



**INDUSTRIAL**<sup>®</sup>  
INSPECTION & ANALYSIS



*We know*

**NUCLEAR.**

**NUCLEAR POWER INDUSTRY SERVICES**

**For nearly 50 years, Industrial Inspection & Analysis® (IIA) has grown alongside the nuclear power industry, becoming the go-to inspection experts for plant operators. We live and breathe the complexities and challenges of this highly regulated industry. And no one is better equipped to help you navigate those challenges than IIA.**

“Our full-service inspection support is designed to promote safe, reliable operations, while lowering the total cost of ownership. IIA is a leader in ASME Section XI and non-Section XI Examinations, as well as providing maintenance, foreign object retrieval, and nuclear outage expertise. We leverage proven automated and manual methods as well as conventional and advanced non-destructive examination methods to deliver the accurate data you need.

However, when conventional exam methods are not good enough, our engineering staff has developed one-of-a-kind delivery and examination solutions. These solutions have become industry-leading alternatives, and we continue to improve their performance to meet the nuclear industry’s ever-changing demands.

Our technical leadership is matched by unparalleled customer service and compliance expertise. Our team includes highly qualified, responsive professionals, from certified Level II and III NDE Technicians to American Welding Society Certified Welding Inspectors — all with an eye for detail.

Whether you need help with routine examinations, a refueling outage or an unexpected equipment challenge, IIA delivers the answers you need to make critical decisions — fast.

## THE POWER OF PARTNERSHIP

### Gain Efficiency & Reduce Costs with IIA

#### EXPERT INSPECTION OF CRITICAL COMPONENTS

- Detect degradation early
- Reduce unplanned outages & costly rework
- Save time with non-destructive testing tools

#### ENGINEERING ANALYSIS

- Maximize life of equipment
- Simplify & prioritize run/repair/replace decisions
- Enable preventive maintenance vs. reactive repairs
- Safely defer capital costs

#### CUTTING-EDGE INSPECTION TOOLS

- ARMUT® high-resolution weld images
- AIRIS® RPV & tank robotic scanner
- PASS® non-intrusive valve data
- Custom inspection tools

#### ONE-STOP SHOP

- Integrate testing + engineering services
- Access inspection, analysis & lab testing with a single PO
- Turn inspection data into actionable insights
- Proactively manage equipment issues & compliance risks

#### BREADTH OF SERVICE

- ASME Section XI examinations, including Appendix VIII (PDI) examinations
- Corrosion, pitting, and wall-loss detection
- Comprehensive Foreign Material Exclusion (FME) program
- General weld inspections, including unmatched elbow weld inspections.
- ID and OD piping
- Various storage tanks
- Service Water Line Inspections
- Valve Diagnostics
- Reactor Vessel



# CERTIFICATIONS & GUIDELINES

- All certifications based on the requirements of ANSI/ASNT CP-189, as modified by ASME Section XI.
- American Welding Society
- ASME NQA-1
- ASNT Level III
- Certified in SNT-TC-1A
- NIAC Approved Vendor
- NUPIC Approved Vendor
- Equipment Directive 2014/68/UE (European Certification)
- Equipment Regulations 1999
- Department of State Health

“Nuclear power plants are unique and require adhering to special safety rules and processes. I believe IIA’s nuclear site experience was a critical factor in the project’s success.”

~ A Key Leader from the Nuclear Division of a Fortune 100 Energy Company





# NON-DESTRUCTIVE EXAMINATIONS

## KNOW YOUR EQUIPMENT INSIDE & OUT

With expertise in both conventional and advanced methods, IIA is a leading provider of non-destructive examinations (NDE) in the nuclear industry.

Our certified inspectors arrive on site with cutting-edge technology and a remote support network to support daily inspection needs, as well as planned maintenance activities. In the field and in the lab, we work with a range of devices and methodologies to meet your plant's unique needs.

Our team has in-depth knowledge of all applicable codes and standards — knowledge that helps keep you in compliance.

### TRADITIONAL NDE

- Eddy Current (EC)
- Radiography (RT)
- Magnetic Particle (MT)
- Penetrant Testing (PT)
- Ultrasonic Testing (UT)
- Visual Testing (VT)
- Corrosion Mapping
- Ferrite Testing
- Hardness Testing

### SPECIALTY NDE

- Absolute Recordable Manual Ultrasonic Testing (ARMUT®)
- Automated Nozzle Tool System (ANT)
- Steam Generator Nozzle Examination Tool (SG-NExT®)
- Advanced Inspection for Reactor Pressure Vessel and Internal Systems (AIRIS®)
- Guided Wave Testing (GWT)
- Phased Array Sectorial Scanning (PASS)
- Pulsed Eddy Current Array (PECA)
- Automated Corrosion Mapping (Internal)
- Laser Profilometry (External)
- FlexoFORM Phased Array
- Computed Radiography (CR)
- Phased Array Ultrasonic Examination (PAUT) Manual & Automated
- Full Matrix Capture (FMC)
- Time of Flight Diffraction (TOFD)

We are a premier provider of a full range of conventional non-destructive examination services, including the following.

### DYE PENETRANT (PT)

This widely applied and low-cost inspection method is used to locate surface-breaking defects in all non-porous materials, such as metals, plastics, or ceramics. PT is used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products, and fatigue cracks on in-service components. IIA is capable of performing all types and methods of penetrant inspection.

### MAGNETIC PARTICLE (MT)

Magnetic particle inspection (MT or MPI) is an inspection method for locating surface or shallow sub-surface defects on ferromagnetic material, such as castings, forgings, welds and machined parts. IIA can perform both wet and dry MPI methods. There is essentially no limit to the size and shape of parts that can be inspected using MT.

### RADIOGRAPHY (RT)

For welds, castings and parts used in high stress or high reliability environments, radiographic testing is a highly accurate method to detect internal defects not apparent on the surface of the part. Conventional radiography using gamma sources is a popular method of non-destructive testing in numerous industries due to its proven accuracy, cost effectiveness, high level of portability, and extreme flexibility. We perform x-ray/gamma ray/radar inspection – both film and digital – to MIL-SPEC, ANSI, ASTM and ASME specifications. This is often performed in conjunction with penetrant or magnetic particle inspection for surface coverage. We can also inspect practical thickness..

### ULTRASONICS (UT)

Ultrasonic testing is a suite of methodologies that detect a variety of indications or characterize materials by transmitting high-frequency sound waves through a test item into a receiver. Depending on how the sound waves travel through the object, determinations can be made about the material condition and structural integrity of the object. One common use is ultrasonic thickness testing (UTT), which measures the thickness of the test object to determine the extent of corrosion. IIA performs both contact and immersive UT, with capabilities for pulse echo, transmissional, straight beam, angle beam (shear wave) testing, as well as advanced phased array techniques.

### VISUAL TESTING (VT)

With an eye for detail, our highly trained and certified inspectors will visually inspect for indications such as cracks, corrosion, erosion, damage, and overall structural integrity of equipment such as tanks, steam turbines, fans, pressure vessels, piping, lift equipment and more.

## **AUTOMATED CORROSION MAPPING (INTERNAL)**

This advanced technique uses an automatic scanner to assess the thickness of pipelines, pressure vessels and other critical equipment. The technology allows us to precisely map out and measure internal areas of corrosion.

## **AUTOMATED CORROSION MAPPING LASER PROFILOMETRY (EXTERNAL)**

For areas that cannot be accessed for manual examination, laser profilometry can be used to scan the surface of an object and quantify exterior roughness or cracks. This approach collects more data points and provides multiple views for analysis that can be helpful in determining if an indication is corrosion or a manufacturing defect. This inspection technique can increase the probability of detection and reduce inspection times from hours to minutes.

## **COMPUTED RADIOGRAPHY (CR)**

IIA uses the smallest, lightest CR system designed specifically for non-destructive testing. Using direct input from mobile X-ray technicians, CR greatly increases the speed and efficiency of testing, while maintaining high levels of image quality and sensitivity. Images are processed in seconds, expediting weld approval and clearance. Images may be exported for immediate auditing or imported into CAD drawings for package detailing.

## **FULL MATRIX CAPTURE (FMC)**

This portable phased array ultrasonic testing technique provides more complete and reliable data by capturing every possible transmit-receive combination for a given transducer. FMC can improve inspection speed and accuracy and minimize the need for re-scans.

## **GUIDED WAVE TESTING (GWT)**

Using rapid remote ultrasonic screening, guided wave testing identifies changes in a component's cross section that could result in external and/or internal defects. This corrosion detection method is ideal for screening significant lengths of metallic pipelines or other hard-to-access areas in a pipeline system. Unlike conventional ultrasonic systems, GWT is capable of assessing areas several hundred feet away from the transducer.

## **PHASED ARRAY UT (PAUT)**

This advanced method of ultrasonic testing is used to determine component quality and detect flaws in manufactured materials, such as welds. In addition, PAUT can be effectively used for wall thickness measurements in conjunction with corrosion testing. This NDE technique is minimally invasive, highly flexible, and offers multiple applications.

## **PULSED EDDY CURRENT ARRAY (PECA)**

Pulsed eddy current array is a highly accurate technique to determine average wall thickness for any material that conducts electricity. PECA is best used as a screening technique; other methods are better suited for detecting isolated areas of corrosion.

## **SHEAR WAVE**

Primarily used for weld inspections, shear wave testing uses a probe to direct ultrasonic beams toward the weld at an angle. This advanced testing technique is often required for inspections involving awkward weld geometry or where a weld crown or bead is present.

## **TIME OF FLIGHT DIFFRACTION (TOFD)**

This advanced technique is a sensitive and accurate nondestructive method used primarily to identify weld defects with extreme angles. TOFD is also effective in improving sizing accuracy of weld defects and detecting discontinuities such as cracks, lack of fusion and lack of penetration.



# YOUR IIA OUTAGE EXPERTS

## NUCLEAR POWER PLANT OUTAGE SERVICES

**From the planning stage to power restoration, we are the outage experts. Our teamwork and state-of-the-art technology will help you meet tight schedule requirements, minimize downtime, and maximize resources.**

IIA has procedures and personnel qualified through the Electric Power Research Institute (EPRI) Performance Demonstration Initiative (PDI) and Boiling Water Reactor Inspection Program (BWRVIP), and our team includes highly qualified and certified Level I, II, and III NDE Technicians, including Certified Welding Inspectors. Our highly trained professionals bring hands-on experience in all examinations and testing methods and a deep understanding of plant operations, goals and regulatory requirements.

Some of our proprietary technology is used in lieu of radiography, which provides a safer testing environment and allows other critical efforts to continue without interruption. With quality inspection data and quick turnaround times, IIA can help get your plant back on line — on time and within budget.

**Our team can mobilize quickly to meet all your outage inspection needs, and we have the capacity to respond to multiple concurrent outages.**

### OUTAGE SERVICES:

- Outage Planning
- Tank & Piping Inspections
- Burner Set-up
- Quality Control / Quality Assurance
- Valve & Nozzle Examinations
- Reactor Vessel, Condensate, & Reactor Inspections
- Aerial & Lift Device Inspections
- Heat Exchangers (Eddy Current)
- Remote Visual Inspection (RVI)
- Ultrasonic Mapping
- Visual Examination
- Traditional NDE
- Advanced NDE

### RVI

Remote visual inspection (RVI) reveals internal risk factors that might otherwise escape detection, and our RVI is one of our specialties at IIA. Our assortment of RVI cameras include explosion-proof models that can navigate tanks, tubes, vessels and pipes with ease. RVI offers an affordable alternative to disassembly and allows our experts to gather critical information in hazardous environments without risking worker safety.

From access points as small as one-quarter inch in diameter, we can provide internal visual inspections of tanks, tubes, vessels or pipes, including:

- Cracks, Holes or Joint Separation
- Collapsed Pipes
- Blockage or Debris Build Up
- Foreign Object Removal/Retrieval
- General Assessment - Cleanliness, Corrosion, Water
- Feedwater Line Inspections
- ROV to assist in inspection of CST and RWST tanks

### IIA'S PROVEN OUTAGE PROCESS

- Identify exam and maintenance needs for major equipment and assign outage status.
- Develop a detailed outage plan and tracking system to include pre-shutdown testing, repair work and maintenance action items, including predictive maintenance and post-repair testing.
- Identify and plan for materials. We can support multiple unit outages (component movement and refurbishment).
- Assign and schedule work to ensure efficiency and cost-effectiveness.
- Assess daily process and progress to properly and effectively conduct and coordinate work.
- Complete and deliver post-outage documentation, reports, reviews, and data.



# IIA PATENTED, CUTTING-EDGE TECHNOLOGY

We are experts in the most advanced examination techniques available today. And we are always working to develop tooling and the preferred techniques of tomorrow. From ARMUT®'s high-resolution weld images to the AIRIS™ RPV and tank robotic scanner, IIA has developed patented technologies that ensure we can meet any inspection challenge with confidence.

Our patented technologies offer more innovative ways to inspect and retrieve qualified data. And because they require fewer crew members to deploy, they can aid in lowering radiation exposure. Some of our proprietary technology is used in lieu of radiography, which provides a safer testing environment while working with fewer on-site crew members.



## PATENTED TECHNOLOGIES, TOOLING AND TECHNIQUES



### ARMUT®

Our patented ARMUT® system uses QR code film to inspect piping welds and complex geometry, delivering the highest data quality regarding elbow welds.



### AIRIS™

IIA's AIRIS™ is designed to thoroughly and accurately inspect components inside reactor pressure vessels (RPVs), as well as inspection of the CST and RWST.



### PASS®

PASS® offers more reliable data regarding valve operability and predictive maintenance — without costly disassembly.



# ENGINEERING SERVICES

With multidisciplinary engineering expertise, our team can design, inspect, and help maintain critical steel structures, as well as perform compliance and safety inspections, welding engineering, forensic engineering, incident investigations and equipment validation. Our engineering experts can also develop repair procedures for damaged cranes and other construction equipment, engineer lifts for heavy loads, tandem crane lifts or installation into difficult areas and provide load testing and rating of cranes and other lift equipment. Our advanced engineering capabilities include fitness-for-service (FFS) evaluations, finite element analysis (FEA), and Tmin (minimum allowable thickness) calculations for service water piping systems.



## AREAS OF EXPERTISE

Our multidisciplinary team includes engineering professionals with expertise in the following areas:

- Structural/Civil Engineering
- Reverse Engineering
- Mechanical Engineering
- Forensics/Accident Investigation
- Lift Planning & Rigging Engineering
- Welding & Materials



## INDUSTRIAL DESIGN & PLANT ENGINEERING SERVICES

With core competencies in steel and concrete design, our structural engineering experts can deliver cost-effective and high-quality engineering solutions in the following areas and more:

- Overhead Crane Structure Design / Below The Hook Design
- Custom Lift Equipment Design
- Fall Protection System Design
- Heavy Machine Foundations & Bases
- General Structural Steel & Concrete Design

## OVERHEAD CRANE ENGINEERING & INSPECTION SERVICES

IIA provides expert design engineering and consultation services for the planning and layout of industrial overhead cranes of all types (single girder, double girder, top running and under running). We can supply you with data on the static and dynamic forces generated by an overhead crane operation, including the following:

- Maximum Wheel Load
- Side Thrust Load
- Collision Forces
- Overturning Moments (for free-standing overhead crane systems)

## FALL PROTECTION EQUIPMENT SERVICES

From vertical life lines to lanyard arrest anchor points, IIA can help your plant set up proper fall protection measures to prevent employees from falling off elevated workstations, overhead platforms, and any work at heights. Our engineers can also inspect and re-certify your fall arrest system as safe for use after the system has been used to arrest a fall. We can also help you develop rescue procedures.

## WELDING & MATERIALS ENGINEERING

IIA is a trusted provider of welding engineering services to the nuclear industry. Our full menu of services includes:

- Weld Procedure & Data Sheet Development
- Welder Qualification
- Welded Product Design
- Weld Procedure Validation
- Engineered Weld Repairs
- Metallurgical Assessment
- Weld Failure Analysis
- Code/Standard Interpretation
- Welding/Materials Consulting Services

## INCIDENT INVESTIGATIONS

When a lift does not go according to plan, or an equipment failure causes an accident, IIA can help you quickly get to the root cause. Our team is prepared to conduct (or oversee) a thorough, unbiased investigation and provide engineering solutions to ensure equipment will not endanger workers. Along the way, we will help you navigate regulatory requirements for accident reporting and resolution.

## ENGINEERED CRITICAL LIFTS

Engineered critical lifts help to ensure the safe delivery of any heavy load, and IIA has years of experience doing them. Our services include the following:

- Lift Plan & Sequences
- Crane Selection & Final Set Location
- Rigging Studies
- Outrigger/Crawler Soil Capacity Load Studies
- Boom, Load, Rigging & Swing Clearance Checks During Erection & Lifting Phases
- Wind Studies & Other Site-Specific Hazard Assessments
- Pre-Start Visit to Lift Plan Compliance

Our team is also experienced in performing Pre-Start Health & Safety Reviews of industrial lift equipment and storage racking.

## REVERSE ENGINEERING

IIA is one of the original pioneers in using 3D scanning for reverse engineering, geometry recreation and 3D modeling. Our process is highly refined and optimized around many industry-specific challenges. Throughout the reverse engineering process, we use our own Deviation Analysis to ensure that each feature and characteristic is accurate to the scanned part. A Deviation Analysis offers a level of precision that is virtually impossible with manual methods and makes full verification cost-effective for customers.





# ADVANCED ENGINEERING ANALYSES. INTEGRATED SOLUTIONS.

**Our team of licensed professional engineers work closely with our non-destructive examination (NDE) experts to deliver turnkey solutions to clients in the nuclear power industry. When damage or defects are identified, we can help part owners navigate their options to safely extend the life of their equipment.**

IIA understands that repair or replacement may not always be the safest or most economical option. We believe that helping clients maintain existing assets has significant advantages in terms of safety and cost. Our engineering analyses can help plant owners demonstrate to regulatory agencies that a system's functionality and integrity will not decline with continued operation. Our proven methods include fitness-for-service (FFS) evaluations, T<sub>min</sub> (minimum allowable thickness) calculations for Service Water piping systems, finite element analysis (FEA) and other modeling methods. finite element analysis (FEA) and other modeling methods.



- **FITNESS FOR SERVICE (FFS) EVALUATIONS:** Most often, Fitness For Service is used to help plant owners make well-informed, data-driven run/repair/replace decisions after a flaw or damage mechanism has been identified. FFS can also be undertaken proactively to maximize equipment life and enhance inspection and maintenance planning. Our FFS evaluations meet standards outlined in API 579-1/ASME FFS-1.
- **SERVICE WATER SYSTEM EVALUATIONS / T<sub>min</sub> CALCULATIONS:** T<sub>min</sub> values are fundamental to corrosion analyses because they help establish the timing of inspections and replacements. When measured wall thickness does not meet T<sub>min</sub> values due to corrosion, degradation, cracks or flaws, plant owners must take action to address the non-compliance. We understand the nuances of run/repair/replace decisions, and our sophisticated Service Water analyses can help identify the best option for your situation. Our service water solutions meet ASME Boiler and Pressure Vessel Code Section XI requirements.
- **FINITE ELEMENT ANALYSIS (FEA):** Using sophisticated computer modeling software, we build an accurate computer model that simulates how the physical component will respond to extreme conditions, such as heat, vibration, fluid flow, impact and other forces. That allows us to accurately predict how a component will perform when subjected to real-world stresses. When our analysis is complete, you'll receive accurate modeling data that you can compare against specifications, codes and regulatory standards.



# NUCLEAR PLANT SYSTEMS & EQUIPMENT TESTING



## BOLTING: THREADS IN FLANGE (TIF)

Our automated and manually deployable scanner system ultrasonically examines reactor pressure vessel (RPV) flange threads, and easily maneuvers onto and around guide pins or stud hole plugs. Our system accommodates large or small holes and is easily tailored to any flange architecture. Our safe and cost-effective solution does not require vessel head suspension, pool floor area entries, or crane support — only a small operating crew.



## CORE SHROUD

We provide shroud horizontal and vertical weld examinations using our state-of-the-art technology: AIRIS-CS,™ Upper Shroud Scanner (USS) delivery systems, and a BWRVIP-qualified Phased Array UT (PAUT) data acquisition system.



## DISSIMILAR METAL WELDS

We can deliver rapid ultrasonic examination of various pipe weld configurations and bidirectional scanning. Weighing less than seven pounds, our system is ideal for a single operator and its multiple link design and different length scan arms makes it compatible with different pipe sizes (4” and up) and configurations.

## BWR STEAM DRYERS

The Steam Dryer Lifting Rod scanner is a manually deployable X-Y scanner with the ability to conduct vertical scanning and horizontal reference location scanning. The system includes the scanner and the Tomoscan III acquisition system and provides enhanced precision and examination coverage, increased reliability, and easy handling and maintenance.



## HEAT EXCHANGERS

Our IRIS system examines heat exchanger tubes using a rotating ultrasonic beam that results in a helical scan. It works by reflecting from the tube inside diameter (ID) and outside diameter (OD), and the time difference is then used to calculate the thickness.



## METALLURGICAL ANALYSIS

Need to evaluate the quality of metal employed in plant components and equipment? We use metallurgical testing to verify the conformance of metals to your plant's requirements, as well as nuclear industry standards. We are skilled in a variety of advanced examination and analysis methods, from corrosion evaluation to coating thickness analysis and more. In addition, our experts can provide insight into the causes of failures related to material defects, corrosion, residual and applied stresses, thermal exposure and other factors. We also perform failure analyses on polymers, ceramics, composites and other materials that may be found in nuclear facilities.



## PIPING

We provide the highest quality ID and OD piping NDE examinations using versatile automated robotic systems and equipment for general weld examination, corrosion detection, mapping, pitting and wall-loss, PDI and general weld examinations, and screening and monitoring of casings.



## REACTOR PRESSURE VESSELS

PDI-qualified examinations use fully automated state-of-the-art PAUT techniques for PWRs and BWRs for vessel shell welds, , nozzle-to-shell welds, nozzle-to-safe end dissimilar metal (DM) welds, and on safe end-to-pipe, as well as elbow welds.



## STEAM GENERATOR NOZZLES

We developed a first-of-its-kind, remotely deployable Steam Generator Nozzle Examination Tool (SG-NExT) that enables a PDI-qualified phased array ultrasonic (PAUT) examination. SG-NExT minimizes exposure to high radiation fields Examination of these welds from the inside can result in significant dose and dollar savings.



## STORAGE TANKS

Certified in SNT-TC-1A (Level I, II and III) & CP-189 and in multiple NDE methods, including ASNT Level III, IIA uses our proprietary AIRIS TM 21 tool with our state-of-the-art NDE techniques. The AIRIS 21 can deploy via most tank manways.



## TURBINES

By using state-of-the-art dedicated industrial design turbine blade scanners, combined with our custom applications (e.g., 3-D simulations), we are able to provide the optimal PAUT probe delivery system, customized for specific turbine configuration. As a result, inspection solutions are accurate and efficient and can determine the ideal solution for field applications.



## VALVES

We provide diagnostics and inspection services for a variety of valve configurations. Our patented PASS® Visualization software provides an easy, complete solution for Phased Array UT (PAUT) data analysis. We provide a 3D valve model that allows engineers to interpret and translate field data. An accompanying database tracks valve performance during inspection, allowing critical decisions to be made regarding operability and predictive maintenance — without disassembly.

# NUCLEAR POWER PLANT SERVICES



## ASSET MANAGEMENT THROUGH NDE

Asset Management offers a preventative approach to equipment integrity that can reduce costs and enhance safety at your facility. As an expert in the field, IIA can help you develop a customized, code-based plan for routine inspections of plant process equipment. Through effective asset management, IIA can help you avoid costly downtime, ensure regulatory compliance and minimize the risk of safety and environmental hazards.



## CONVENTIONAL RADIOGRAPHY (RT)

Conventional radiography using gamma sources is a prevalent method of non-destructive testing within numerous industries because of its proven accuracy, cost-effectiveness, high level of portability, and extreme diversity.



## COMPUTED RADIOGRAPHY (CR)

Utilizes the smallest, lightest CR system designed specifically for NDT use. It is built for high image quality and improved productivity using direct input from mobile X-ray technicians.



## LIQUID PENETRANT (PT)

A widely applied and low-cost nondestructive examination (NDE) method used to locate surface-breaking defects in all non-porous materials (metals, plastics, or ceramics). PT is used to detect casting, forging and welding surface defects such as hairline cracks, surface porosity, leaks in new products, and fatigue cracks on in-service components.



## FOREIGN OBJECT RETRIEVAL

Foreign objects can lead to shutdowns, contamination, loss of revenue, and in worst-case scenarios, catastrophic failures. We are the industry leader in the use of Remote Visual Inspection (RVI) tools and technology to search out and retrieve foreign objects in your plant. IIA uses intrinsically safe remote visual cameras and crawlers.



## LIFT DEVICE INSPECTIONS

We have decades of experience in providing inspections to ensure the safety of overhead cranes and other aerial and lift devices. Our expertise in non-destructive testing (NDT) allows us to accurately detect surface and subsurface defects without damaging the equipment being tested. As a full-service company, we can also provide engineering solutions related to custom design lift devices, engineered critical lifts, outrigger mat shoring, engineered weld repairs, and load rate/derate cranes.



## MAGNETIC PARTICLE (MT)

A NDE process for detecting surface and slightly subsurface discontinuities in ferromagnetic materials. The process puts a magnetic field into the part to facilitate flaw detection.



## ULTRASONIC THICKNESS TESTING (UTT)

A volumetric NDE method that uses sound waves to propagate through an object to determine its thickness.



## PHASED ARRAY UT (PAUT)

An advanced method of UT used to determine component quality and detect flaws in manufactured materials such as welds. In addition, it can be effectively used for wall thickness measurements in conjunction with corrosion testing. This NDE technique is highly flexible and offers multiple applications.



## REMOTE VISUAL INSPECTION (RVI)

From tanks and tubes to vessels and pipes, remote visual inspection (RVI) reveals internal risk factors that might otherwise escape detection. IIA's state-of-the-art cameras, including explosion-proof models, deliver crystal-clear images to help you make critical decisions. No disassembly or downtime required!



## RVI EQUIPMENT RENTAL

IIA offers a vast selection of rental equipment — the best options in the industry for ensuring safe and reliable inspection results. Every piece of equipment is thoroughly inspected to ensure superior performance before it is shipped.



## VISUAL EXAMINATION

Our highly skilled team members that will inspect for indications such as cracks, corrosion, erosion, damage, and structural integrity in DA tanks, steam turbines, fans, pressure vessels, high energy piping, stack/tower, and more.



## WELD PROCEDURE & QUALIFICATION (CWI)

Qualification to either American Welding Society (AWS) or American Society of Mechanical Engineers (ASME) standards through Certified Welding Inspectors (CWI), with mobile capabilities for your convenience.



## WELDER TESTING

Qualification to either AWS or ASME standards through CWIs, with mobile capabilities for your convenience.



# IIA: YOUR ONE-STOP SHOP

With decades of experience, IIA provides engineering, inspection and lab services across North America to help plant owners and manufacturers safely extend the life of their assets. Clients in a wide range of industries trust IIA for unmatched technical expertise and quick project turnaround to keep their systems running safely, smoothly and reliably.

As a full-service inspection company, here's what you can expect from IIA:



- **Industrial Inspections:** IIA's expert inspectors are available 24/7 to support planned or unplanned inspection needs. Our toolkit includes both traditional and advanced NDE methods; intrinsically safe, explosion-proof cameras for Remote Visual Inspection, and proprietary methods like PASS® for non-intrusive valve testing. Our team includes professional engineers who work closely with our NDE experts to deliver turnkey solutions that ensure safety, performance, and compliance.



- **Laboratory Services:** IIA has grown to become one of the largest and most trusted providers of lab services in North America and beyond. Serving a spectrum of industries, our testing capabilities include metallurgical, non-destructive, dimensional, mechanical, EMC/EMI, consumer goods, calibration, environmental and chemical analysis.



- **Lifting Services:** We have decades of experience providing on-site inspections and certifications to ensure the safety of overhead and truck-mounted cranes, airline ground support equipment (GSE), bucket and fire trucks, and other aerial and lift devices. IIA is one of the only companies in the U.S. that offers on-site, live line tool testing for the electrical power industry.



- **Engineering Services:** IIA offers engineering solutions to solve quality and design challenges in a wide variety of industries and applications. Our multidisciplinary engineering expertise includes structural/civil, mechanical, reverse engineering, crane accident investigation, lift planning and engineering, welding and materials and electrical.

# OUR NATIONAL FOOTPRINT

IIA has an extensive national footprint and an ever-expanding global presence in the industrial sector. We are a leader in this market within the United States and Canada.





***Making the World Safer***



**SCAN ME**

**979-399-7151**

**[industrial-ia.com/iia-industrial-inspections/nuclear-service/](http://industrial-ia.com/iia-industrial-inspections/nuclear-service/)**

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