterSpec inspects the tank systems for evidence of leaks, shell distortion, signs of settlement, corrosion, and the condition of coatings, insulation, and appurtenances. The frequency of an in-service inspection is typically every 5 years.



Tanks that are in more corrosive service or accelerated corrosive conditions are inspected at shorter intervals, which frequency is determined by rate of deterioration and remaining metal thickness. External ultrasonic thickness evaluations, determine the rate of uniform general corrosion while the tank is in operation. By employing a variety of digital thickness gauges and scanners--both manual and robotic--InterSpec is able to obtain the required data for evaluating the condition of the tank and frequency requirements for inspections. The frequency of thickness examination is usually every 15 years; but a shorter inspection frequency may be required according to API Standard 653, which is determined by the difference of the measured thickness and the minimum required thickness. Maximum allowable frequencies for in-service thickness examination for new and older tanks with unknown corrosion is 5 years.

Out-Of-Service Inspection

Out-of-service inspections, sometimes described as internal inspections, are formal complete inspections that are conducted by authorized inspectors on all accessible internal and external areas of tank surfaces, piping, and appurtenances. This type of inspection requires tanks to be out of service so that a thorough internal evaluation can be conducted. Tanks are evaluated for integrity and suitability for service. Tanks are inspected for leaks, corrosion, and any other possible or potential leakage of fluids or product that might cause environmental damage. Areas inspected include tank shells, roofs, containments, piping, and appurtenances using various methods of NDE. Tank bottom plates are inspected over their entire surface to assess the presence of any type of significant underside corrosion. Most common method used by InterSpec for evaluating tank bottoms is Magnetic Flux Leakage (MFL). The MFL device allows our inspectors to quickly and accurately detect any problem areas. Another method used by InterSpec inspectors is Low Frequency Electromagnetic Technique (LFET) scanner, which is a nondestructive evaluation instrument that is designed to quickly and accurately inspect tank floors in ferrous above ground storage tanks. InterSpec is an authorized inspection company with authorized inspectors ready to assist clients in all aspects of their tank inspection needs.



PIPELINE INSPECTIONS

API Standard 570 is used for inspection, repairs, alteration, and re-rating procedures for metallic piping systems that have been placed into service. API-570 was developed for the purpose of inspecting systems in the petroleum refining and chemical industries and is now frequently used by other industries to prevent product loss and assure the same level of integrity as the petrochemical industries. Risk-Based Inspection (RBI) is also used to identify and evaluate various types of deterioration of a piping system. This type of inspection has two key elements--assesses the likelihood and consequences of failure. If clients choose this type of inspection, it is done in accordance with API-RP 580 to determine suitability of material, piping design, operating condition, effectiveness of corrosion controls, design code, and inspection type. A typical API-570 inspection conducted by InterSpec evaluates conditions of injection points, deadlegs that may be found to have a significant corrosion variance, service specific or atmospheric corrosion, and mechanical failures. Mechanical failures are often due to environmental cracking—the most common form being stress corrosion cracking (SCC), which is more prevalent in insulated stainless steel piping in chemical facilities. Other forms of mechanical failures are fatigue cracking often due to excessive cyclical stress imposed by pressure, mechanical vibration, and thermal means. Facilities with piping anchored to the ground and pumps connected without adequate expansion joints or dampers are prime candidates for fatigue

cracking at areas where pipes exit the AST. To a lesser extent--due to improvement in metallurgy and design improvements--brittle fracture and creep cracking add to the list of mechanical failure. Each piping circuit of a pipeline must be visually inspected by a certified inspector every 5 or 10 years, depending on its classification. Ultrasonic inspection intervals can vary from 3 to 10 years, also depending on classification. And in some cases, ultrasonic thickness intervals may be required sooner,

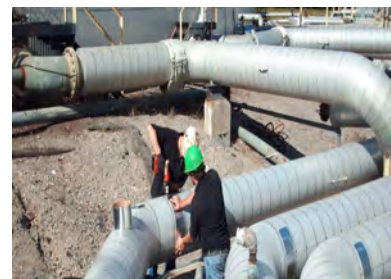


based on remaining life calculations of the pipe. Insulated piping systems are monitored to determine conditions of the insulation and to identify any



possible breach that might contribute to Corrosion Under Insulation (CUI). Using API-570 guidelines and experience, InterSpec is able to inspect insulated piping with minimal removal

of insulation. Thermal scanners, radiograph shots, and guided wave ultrasonic evaluation, along with visual testing, are just a few inspection methods employed by InterSpec. Guided wave ultrasonic evaluation is used to determine the integrity of underground piping. Helium testing is utilized to determine the presence and location of underground and aboveground pipeline leaks. If requested by the client, a close interval potential survey can be used to determine possible areas of corrosion on underground piping systems, as well as API-1110 pressure testing on petroleum piping systems for meeting the requirements for various state and federal regulations. As a certified inspection company with a staff of professional examiners, piping engineers, and inspectors, InterSpec is able to provide quality certified inspections in accordance with API-570 that meet or exceed our customers' needs. Our professionals utilize the latest in state-of-the-art equipment and technology and are certified to inspect and examine numerous types of pipelines for integrity in accordance with API-570 and API-1110. Following each inspection, an engineering report is prepared detailing findings, recommendations, and engineering drawings. A section



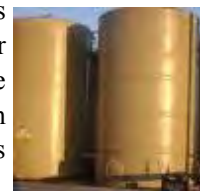
Fiberglass Reinforced Plastic Tank Inspections



FRP Tank inspections are conducted in accordance with the Fiberglass Tank & Pipe Institute's Recommended Practice FTPI-2007-1. InterSpec's certified inspectors are qualified to perform FRP inspections. A Certified Tank and Vessel External Inspection is required every 5 years for tanks and vessels in Hazardous Substance service and every

10 years for tanks and vessels with a greater than 10,000 gallons capacity and in other service. A Certified Tank and Vessel Integrity Inspection is required every 20 years for tanks and vessels in Hazardous Substance service as well as those having a greater than 10,000 gallons capacity and in other service. A Certified Tank and Vessel External Inspection and a Certified Tank and Vessel Integrity Inspection is required whenever there is evidence of material stress, leaks occur, prior to change in service, and upon tank and vessel relocation. During a Certified Tank and Vessel Integri-

ty Inspection, one or more of the following tests are performed: (1) internal inspection; (2) pressure test; (3) ultrasonic thickness test; and (4) interstitial vacuum test if double-wall or equipped with a double-bottom. The entire surface is examined for crazing (small hair-line cracks), delamination, over torque on flange bolts, tank supports, hold-down lugs, vents, barcol hardness for determining the cure and hardness of resins. Other tests used are acoustic emission and tracer gas testing.



Long Range Guided Wave Ultrasonic Testing

InterSpec provides Long-Range Guided Wave Ultrasonic Testing (LRGWUT) of piping systems. It is a tool to help the direct assessment of external pipeline corrosion that is gaining the attention of facility engineers. LRGWUT technology is being viewed more widely as another tool to help. The increasing visibility of the technique can be attributed to capability improvements, an increased understanding of the decisions that must be thoughtfully made about where to use the technology, and—equally important—the importance of employing professional data interpretation. LRGWUT is a newly accepted method for evaluating insulated pipes, cased sections, road crossings, compressor station piping, buried pipelines, tank dike piping, and most piping systems that are difficult to access. The low frequency ultrasonic guided wave inspection technique has been developed for the rapid survey of piping

systems for detection of both internal and external corrosion or erosion features. In its more recent use in field pipeline corrosion detection, it has been found to be particularly advantageous for use at rail and road crossings, especially with cased piping. It also has proven useful on above-ground piping and non-piggable portions of pipelines. InterSpec can provide LRGWUT services anywhere within the US and throughout the world. LRGWUT systems utilize single or multiple circumferential probe rings of either electromagnetic or piezoelectric transducer configurations. The transducers surround the pipe, needing only minimal clearance with which to operate. The equipment, available for pipe diameters ranging from 3

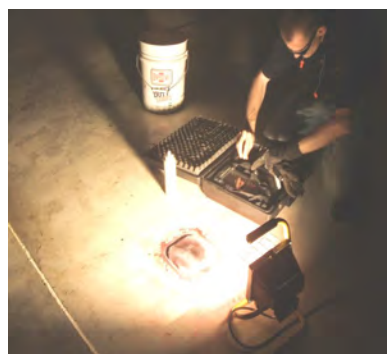
to 42 inches, can generate three wave types—longitudinal, torsional or flexural—sending the waves in both directions from the probe transducer to inspect the entire pipe wall. The transmitted wave detects echoes from corrosion defects in the transducer from the defects or circumferential pipeline welds. The reflections can then be analyzed independently for each direction. A typical assessment range of ± 100 feet can be expected in either direction from a single test point under normal conditions.



Non-Destructive Evaluation (NDE)

Ultrasonic Thickness Testing (UT) is used for thickness readings and flaw detection to evaluate welds and to find interior defects of the metal. Liquid Penetrant Testing (PT) is used to detect surface defects in ferromagnetic and non-ferromagnetic materials, such as stainless steel and aluminum. Magnetic Particle Testing (MT) is used to test for surface defects in ferro-

magnetic materials. Other NDE methods available are X-Ray, Eddy Current, and vacuum box evaluation.



Helium Leak Detection

Helium Leak Testing is used to detect and locate leaks in tank bottoms, USTs, drainage and piping systems, and is one of the most effective and affordable method for accomplishing leak detection. Helium leak detection is a highly precise, extremely accurate and can be used on all types of piping and

storage systems, including underground systems. After helium is injected into the system, it diffuses throughout. The helium penetrates any defective welds, cracks, or pin-holes and defects are found by identifying helium gas in the problem areas.



Magnetic Flux Leakage (MFL) Test

InterSpec conducts Magnetic Flux Leakage (MFL) Inspections for examination of tank floor bottoms to assess overall floor conditions. By utilizing a scanner on the floor with a magnetic force, any significant reductions in the plate thickness results in some of the flux being forced into the air around the area of reduction. Sensors detect these are-

as of flux leakage and identify areas of corrosion.



Ultrasonic Crawler

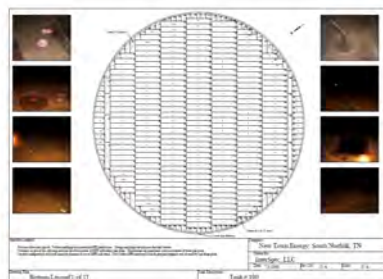
A remotely operated Ultrasonic Crawler is used by inspectors to obtain thickness measurements on aboveground storage tanks and pressure vessels without the use of ropes or scaffolding. The crawler is capable of scanning large surfaces in minimal time while data is stored by

the imaging software. The crawler utilizes high speed ultrasound and NDT automation and is capable of traveling vertically, horizontally, and inverted. The crawler has been proven to meet or exceed relevant inspection standards.



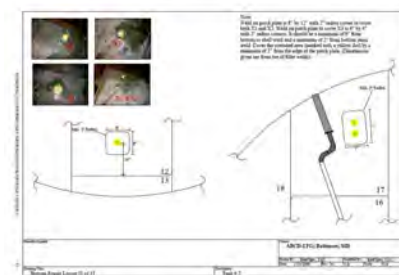
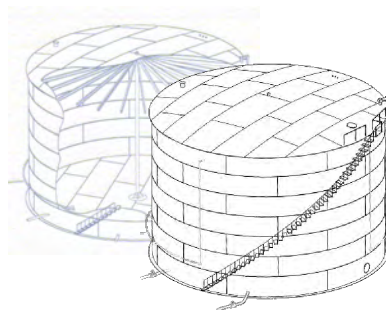
ENGINEERING SERVICES

Many of the recent changes in federal SPCC regulations have resulted in the need for aboveground tank owners to comply with federal regulations that often have additional requirements not covered by current state regulations. InterSpec is well versed in both state and federal regulations and can provide answers and solutions for your inspection and engineering needs. As professionals in environmental inspection services, we can update and/or develop SPCC Plans, ODCP Plans, FRP Plans, and/or other required federal and state regulations,



as well as detailed training seminars in many of these environmental areas. InterSpec's ability to carefully study, analyze, and recommend project changes to specifications originally scoped by the clients, has often proven to be of

benefit to them in reducing costs and construction phase impact at their facilities. The InterSpec difference is extensive expertise and experience on both large and small projects. InterSpec has the capability to provide solutions to most challenges by providing a full array of engineering services for individual clients as well as those serviced with partnering firms. InterSpec's professionals strive to provide their clients with the very best and most affordable solutions and value-added assistance in a timely manner.



- ✦ Onsite Construction Management
- ✦ Project Management
- ✦ P&IDs and Drawing Reviews
- ✦ O & M Manual Development
- ✦ Bid Specifications and Evaluations
- ✦ Structural Integrity Testing
- ✦ Process System Design & Evaluation
- ✦ Non Destructive Evaluation
- ✦ Engineering Training
- ✦ Aviation Fuel Systems
- ✦ Water & Wastewater Treatment Assessments



REGULATORY PLAN DEVELOPMENT



InterSpec's professionals are knowledgeable and experienced in reviewing and developing many regulatory plans for assisting owners in meeting federal and state requirements, such as SPCC Plans, ODCP Plans, FRP

Plans, and others. Our engineers meet with clients, conduct an audit inspection of their facilities, and develop site specific plans to meet all applicable federal and state requirements. The completed plan is reviewed and certified by a Professional Engineer prior to delivery to the customer. Recommendations and training are included.

SPCC PLAN DEVELOPMENT

Many changes in federal Spill Prevention, Control and Countermeasure (SPCC) regulations have resulted in additional requirements for many owners and operators. All non-transportation-related bulk petroleum storage facilities having an aggregate

aboveground storage capacity greater than 1,320 gallons or a buried storage capacity greater than 42,000 gallons are now required to maintain a site-specific SPCC Plan for their facility. Other facilities required to have and maintain an SPCC Plan are those that are geographically located where there is a reasonable expectation of discharge



into navigable waters of the United States and/or adjoining shorelines, those with containers having the capacity of 55 gallons or larger, and tanks with animal fats, vegetable oil, and petroleum-based oils. An SPCC Plan is a detailed, facility-specific, written description of the facility's operation to comply with the requirements of the Oil Pollu-

tion Prevention Regulation 40 CFR 112. The SPCC Plan is required to contain information regarding secondary containment, facility drainage, containment dikes and barriers, sump and collection systems, retention ponds, curbing, tank corrosion protection systems, liquid level devices, lighting, and security measures. InterSpec is staffed with certified inspectors and engineers who are qualified to provide review and audit of owners' facilities and the development of site specific plans to meet SPCC Plan requirements. Each plan includes detailed facility layout that identifies and locates all containers, transfer stations, and connecting pipes; and upon completion, is reviewed and certified by a licensed Professional Engineer (P.E.) in accordance with 40 CFR 112.3(d).

FRP PLAN DEVELOPMENT

A Facility Response Plan (FRP) demonstrates a facility's preparedness to respond to a worst case oil discharge. Under the Clean Water Act, as amended by the Oil Pollution Act, certain facilities that store and use oil are required to prepare and submit these plans, as part of the Oil Pollution Prevention regulation. Key elements of a Facility Response Plan include: Emergency Response Action Plan to serve as both a planning and action document. The plan is to be maintained as an easily accessible, stand-alone section of the overall plan complete with facility information, including name, type, location, owner, and operator information. It is to address emergency notifica-

tion, equipment, personnel, evacuation information, and identify and provide an analysis of potential spill hazards and previous spills. The plan discusses small, medium, and worst-case discharge scenarios and response actions. It describes the discharge detection procedures and equipment and the implementation of the plan for response, containment, and disposal. It provides records of self-inspections, drills, exercises, and response training. Also included in the plan are diagrams of facility site plan, drainage and evacuation plan, security (e.g., fences, lighting, alarms, guards, emergency cut-off valves and locks, etc.), and a Response plan coversheet.



PROJECT MANAGEMENT

InterSpec focuses on solutions for today's industry while providing superior results. Our engineers and certified inspectors are knowledgeable and experienced in federal, state, and local industry standards, codes, and regulations. The InterSpec Project Management Team is ca-

pable of managing all aspects of government and commercial projects to ensure they are in full compliance with standards, specifications, and procedures as well as federal, state, and local regulations. InterSpec delivers reliable quality services at competitive rates.

InterSpec experienced personnel Project Management



Tank Bottom Repairs and Replacements
Secondary Containments
Shell Repairs
Coating and Linings
Seal Replacements
Structural Repairs
Foundation Repairs
New Tank Construction
Piping Repairs and New Installation
Fuel Loading and Unloading Racks

*InterSpec's proven success is for one reason
.....Satisfied Customers.*



OTHER SERVICES



AST Modifications & Repairs
Tank Bottom Repairs & Replacements
Secondary Containments
Coatings & Linings
Seal Replacements
Structural Repairs
Foundation Repairs
Major Tank Repairs
Shell Plate Repair/Replacement
Tank Jacking
Nozzle Modifications/Replacements
Roof Repairs/Replacements Minor Repairs
Appurtenance Replacement



TRAINING

API-653 Tank Inspection

API-650 Storage Tank Design

API-570 Piping Inspection

API-510 Pressure Vessel Inspection

SPCC Guidance Training

PA-DEP Training

(7 One-Day Specialty Courses)

Confined Space Entry

All inspection seminars offered through Inter-Spec are oriented toward engineering evaluation, inspection procedures, repair techniques, problem solving, and individual qualification requirements in nondestructive examination (NDE) and welding. Students receive a certificate of training upon completion of each seminar. Training seminars range from 1 to 5 courses and can be taught at the location of your choice when arranged with a minimum enrollment of 6 students.



REFERENCES

Western Area Power

BWI Airport

KCI Airport

Dulles Airport

Leesburg Airport

Shenandoah Airport

Greenville Airport

Norfolk Airport

Perdue Foods

Smithfield Foods

Tyson Foods

Cargill Foods

Royster Clark

Anheuser- Busch

Tallahassee Electric

Dominion Power

Amtrak

Union Pacific Railroad

United States Air Force

United States Coast Guard

United States Army

United States Navy

Lockheed Martin

U.S. EPA

Virginia DEQ

Pennsylvania DEP

Pennsylvania DOT

New Jersey DEP

CITGO Petroleum

Mobil Oil Company

Shell Petroleum

IMTT

Kansas City Power & Light

Conectiv

Weston Solutions

Sanofi Pasteur



*"Inspecting
The
Present
Preserving
The
Future"*

*Inspecting the Present.....
Protecting the Future*



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