Rayan Petro Azmoon

COMPANY PROFILE

RPA (Rayan Petro Azmoon)

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About

RPA (Rayan Petro Azmoon) is a subsidiary of IRICO (Iranian Inspection Company), founded in 2006 as an integrity support specialist providing advanced and innovative inspection services and solutions for the integrity and lifetime assessment.

Our continued growth comes from an experienced team of professionals (e.g., managers, coordinators, inspectors) who have an absolute commitment to providing our clients with exceptional service.

In today's highly competitive global marketplace, it is also essential that we focus on the critical drivers of our future growth. Such drivers are, but not limited to, as follows: To create value through innovation, to extend our global reach with local focus, to execute with excellence in everything we do.

Policy

Top Management of the RPA shall demonstrate that:

RPA is committed to provide Transparent, Neutral, Independent, and Competent Management System Certification Services which reveal Veritas among the Business, Government & Society and add value to its client’s product & services to the ultimate customer satisfaction.

The Management System of RPA is Established, Maintain and continually improve in accordance with the requirements of ISO/IEC 17020 and to meet all statutory & regulatory requirements in its entire process of services to meet accreditation requirement.

RPA will ensure that all possible “conflict of interest” situations arising out of its activities are identified and resolved timely and effectively.

RPA shall create & maintain an environment where each employee contributes to all aspects of our business process and shall strive for continual improvement to meet with customer satisfaction.

Quality Objectives

RPA will encourage skills from diverse sector and develop these skills to improve the industries by providing them continuous training.

RPA shall strive towards meeting and exceeding customer expectations and achieve continual improvement by providing them timely services which add value to its client's product & services to the ultimate customer satisfaction.

RPA aims to enhance the acceptance of international standards by endorsing awareness about its benefit among the Business, Government & Society.

Vision

We aim to be the most competitive and the most productive service organization in the world. Our core competencies in inspection services are being continuously improved to be best-in-class. They are at the heart of what we are. Our chosen markets will be solely determined by our ability to be the most competitive and to consistently deliver unequalled service to our customers all over the world.

Mission

“To establish as credible and leading global certification body providing inspection & training services which add value to governance i.e. Business, Government & Society.”

Principles for inspiring confidence include:

1. Transparency
2. Impartiality
3. Responsibility
4. Competency
5. Openness
6. Confidentiality
7. Customer Focus
8. Responsiveness to complaints

Values

We seek to be epitomized by our passion, integrity, entrepreneurialism and our innovative spirit, as we continually strive to fulfill our vision. These values guide us in all that we do and are the bedrock upon which our organization is built.

Services

1- Source Inspection and Quality Surveillance

1-1- Vendor QA/QC Audit & Mill Surveillance

A vendor QA/QC audit is intended to identify quality and procedural gaps that may lead to equipment failures or poor performance. The RPA auditor reviews product traceability, shipping and receiving procedures, personnel training records, inspection, assembly, and function test procedures, and equipment storage and handling. Reviews of work in progress are often conducted to verify that the vendor's employees are following their documented procedures for inspection, assembly, and testing of their equipment. The result is an understanding of the vendor's quality management system and identification of any issues. We can continue to work with the vendor, on behalf of our customer, to correct any issues and mitigate risk of equipment failure. RPA can conduct an audit to meet your operational objectives and provide specific recommendations to drive quality improvement.

The quality assurance and control processes commence well before manufacturing process begins. We first provides a combination of Project Managers, Engineers and QA/QC Technicians to review the Process Control Points (PCPs) in order to identify witness, monitoring, and documentation review points for all stages of the manufacturing process. These are established in accordance with applicable client requirements in a pre-production meeting where the client's concerns and choices are discussed and applicable standards agreed upon.

Check lists are then developed for review of the documentation, manufacturing processes and receiving inspections. An Engineer reviews material specifications and establishes accept/reject criteria that are used to monitor manufacturing and inspection of all components.

Our Project Manager makes initial visits to evaluate systems specific to the client's order, meet with manufacturing personnel and discuss RPA's involvement in line with the PCPs. These processes are then monitored by the Technicians who will witness, review and document manufacturing and mill inspection and prepare weekly status reports for submittal to the client.

This closely monitored process is shared by the Project Manager in regular client meetings throughout the manufacturing process to ensure that the client's requirements are met and the equipment delivered is fit for purpose.

1-2- Quality Management System Audit of Manufacturing & Service Supply Organizations

RPA provides quality management system audit for organizations that manufacture products or provide manufacturing-related processes under a product specification and service supply organizations for use in the petroleum and natural gas industry based on API-Q1 & API-Q2 specification.

This Audit provides the requirements of a quality management system for an organization to demonstrate its ability to consistently provide reliable products and manufacturing-related processes that meet customer and legal requirements. We assess the organization's ability to meet customer, statutory, and regulatory requirements applicable to the product and the organization's own requirements.

For an organization to function effectively, it has to determine and manage numerous linked activities. An activity that transforms inputs into outputs can be considered a process. Process activities include determination of needs throughout the organization, provision of resources and product realization, identification of the proper sequence or order in a series of activities, monitoring and measuring the effectiveness of the activities performed, and applying changes or corrections to those activities as needed.

1-3- Source Inspection and Quality Surveillance of Fixed Equipment

We provide quality surveillance of materials, equipment and fabrications being supplied for use in the oil, petrochemical and gas Industry, including upstream, midstream and downstream segments.

RPA provides a systematic approach to risk-based source inspection in order to provide confidence that mechanical rotating equipment being purchased meet the minimum requirements as specified in the project documents and contractual agreements.

The purpose of source inspection is simply to verify that the suppliers/vendors quality process is working as it should and to verify that certain vital steps in the inspection and test plan (ITP) have been satisfactorily accomplished prior to manufacturing completion and/or shipping.

This department of RPA focuses primarily on Pressure Containing and Structural Equipment including but not limited to: vessels, columns/towers, heat exchangers, piping, valves, pressure relief devices, tubulars and associated structural fabrications.

Like most business processes, the Source Inspection work process follows the PDCA circular process. The “Planning” part of source inspection involves the source inspection management systems, source inspection project plan and the Inspection and Test Plan (ITP). The “Doing” part involves implementing the ITP, participating in scheduled source inspection work process events, filing nonconformance reports and source inspection report writing. The “Checking” part involves looking back at all the source inspection activities that occurred in the Planning and Doing segments to see what went well and what should be improved based on the results of that look-back. And finally the “Act” part involves implementing all the needed improvements in the “Planning and Doing” process before they are implemented on the next source inspection project.

1-4- Source Inspection and Quality Surveillance of Rotating Equipment

We provide quality surveillance of materials, equipment and fabrications being supplied for use in the oil, petrochemical and gas Industry, including upstream, midstream and downstream segments.

RPA provides a systematic approach to risk-based source inspection in order to provide confidence that mechanical rotating equipment being purchased meet the minimum requirements as specified in the project documents and contractual agreements.

The purpose of source inspection is simply to verify that the suppliers/vendors quality process is working as it should and to verify that certain vital steps in the inspection and test plan (ITP) have been satisfactorily accomplished prior to manufacturing completion and/or shipping.

This department of RPA focuses primarily on Mechanical Rotating Equipment including but not limited to: pumps, gears, compressors, turbines, etc. and associated appurtenances.

Like most business processes, the Source Inspection work process follows the PDCA circular process. The “Planning” part of source inspection involves the source inspection management systems, source inspection project plan and the Inspection and Test Plan (ITP). The “Doing” part involves implementing the ITP, participating in scheduled source inspection work process events, filing nonconformance reports and source inspection report writing. The “Checking” part involves looking back at all the source inspection activities that occurred in the Planning and Doing segments to see what went well and what should be improved based on the results of that look-back. And finally the “Act” part involves implementing all the needed improvements in the “Planning and Doing” process before they are implemented on the next source inspection project.

2- Plant Inspection

2-1- In-Service Inspection of Pressure Vessels

RPA provides the in-service inspection activities for pressure vessels and the pressure-relieving devices protecting these vessels. Our services apply to all hydrocarbon and chemical process vessels that have been placed in service. it could also be applied to process vessels in other industries at owner/user discretion.

The intent of this service is the in-service inspection and providing condition-monitoring program that is needed to determine the integrity of pressure vessels and pressure-relieving devices. The program provides reasonably accurate and timely assessments to determine if any changes in the condition of pressure equipment could compromise continued safe operation. The owner/users shall respond to any inspection results that require corrective actions to assure the continued safe operation of pressure vessels and pressure-relieving devices.

All pressure vessels used for Exploration and Production service [e.g. drilling, producing, gathering, transporting, lease processing, and treating liquid petroleum, natural gas, and associated salt water (brine)] may be inspected under the alternative rules.

For inspection planning and engineering assessment of in-service pressure vessels, API 510 inspection code has been used which recognizes the applicability of Fitness-For-Service (FFS) assessment and risk-based inspection (RBI) methodologies.

2-2- In-Service Inspection of Piping Systems

RPA provides the in-service inspection process for metallic and fiberglass-reinforced plastic (FRP) piping systems and their associated pressure relieving devices that have been placed in service. Our services apply to all hydrocarbon and chemical

process piping that have been placed in service. it could also be applied to piping systems in other industries and other services at owner/user discretion.

The intent of this service is the in-service inspection and providing condition-monitoring program as well as repair guidance that is needed to determine the on-going integrity of piping systems. The program provide reasonably accurate and timely assessments to determine if any changes in the condition of piping could possibly compromise continued safe operation. The owner/users shall respond to any inspection results that require corrective actions to assure the continued integrity of piping consistent with appropriate risk analysis.

For inspection planning and engineering assessment of in-service piping systems, API 570 inspection code has been used which recognizes the Fitness-For-Service concepts for evaluating in-service damage of pressure containing piping components and RBI concepts for determining inspection intervals or due dates and strategies.

2-3- In-Service Inspection of Storage Tanks

RPA offers the in-service inspection for maintaining the integrity of steel storage tanks built to API 650 and its predecessor API 12C after they have been placed in service. However, this service may apply to any steel tank constructed in accordance with a tank specification based on consideration of specific construction and operating details at owner/user discretion.

For inspection planning and engineering assessment of in-service storage tanks, EEMUA 159 and API 653 standard has been used which recognizes the Fitness-For-Service concepts for evaluating in-service degradation of pressure containing components.

2-4- Tube & Heat Exchanger Inspection

RPA could offer a variety of techniques for Tube and Heat Exchanger Inspection including Remote Field, IRIS Ultrasound and Near Field Testing.

Eddy Current Inspection (High Speed for Condensers)

Eddy Current Testing is a non-contact method used to inspect non ferromagnetic tubing. This technique is suitable for detecting and sizing metal discontinuities such as corrosion, erosion, wear, pitting, baffle cuts, wall loss, and cracks in nonferrous materials.

Two coils are excited with an electrical current, producing a magnetic field around them. The magnetic fields penetrate the tube material and generate opposing alternating currents in the material. These currents are called eddy currents. Any defects that change the eddy current flow also change the impedance of the coils in the probe. These changes in the impedance of the coils are measured and used to detect defects in the tube.

Magnetic Flux Leakage

Magnetic Flux Leakage (MFL) is a fast inspection technique, suitable for measuring wall loss and detecting sharp defects such as pitting, grooving, and circumferential cracks. MFL is effective for aluminum-finned carbon steel tubes, because the magnetic field is almost completely unaffected by the presence of such fins.

Remote Field Testing

Remote Field Testing (RFT) is being used to successfully inspect ferromagnetic tubing such as carbon steel or ferrite stainless steel. This technology offers good sensitivity when detecting and measuring volumetric defects resulting from erosion, corrosion, wear, and baffle cuts.

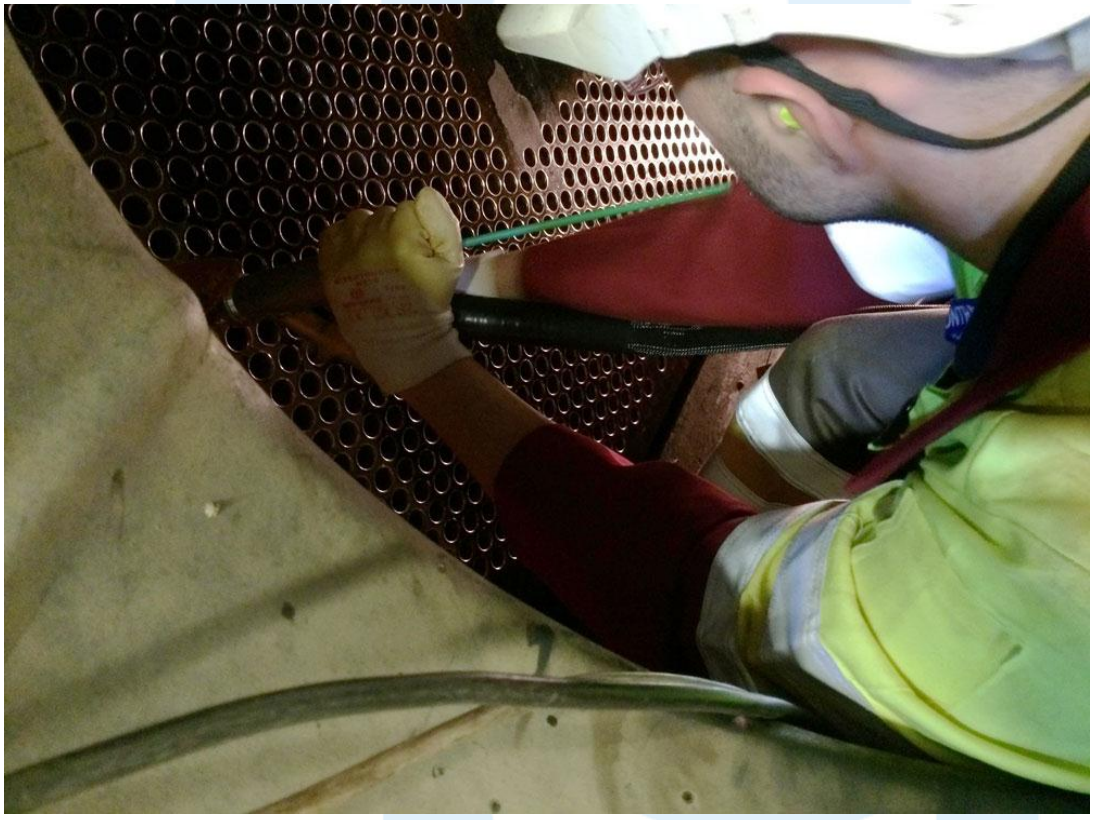
IRIS Ultrasound

The Ultrasonic IRIS option is used to inspect a wide range of materials, including ferrous, nonferrous, and non-metallic tubing. This technique detects and sizes wall loss resulting from corrosion, erosion, wear, pitting, cracking, and baffle cuts.

Near Field Testing (NFT)

Near Field Testing (NFT) technology is a rapid and inexpensive solution intended specifically for fin-fan carbon-steel tubing inspection. This new technology relies on a simple driver-pickup eddy current probe design providing very simple signal analysis.

NFT is specifically suited to the detection of internal corrosion, erosion, or pitting on the inside of carbon steel tubing. The NFT probes measure lift-off or “fill factor,” and convert it to amplitude-based signals (no phase analysis). Because the eddy current penetration is limited to the inner surface of the tube, NFT probes are not affected by the fin geometry on the outside of the tubes.



3- Plant Integrity Management

3-1- Fitness-For-Service Assessment (FFS)

FFS assessments are quantitative engineering evaluations that are performed to demonstrate the structural integrity of an in-service component that may contain a flaw or damage. We provide services for conducting FFS assessments based on API 579-1/ASME FFS-1 using methodologies specifically prepared for pressurized equipment. The service could be used to make run-repair-replace decisions to help determine if pressurized equipment containing flaws that have been identified by inspection can continue to operate safely for some period of time. These FFS assessments are currently recognized and referenced by the API Codes and Standards (510, 570, & 653), and by NB-23 as suitable means for evaluating the structural integrity of pressure vessels, piping systems and storage tanks where inspection has revealed degradation and flaws in the equipment.

The assessment service may also be applied to pressure containing equipment constructed to other recognized codes and standards, including international and internal corporate standards.

This service has broad application since the assessment procedures are based on allowable stress methods and plastic collapse loads for non-crack-like flaws, and the Failure Assessment Diagram (FAD) Approach for crack-like flaws.

The Fitness-For-Service assessment cover both the present integrity of the component given a current state of damage and the projected remaining life. Assessment techniques are included to evaluate flaws including: general and localized corrosion, widespread and localized pitting, blisters and hydrogen damage, weld misalignment and shell distortions, crack-like flaws including environmental cracking, lamination, dents and gouges, and remaining life assessment procedures for components operating in the creep range. In addition, evaluation techniques are provided for condition assessment of equipment including resistance to brittle fracture, long-term creep damage, and fire damage.

In addition, both qualitative and quantitative methods for establishing remaining life and in-service margins for continued operation of equipment could be provided in regards to future operating conditions and environmental compatibility.

3-2- Risk-Based Inspection (RBI)

RBI is synonymous with risk-prioritized inspection, risk-informed inspection and with inspection planning using risk based methods. Inspection planning is a systematic process that begins with identification of facilities or equipment and culminates in an inspection plan. Both the probability of failure and the consequence of failure should be evaluated by considering all credible damage mechanisms that could be expected to affect the facilities or equipment. In addition, failure scenarios based on each credible damage mechanism should be developed and considered.

The output of the inspection planning process conducted should be an inspection plan for each equipment item analyzed that includes:

a) inspection methods that should be used,

b) extent of inspection (percent of total area to be examined or specific locations),

c) inspection interval or next inspection date (timing),

d) other risk mitigation activities,

e) the residual level of risk after inspection and other mitigation actions have been implemented.

The RBI plan service provided by RPA, combined with a comprehensive set of integrity operating windows for each process unit and a rigorous MOC (management of change) program could provide the basis for sound management of the integrity of fixed equipment in the refining and petrochemical process industry.

The primary work products of the RBI assessment and management approach are plans that address ways to manage risks on an equipment level. These equipment plans highlight risks from a safety/health/environment perspective and/or from an economic standpoint. It also includes cost-effective actions along with a projected risk mitigation.

The RBI plans also identify equipment that does not require inspection or some other form of mitigation because of the acceptable level of risk associated with the equipment's current operation. In this way, inspection and maintenance activities can be focused and more cost effective. This often results in a significant reduction in the amount of inspection data that is collected. This focus on a smaller set of data should result in more accurate information. In some cases, in addition to risk reductions and process safety improvements, RBI plans may result in cost reductions.

Utilization of RBI provides a vehicle for continuously improving the inspection of facilities and systematically reducing the risk associated with pressure boundary failures. As new data (such as inspection results and industry experiences with similar processes) becomes available or when changes occur (e.g. operating conditions), reassessment of the RBI program can be made that will provide a refreshed view of the risks. Risk management plans should then be adjusted appropriately.

RBI offers the added advantage of identifying gaps or shortcomings in the effectiveness of commercially available inspection technologies and applications. In cases where technology cannot adequately and/or cost-effectively mitigate risks, other risk mitigation approaches can be implemented. RBI should serve to guide the direction of inspection technology development, and hopefully promote a faster and broader deployment of emerging inspection technologies as well as proven inspection technologies that may be available but are underutilized.

RBI is a risk assessment and management tool that addresses an area of risk management not completely addressed in other organizational risk management

efforts such as process hazards analyses (PHA), integrity operating windows (IOWs) or reliability centered maintenance (RCM). Integration of these risk management efforts, including RBI, is key to the success of a risk management program.

RBI produces inspection and maintenance plans for equipment that identify the actions that should be taken to provide reliable and safe operation. The RBI effort can provide input into an organization's annual planning and budgeting that define the staffing and funds required to maintain equipment operation at acceptable levels of performance and risk.

RBI needs to be integrated with a management system for defining and maintaining IOWs as well as a robust management of change (MOC) process as a basis for managing and controlling damage mechanisms in fixed equipment.

3-3- Pressure Equipment Integrity Incident Investigation

Investigation is a vital element for learning from unexpected discoveries or incidents (e.g. finding significantly more corrosion damage or other forms of deterioration than expected) and can be used in a continuous improvement process. Investigating and determining the causes of unexpected leaks, equipment degradation, or near misses associated with pressure equipment may be used to improve mechanical integrity programs and management systems for maintaining Pressure Equipment Integrity (PEI), such as design and construction procedures, maintenance and inspection practices, and operating practices.

The investigation principles and concepts of PEI are specifically targeted for application to process pressure equipment in the refining and petrochemical industry but could be applied to other equipment at the discretion of the owner/user.

Significant mechanical integrity incidents are rarely the result of one isolated issue; there are almost always less severe precursors to a major failure. These precursors are frequently called near misses when they are found. It`s important to recognize

these precursor occurrences and promotes investigating them to determine the immediate, contributing, and root causes. If these precursor occurrences are uncovered, investigated, and the contributing and root causes are resolved, then major catastrophic failures of pressure equipment could be minimized or prevented.

4- Pipeline Integrity Management

Managing the integrity of a gas pipeline system is the primary goal of every pipeline system operator. Operators want to continue providing safe and reliable delivery of natural gas to their customers without adverse effects on employees, the public, customers, or the environment. Incident-free operation has been and continues to be the gas pipeline industry's goal. The use of ASME B31.8S as a supplement to the ASME B31.8 Code will allow pipeline operators to move closer to that goal.

RPA offers a comprehensive, systematic, and integrated integrity management program provides the means to improve the safety of pipeline systems. Such an integrity management program provides the information for an operator to effectively allocate resources for appropriate prevention, detection, and mitigation activities that will result in improved safety and a reduction in the number of incidents. RPA provide a process to assess and mitigate risks in order to reduce both the likelihood and consequences of incidents. It covers both a prescriptive-based and a performance-based integrity management program. The prescriptive process, when followed explicitly, will provide all the inspection, prevention, detection, and mitigation activities necessary to produce a satisfactory integrity management program.

5- Corrosion Assessment

Assessment of corrosion in the field is complex because of the wide variety of applications, process conditions, and fluid phases that exist in industrial plants where corrosion occurs. A wide range of direct and indirect measurement techniques is available, but each technique has its strengths and weaknesses. In some applications certain techniques cannot be used. Some techniques can be used online, while others are done off-line. Commonly more than one technique is used so the weaknesses of one are compensated for by the strengths of another. In other cases, a combination of different techniques can be synergistic, such as process sampling along with detection of corrosion upset.

RPA offers the various techniques for corrosion assessment with respect to their benefits and limitations across the wide spectrum of industries in which they are used.

6- OCTG Inspection

RPA offers a comprehensive tubular inspection service, covering required inspection for each level of inspection and testing of used drill stem elements including drill pipe body, tool joints, rotary-shouldered connections, drill collar, HWDP and the ends of drill stem elements that make up with them based on API 7G-2 and TH Hill DS-1 Standard. Drill Stem Elements Inspection services include but not limited to:

- Full Length API Drift
- Visual Thread Inspection
- Thread gauging
- End Area Inspections
- Electromagnetic Inspection (EMI)
- Ultrasonic Inspection On End Area
- Full Length Magnetic Particle Examination
- Dimensional Inspection

Compliance

RPA is committed to professional excellence. As a company, it believes that it's contractual and business obligations can only be fulfilled through uncompromising dedication to its clients' requirements and by adopting the highest professional and ethical standards in all it does. This constitutes our business promise.

For this reason, RPA has implemented a business ethics and compliance program throughout its network of offices. At the heart of the program is the business ethics and compliance code. The code's principles and rules apply to all Group activities, and include standards for technical and professional conduct in the following areas:

- Integrity
- Conflicts of interest
- Confidentiality
- Prevention of bribery
- Ethical marketing and fair competition

Most importantly, we place business ethics and compliance above all commercial considerations. To ensure the effectiveness of the implementation of our code, we subject our business ethics and compliance program to an annual independent assessment conducted by the company's external auditors.

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Projects

1) Technical Inspection Services for Siraf Methanol Plant
2) Technical Inspection Services for Marjab Methanol Plant
3) Technical Inspection Services for Butia Pelletizing Plant
4) Technical Inspection Services for CDQ Zarand Plant
5) RBI implementation in MTBE Plant of Dubai-GAS (DUGAS)
6) RBI implementation in Bokhari & Golrchi Plant of Pakistan
7) RBI implementation in Shahid Hashemi Gas Refinery Plant of Iran
8) RBI implementation in Pars Petrochemical Plant of Iran
9) RBI implementation in Sarkhoon & Qeshm Plant of Iran
10) Pipeline Inspection in area #3 of gas transmission in IRAN
11) RBI implementation in Tangari & TURK Plant of Pakistan
12) RBI implementation in BandarAbbass Plant of Iran

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