

American Petroleum Institute

ISO 9001 and API QMS Standards

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AGENDA

- 1. API – Who We Are**
- 2. Standardization in the Oil and Natural Gas Industry**
- 3. Driving Value: Standardized Management Systems**
- 4. Pursuing QMS Certification with API**
- 5. Training & Personnel Programs**

API Members

600+ companies involved in all aspects of the oil and gas industry



Upstream

Midstream

Downstream

Service & Supply

API'S GLOBAL INDUSTRY SERVICES DIVISION

Serving the Oil & Gas Industry Globally

- 100+ Employees
- 145 Auditors
- 200 Training Programs
- 56,000 Personnel Certifications in 128 Countries
- 5,000 Company Certifications in 80+ Countries
- 50,000+ Licensed Products



Offices in Washington D.C., Houston, Beijing, Dubai, Singapore, Rio de Janeiro

Mission: Provide world-class services that enable the oil & natural gas industry to operate efficiently, safely, reliably, profitably and sustainably

API standards and recommended practices are incorporated by reference into both federal and state oil and gas regulations and they are the most widely-cited petroleum industry standards by international regulators

700+ STANDARDS



3,800 Citations

In state regulations



650 Citations

by U.S. federal government organizations:
U.S. Coast Guard, U.S. EPA, FTC, BSEE,
OSHA, and PHMSA



**440+ International
References**

by China, Indonesia, Malaysia, Singapore,
Thailand, Vietnam, India, Bahrain, Kuwait,
Oman, Qatar, Saudi Arabia, UAE,
Argentina, Brazil, Colombia, and Ecuador.

Our goal is zero incidents.



That's why:

Safety & Quality are core values for API members.

- ✓ Standards Development
- ✓ Training
- ✓ Advocacy – Effective & Efficient Policy
- ✓ Continued Improvement of Operations
- ✓ Quality and Safe E&P Lifecycle
- ✓ Advancements in Technology
- ✓ Innovative, Collaborative Approaches



Standardization in the Oil and Natural Gas Industry: **Quality Management Systems**





Why are standards important?

Why are Standards Important?



For Businesses

Drive safety, efficiency, reliability



For the Global Economy

Facilitate trade, create predictable and transparent global business environment



For Consumers

Advance environment, health, safety, and sustainability performance

WHO USES QUALITY STANDARDS?

Quality standards are used by organizations to help drive business and operational objectives



Customer satisfaction



Ensure products and services are safe and meet quality specs



Reduction of waste and NPT



Regulatory compliance



Meet business or government requirements to use a specific standard as condition of doing business



- **ISO 9000** was first published in 1987
- The most recent versions of the standard, **ISO 9000:2015** and **ISO 9001:2015**, were published in September 2015
- **ISO 9001:2015** is a **Quality Management System** where companies can pursue a **Certification**
- At least one million companies and organizations in 170+ countries are certified to **ISO 9001**.



ISO 9001 SCOPE

Specifies requirements for a quality management system when an organization:

- ✓ Needs to demonstrate its ability to consistently provide products and services that meet customer and applicable statutory and regulatory requirements
- ✓ Aims to enhance customer satisfaction through effective application of the QMS, including processes for improvement of the system and assurance of conformity to customer and applicable statutory and regulatory requirements

Requirements are generic and applicable to any organization, regardless of type or size, or the products and services provided.



ISO 9001:2015 and Principles of a Quality Management System

Customer Focus

- Understand the needs of existing and future customers
- Align organizational objectives with customer needs and expectations
- Meet customer requirements
- Measure customer satisfaction
- Manage customer relationships
- Aim to exceed customer expectations



Customer & Stakeholders Focus: ISO 9001: 2015

- **Suppliers**
- **Internal staff**
- **Members**
- **Customers including shareholders**
- **Regulators**
- **Local and regional communities**

IDENTIFYING STAKEHOLDERS

Considerations:

- ✓ To whom does the organization have legal obligations?
- ✓ Who might be positively or negatively affected by the organization's decisions or activities?
- ✓ Who is likely to express concerns about the decisions and activities of the organization?
- ✓ Who has been involved in the past when similar concerns needed to be addressed?
- ✓ Who can help the organization address specific impacts?
- ✓ Who can affect the organization's ability to meet its responsibilities?
- ✓ Who would be disadvantaged if excluded from the engagement?
- ✓ Who in the value chain is affected?

Leadership

- Establish a vision
- Setting goals
- Model organizational values
- Establish trust
- Employee empowerment
- Recognize employee contributions



Engagement of People

- Ensure that people's abilities are used and valued
- Make people accountable
- Enable participation in continual improvement
- Evaluate individual performance
- Enable learning and knowledge sharing
- Enable open discussion of problems and constraints



Improvement

- Improve organizational performance and capabilities
- Align improvement activities
- Empower people to make improvements
- Measure improvement consistently
- Correcting, preventing or reducing undesired effects
- Improving the performance and effectiveness of the quality management system.
- Celebrate improvements



Evidence-based Decision Making

- Ensure the accessibility of accurate and reliable data
- Use appropriate methods to analyze data
- Make decisions based on analysis
- Balance data analysis with practical experience



Relationship Management

- Identify and select suppliers to manage costs, optimize resources, and create value
- Establish relationships considering both the short and long term
- Share expertise, resources, information, and plans with partners
- Collaborate on improvement and development activities
- Recognize supplier successes



ISO employs the Process Approach

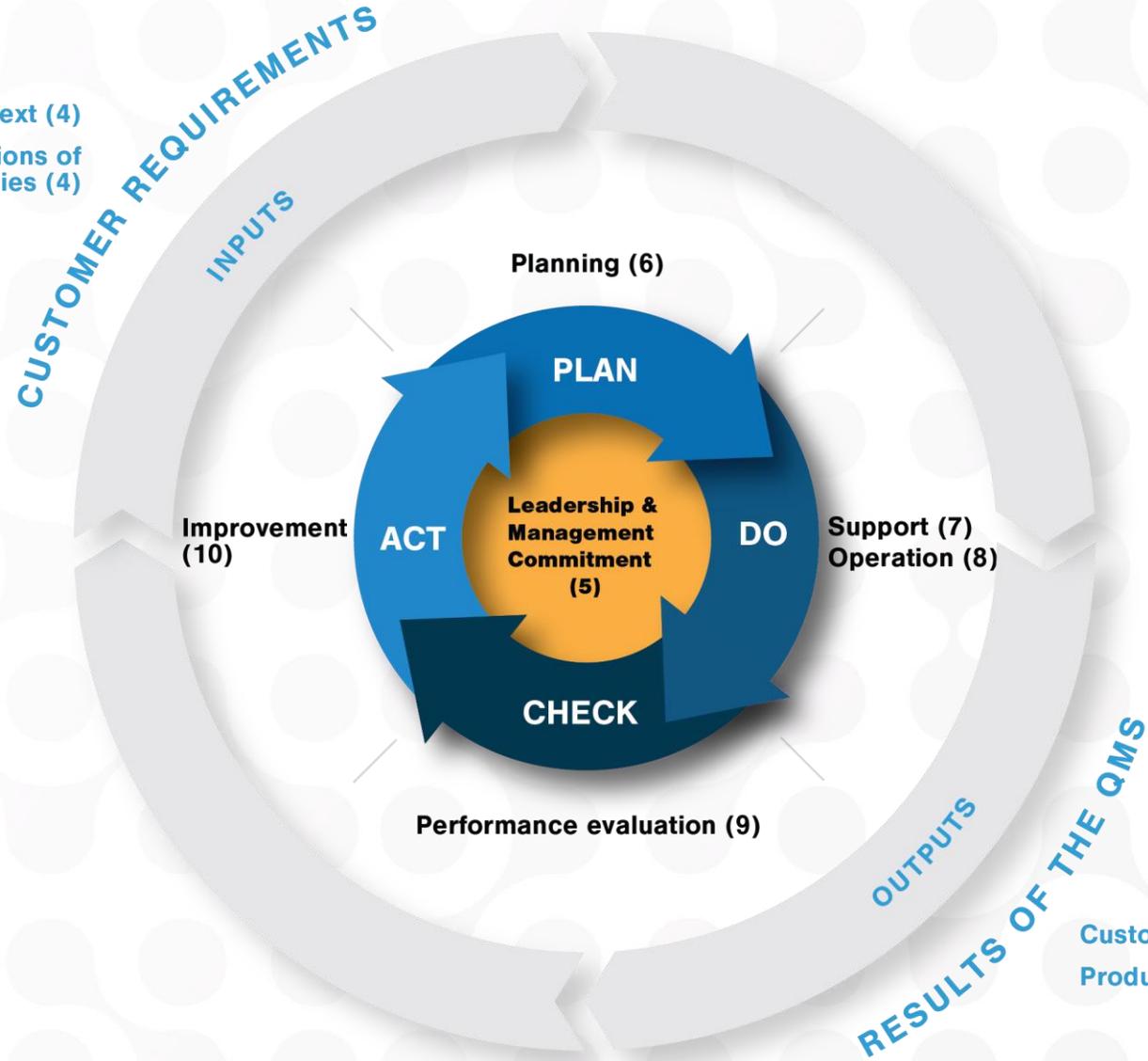
- Manage activities as processes
- Measure the capability of activities
- Identify linkages between activities
- Prioritize improvement opportunities
- Deploy resources effectively

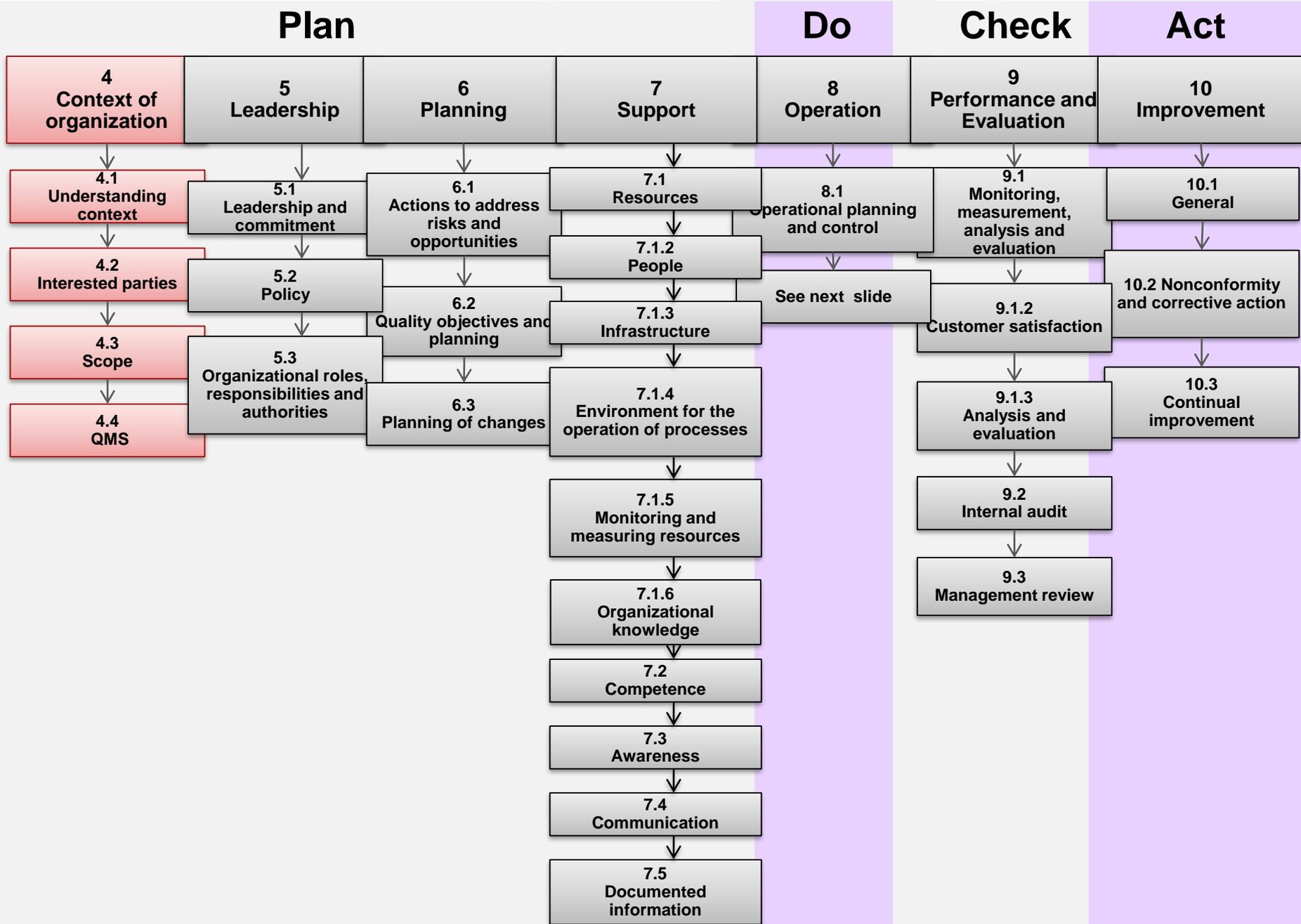


Quality Management System (4)

Plan
Do
Check
Act Cycle

Organization and its context (4)
Needs and expectations of relevant interested parties (4)

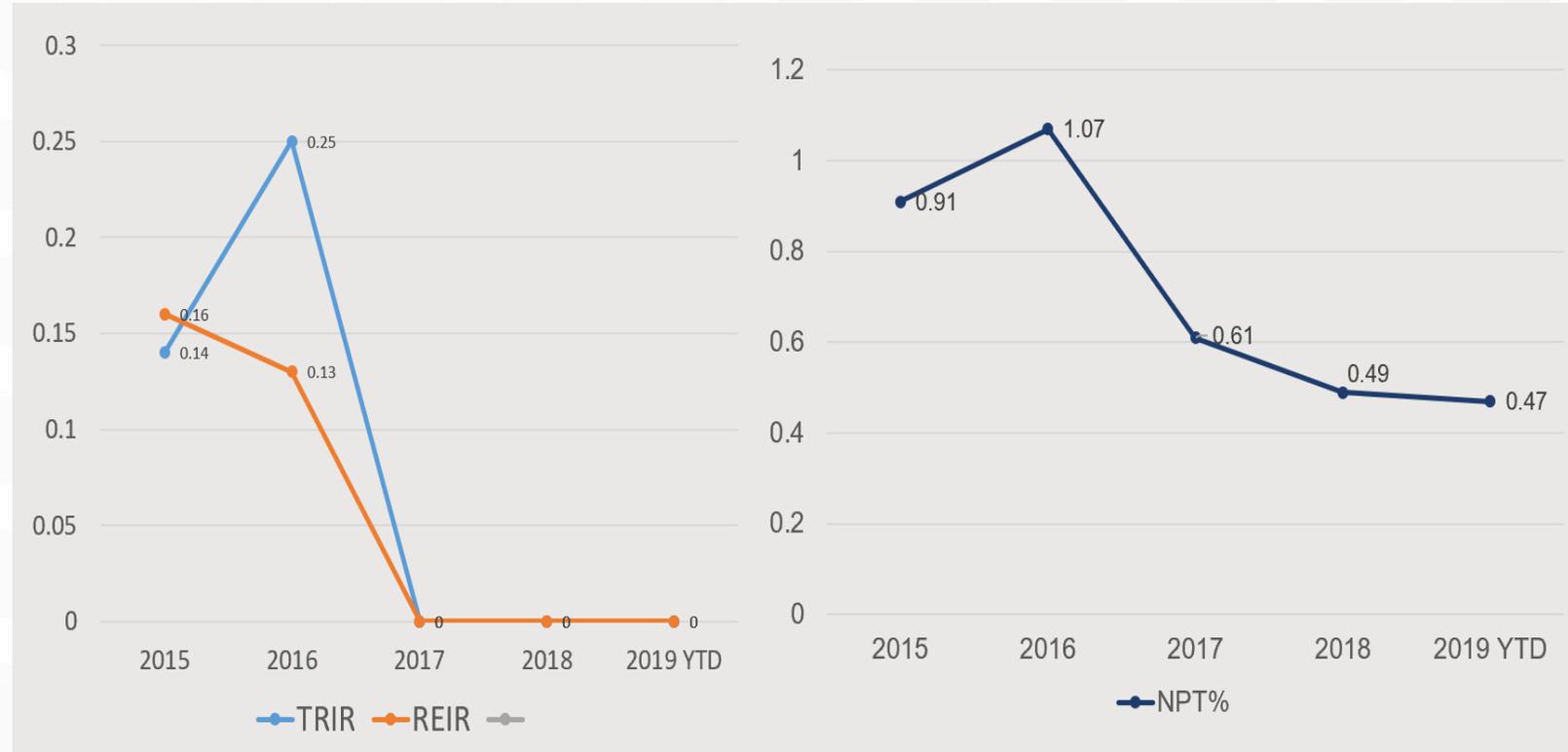




Value behind Quality Management Standards

Non-Productive Time (NPT)

- Failures, unreliability, breakdowns, inefficiencies, plans gone wrong
- Problems with drilling operations interrupt the critical path activity
- Time wasted = Money wasted



Value behind Quality Management Standards

Companies have reported the following:

- Improved overall **Service Quality Performance**
- Reduce NPT and COPQ (cost of poor quality)
- Increasing Job Efficiency
- Achieved and Sustained Goals to **ZERO for incident rates**
- Improved leading indicators
- Enhanced **Safety culture**
- Competent and **reliable workforce**

**“Is ISO 9001 or any QMS
Certification worth it?”**

Benefits for the Customer and Employees

Customer

- Provides assurance that you're a reliable, high quality vendor
- Customer satisfaction is a prime focus of ISO 9001
- Customer feedback can be quickly and efficiently acted upon
- Pre-emptive planning means issues are addressed before they have a chance to cause problems for your customers

Employee

- Jobs are more secure thanks to improved business performance
- Employees report higher job satisfaction and workplace happiness due to their roles (what to do, and how to do it) being clearly defined and streamlined
- Training, onboarding, and educational resources are more readily available thanks to improved planning and organizational structuring
- Implementation of a QMS can foster a company culture of continuous improvement
- Employees become more engaged and feel more responsible for the processes they are using

Getting Certified

- Build and Implement a quality management system according to the most recent ISO 9001 standard or API Quality Management System Standard
- Have an initial audit performed by a Certified Body (CB or Registrar)
- Maintain the Quality Management System
- Certifications are good for three years
- Once certified annual audits are performed
- QMS Certifications like ISO 9001 are good for three years

QMS



Investment

- Internal Organizational Training
- Know your processes, products and services
- Develop, build and implement a QMS
- Getting Certified
- Maintaining the QMS
 - Resources
 - Internal Audits and Management Reviews
- Maintaining the Certification with the Registrar of Choice
 - Application Fees
 - Audit Costs
 - Annual Fees



Investment

- Using a registrar's services
- Internal Resources Expenses
- Outsourcing Help
- Factors Influencing ISO 9001 Certification Cost
 - Organization's size and complexity
 - Implementation costs
 - Certification fees
 - Post-certification costs

Planning/Prep Process

Step 1: Preparation

Step 2: Documentation

Step 3: Implementation

Step 4: Internal Audit

Step 5: Certification



Step 1: Preparation

- Appoint the ISO 9001 Lead Person
- Training and Awareness
- Top Management
- Employees
- Plan your project

Step 2: Documentation

Which Documents Are Required by ISO 9001?

- Quality policy
- Procedures
- Scope of the quality management system
- Process map (flowchart)
- Quality objectives
- Work instructions
- Forms

Step 3: Implementation

- One step at a time
- Introduce any new requirements
- Work Instructions
- Process Improvement
- Training (critical)



Step 4: Internal Audit



Step 5: Certification

- Selecting the Registrar
- Onsite Audits
- How to Prepare for the Certification Audit
 - Make staff relaxed
 - Document Control
 - Handling Q&A from Auditors
- Reaping the Marketing Benefits
- Maintaining Certification



Recap on ISO 9001:2015 QMS Certification

- ISO 9001 is an international standard for a quality management system (QMS).
- Individuals cannot get ISO 9001 certified; rather, organizations or companies get certified
- ISO 9001 Certified Lead Auditor, which enables them to audit other companies
- Size of the organization does not matter. It could be 1 person or 100,000
- ISO 9001 is a general standard for quality management – it doesn't matter what industry you're in
- ISO 9001 is a process-focused standard, as opposed to a product-focused standard



API QMS Standards

QMS STANDARDS IN THE O&G SUPPLY CHAIN

Industry's Response to Industry's Needs



API Q1, 9TH Edition

Quality Management For Manufacturing Organizations for the Petroleum And Natural Gas Industry



API Monogram Program

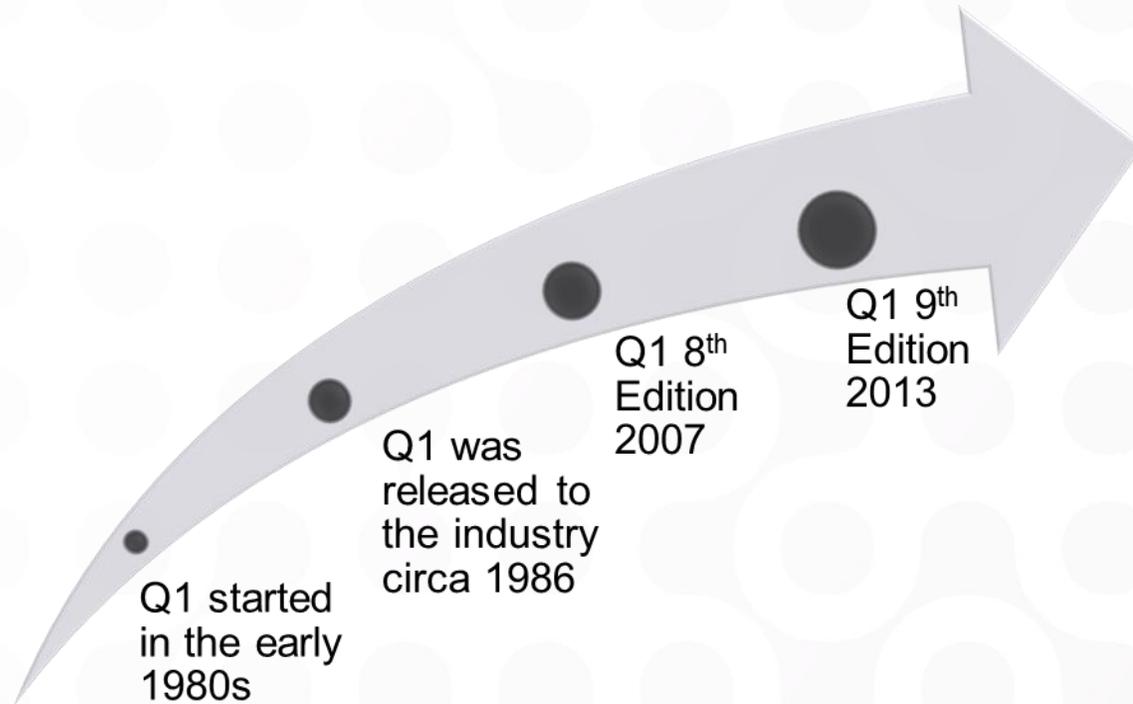
Voluntary licensing program that facilitates the consistent manufacturing of product that conforms to applicable API Specifications. Licensed manufacturers are given the authority to apply the API Monogram registered mark to equipment that meets the requirements.



API Q2

Quality Management For Service Supply Organizations For The Petroleum And Natural Gas Industries

API Q1, 9th EDITION



Used in the industry for over 25 years.

- Quality management system requirements for **manufacturers** of oil and gas industry equipment
- Process requirements to consistently manufacture conforming products that **meet customer, product specification and industry requirements**
- Includes **design, purchasing**, contract review, manufacturing/production, inspection and testing, and QMS controls
- Addresses **all ISO 9001 requirements** plus additional requirements
- Applies to **products within the Monogram Program** and other oil and gas industry products manufactured to meet customer and industry requirements

API Q1, 9th EDITION REQUIREMENTS

**Specification for Quality Management
System Requirements for
Manufacturing Organizations for the
Petroleum and Natural Gas Industry**

API SPECIFICATION Q1
NINTH EDITION, JUNE 2013
EFFECTIVE DATE: JUNE 1, 2014



- **SECTION 4**

- Quality Management System Requirements

- **SECTION 5**

- Product Realization Requirements

- **SECTION 6**

- Quality Management System Monitoring, Measurement, Analysis and Improvement

- **Annex A**

- Use of API Monogram by Licensees

API Q1 COMPONENTS

Competency/Training
of Personnel

Risk Assessment and
Management

Criticality of Purchases

Contingency Planning

Product Release

Product Quality Plan

Preventive
Maintenance

Control of Special
Processes

Management of
Change

API Q1, 9th EDITION

Some key differences between API Spec Q1 9th Edition and ISO 9001:

- Formalizing employee competency and training of personnel
- Reinforcing risk assessment and risk management throughout the standard
- Contingency planning
- Controlling the supply chain
- Preventative maintenance
- Validation of designs
- Management of change

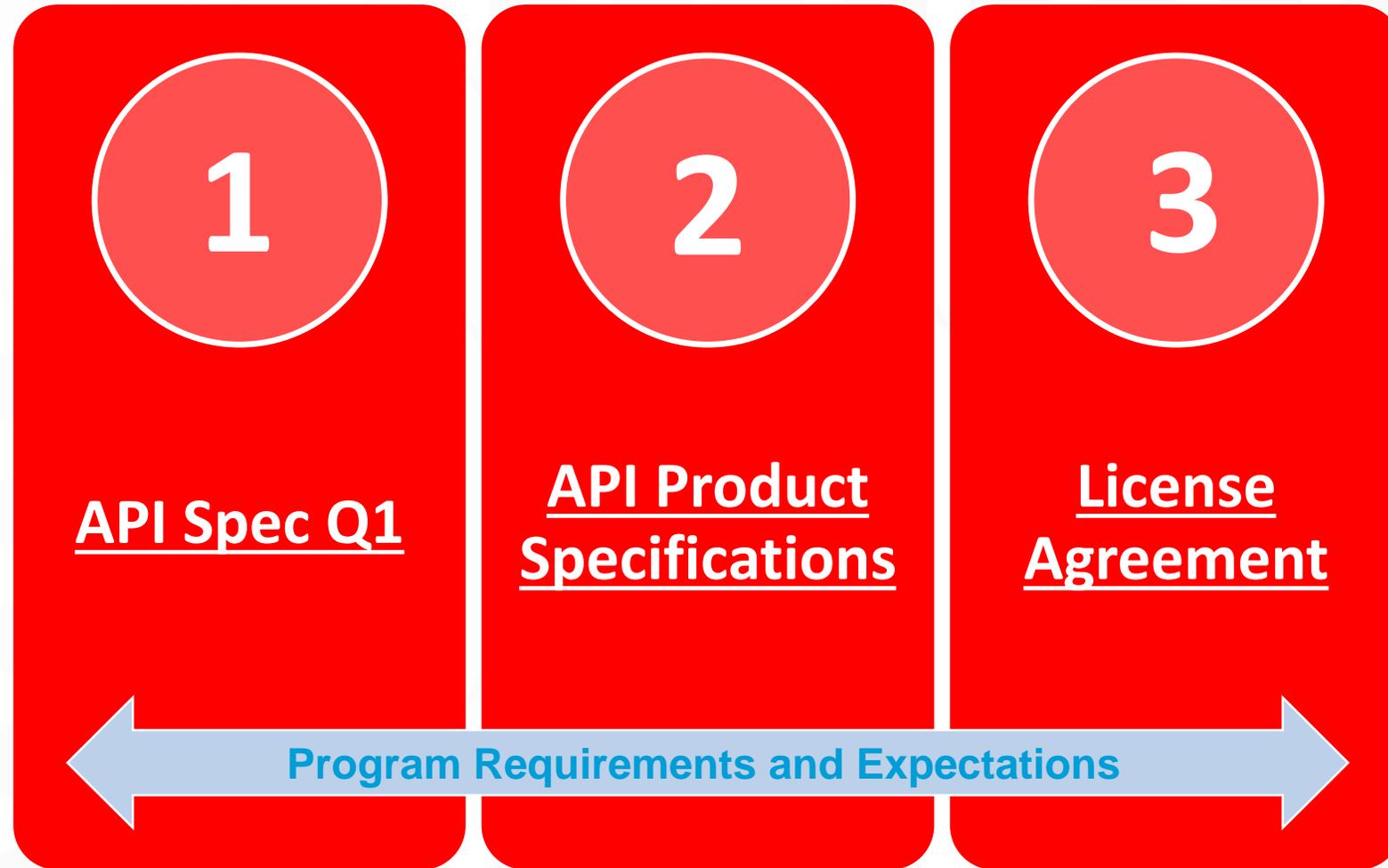
API Monogram Program

Facilitate the availability of **safe, interchangeable equipment and materials** for general use in the petroleum drilling and production industry

Established in October 1924



API Q1, 9th EDITION



API Monogram Program

API Monogram Program



- More than 4,600 businesses in 80 countries
- These companies, and the products they manufacture, meet industry-written standards and globally-accepted management system specifications
- Licensed manufacturers are given the authority to apply the mark to equipment that meets API product specification requirements



API Monogram Licensing

[API 2B - Fabrication of Structural Steel Pipe](#)

Steel Pipe

[API 2C - Offshore Pedestal-Mounted Cranes](#)

Offshore Cranes

[API 2F - Mooring Chain](#)

Flash Welded Chain; Forged Connecting Links

[API 2H - Carbon Manganese Steel Plate for Offshore Structures](#)

Grade 42 Steel Plate; Grade 50 Steel Plate;

[API 2MT1 - Carbon Manganese Steel Plate with Improved Toughness for Offshore Structures](#)

Steel Plate, Grade 2MT1

[API 2W - Steel Plates for Offshore Structures, Produced by Thermo-Mechanical Control Processing \(TMCP\)](#)

Grade 50 Steel Plate; Grade 60 Steel Plate; Grade 70 Steel Plate; Grade 80 Steel Plate

[API 2Y - Steel Plates, Quenched-and-Tempered, for Offshore Structures](#)

Grade 50 Steel Plate; Grade 60 Steel Plate

[API 4F - Drilling and Well Servicing Structures](#)

Derricks; Masts; Crown Block Assemblies; Substructures

[API 5B - Threading, Gauging, and Thread Inspection of Casing, Tubing and Line Pipe Threads](#)

Thread Gauges

[API 5CRA - Corrosion Resistant Alloy Seamless Tubes for Use as Casing, Tubing and Coupling Stock](#)

Manufacturer of Casing, Tubing or Coupling Stock at PSL 1; Manufacturer of Casing, Tubing or Coupling Stock at PSL 2, at Groups 1, 2, 3, 4

[API 5CT - Casing and Tubing](#)

Manufacturer of Casing or Tubing Plain End; Manufacturer of Casing or Tubing Threaded and Coupled; Manufacturer of Casing or Tubing Pup Joints; Manufacturer of Casing or Tubing Couplings; Manufacturer of Accessories; Processor of Casing or Tubing Plain End; Processor of Casing or Tubing Threaded and Coupled; Threader, at Groups 1, 2, 3, 4

[API 5DP - Drill Pipe](#)

Drill Pipe Body; Tool Joints; Drill Pipe (Assembly)

[API 5L - Line Pipe](#)

Manufacturer of Line Pipe - Plain End at PSL 1; Manufacturer of Line Pipe - Plain End at PSL 2; Manufacturer of Line Pipe - Threaded and Coupled; Manufacturer of Line Pipe Couplings; Processor of Line Pipe - Plain End at PSL 1; Processor of Line Pipe - Plain End at PSL 2; Processor of Line Pipe - Threaded and Coupled; Threader

[API 5LC - CRA Line Pipe](#)

Manufacturer of Alloy Pipe; Processor of Alloy Pipe

[API 5LCP - Coiled Line Pipe](#)

Coiled Line Pipe

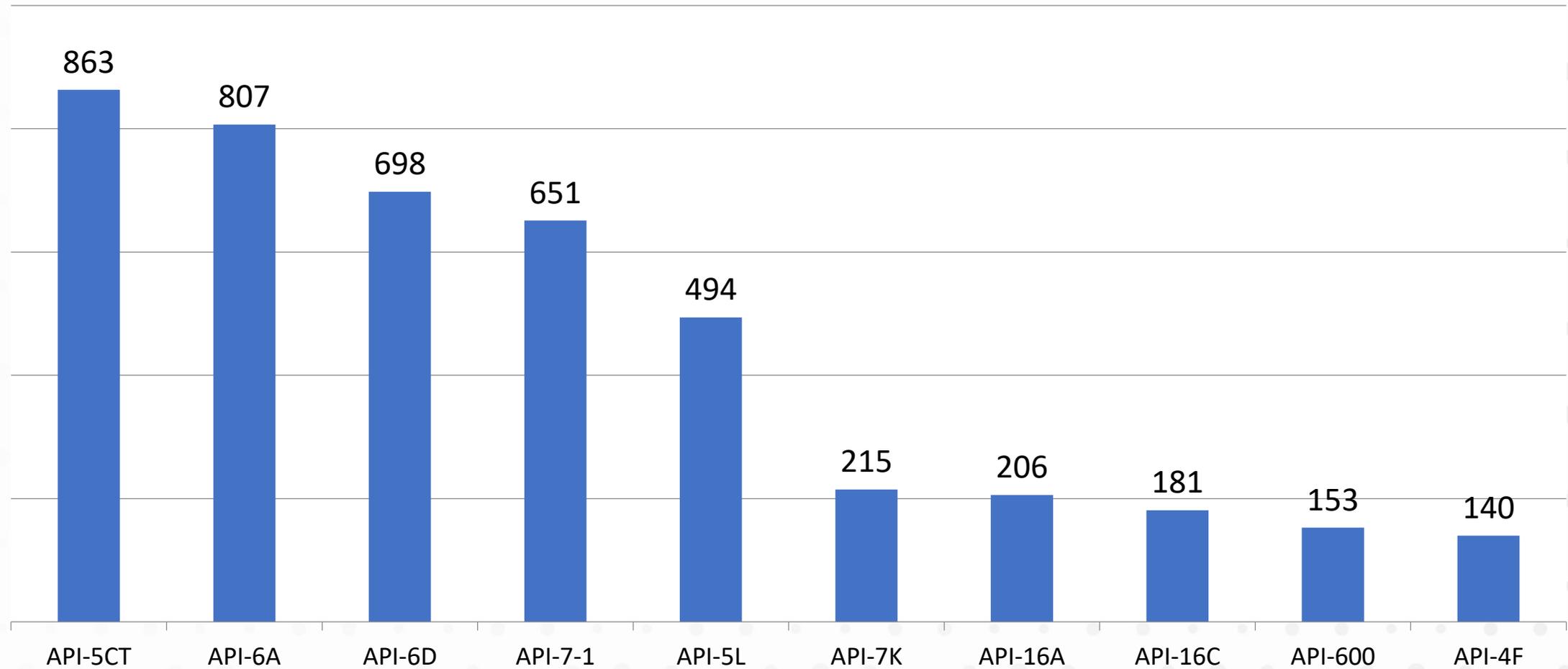
[API 5LD - CRA Clad or Lined Steel Pipe](#)

Manufacturer of Clad Steel Pipe; Manufacturer of Lined Steel Pipe; Processor of Clad Steel Pipe; Processor of Lined Steel Pipe

[API 5ST - Coiled Tubing](#)

Manufacturer of Coiled Tubing

Top Monogram Specifications



Management System Certifications

MS Standard	Active Certificates
API Spec Q1	1655
ISO 9001:2015	1157
API Spec Q2	144

API Q2, 1st EDITION

API Spec Q2

QMS requirements for service supply organizations for the petroleum, and natural gas industries.

API SPEC Q2 SCOPE



QMS requirements for service supply organizations for the petroleum and natural gas industries



Execution of upstream services during exploration, development and production in the oil and gas industry.



Oil and gas well construction, intervention, production, and abandonment.



Activities associated with well servicing, equipment repair/maintenance, and inspection activities.

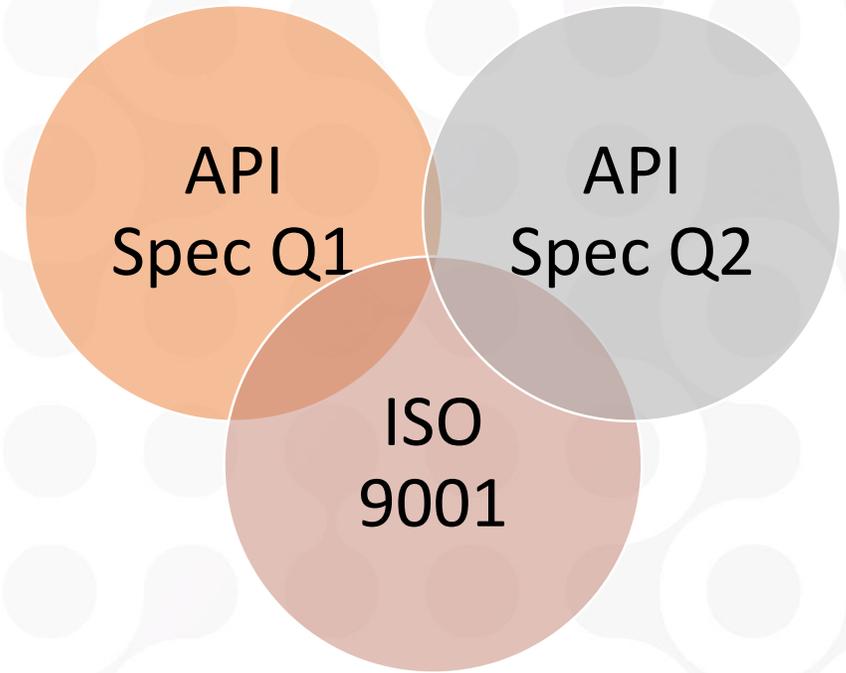
API SPEC Q2 SCOPE

- Drilling Services
- Well Completion
- Pressure Control & Testing
- Subsea Testing Services
- Production Enhancement
- Wireline & Perforating
- Cementing & Drilling Fluids
- Hydraulic Fracturing
- Well Intervention
- Well Logging



ISO 9001, API Spec Q1, API Spec Q2

- Complement each other
- Requirements have the same intent but worded differently
- Each has requirements that are not in the others
- API certifies manufacturers and service providers to all three standards



QMS Certifications

- Only organizations can get certified
- Certifications cover the organizations' QMS
- Focus on specific facilities or departments
- Individuals cannot become ISO 9001:2015 Certified
- Certified Lead Auditors, or Registrars





PURSUIING QMS CERTIFICATIONS

ISO 9001, API Q1, Q2

Selecting API as your Registrar

Costs – all costs are in US Currency

- ISO 9001
 - Application fee: \$2,000
 - Annual fee: \$2,000
- API Q1
 - Application fee: \$3,000
 - Annual fee: \$3,000
- API Q2
 - Application Fee: \$3,000
 - Annual fee: \$3,000
- Audit Costs: The annual fee does not include Audit Costs. The organization pays the audit costs based on the contract rate of our auditor(s) and the number of audit days at the facility plus travel time and review time performed on-site. The organization also pays any related auditor(s) expenses, including airfare, taxi, rental car, or private car, plus accommodations, meals, parking, telephone, etc. Audit typically cost \$1,500 per auditor per day. We will endeavor to use a local auditor(s), in an effort to minimize travel costs; however, circumstances may dictate the assignment of a non-local auditor(s) at API's discretion which may result in the actual auditor costs per day exceeding the range stated above.

PURSUING A QMS CERTIFICATION WITH API



AMERICAN PETROLEUM INSTITUTE
myCerts



myCerts Portal Login

We have changed the way to access myCerts. To get started, go to myAPI.

[Go to myAPI](#)

Dear myCerts user,
If you should experience problems when submitting applications in MyCerts, please send an email to certification@api.org. Thank you.

FAQs

[How do I purchase an authorized copy of an API publication?](#)

[How do I renew my certification?](#)

[How long will it take for my audit to be reviewed?](#)

[How many accounts can I have?](#)

[How many facilities can I create under one account?](#)

[I am one of the contacts for multiple facilities. Do I have access to all of them?](#)

[If I have multiple facilities under my account, can I add a contact to one facility and not the others?](#)

[What if I don't know the email address that API has for me?](#)

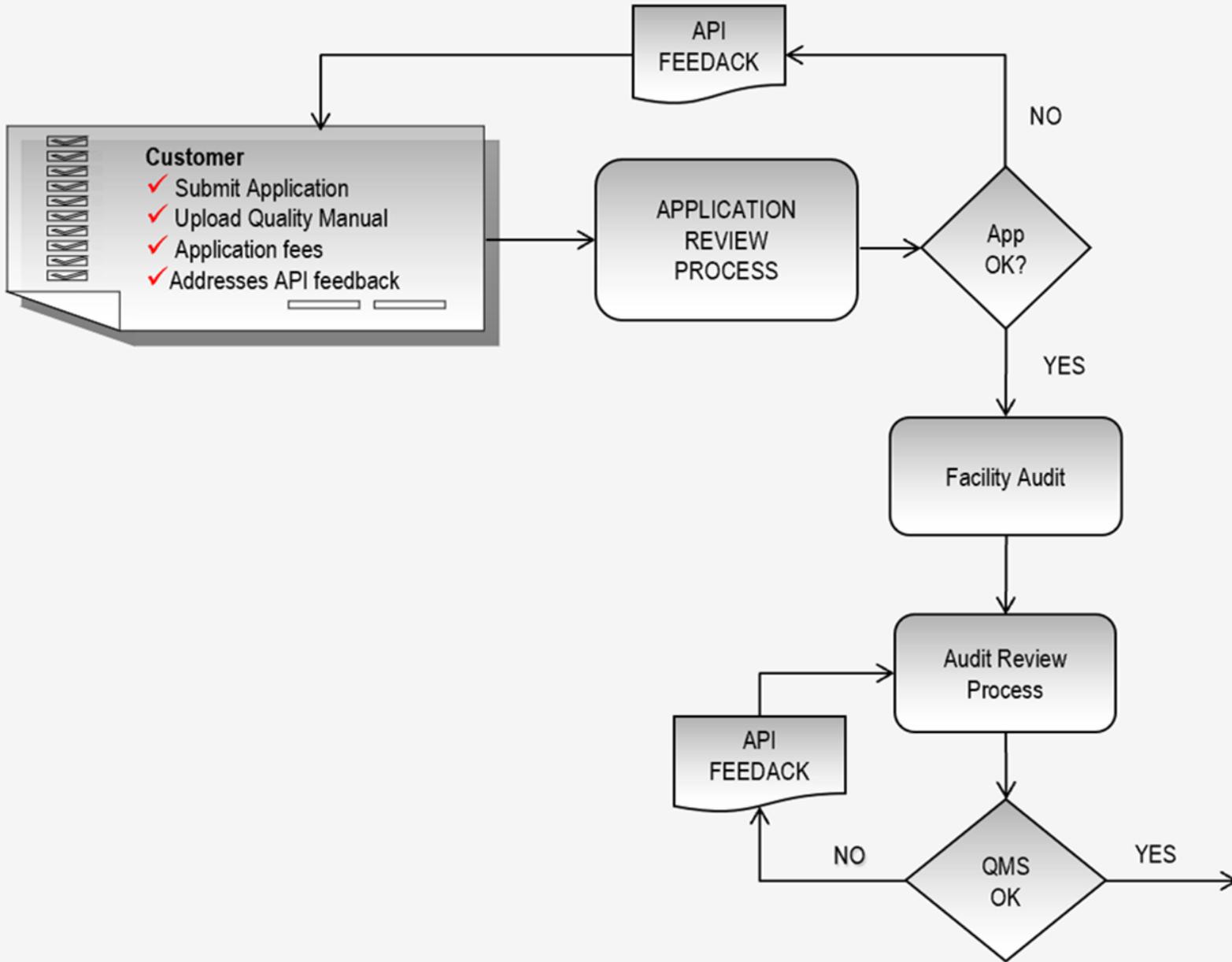
[Where can I go if I need help using myCerts?](#)

[Why do I need to register or create an account?](#)

CERTIFICATION REQUIREMENTS

- Implemented QMS meeting API and applicable Spec Requirements
- Have applicable specs available at organization (Standards are available for purchase from API)
- Submit application and upload Quality Manual
- Onsite Audits (Yearly)
- Closure of Audits
- Maintain QMS
- Surveillance and Recertification Audits

CERTIFICATION PROCESS



API INDIVIDUAL CERTIFICATIONS



Individual Certification Programs (ICP)

Program Summary: Provides the petroleum and petrochemical industries with an independent manner by which to evaluate knowledge & experience of technical & inspection personnel.

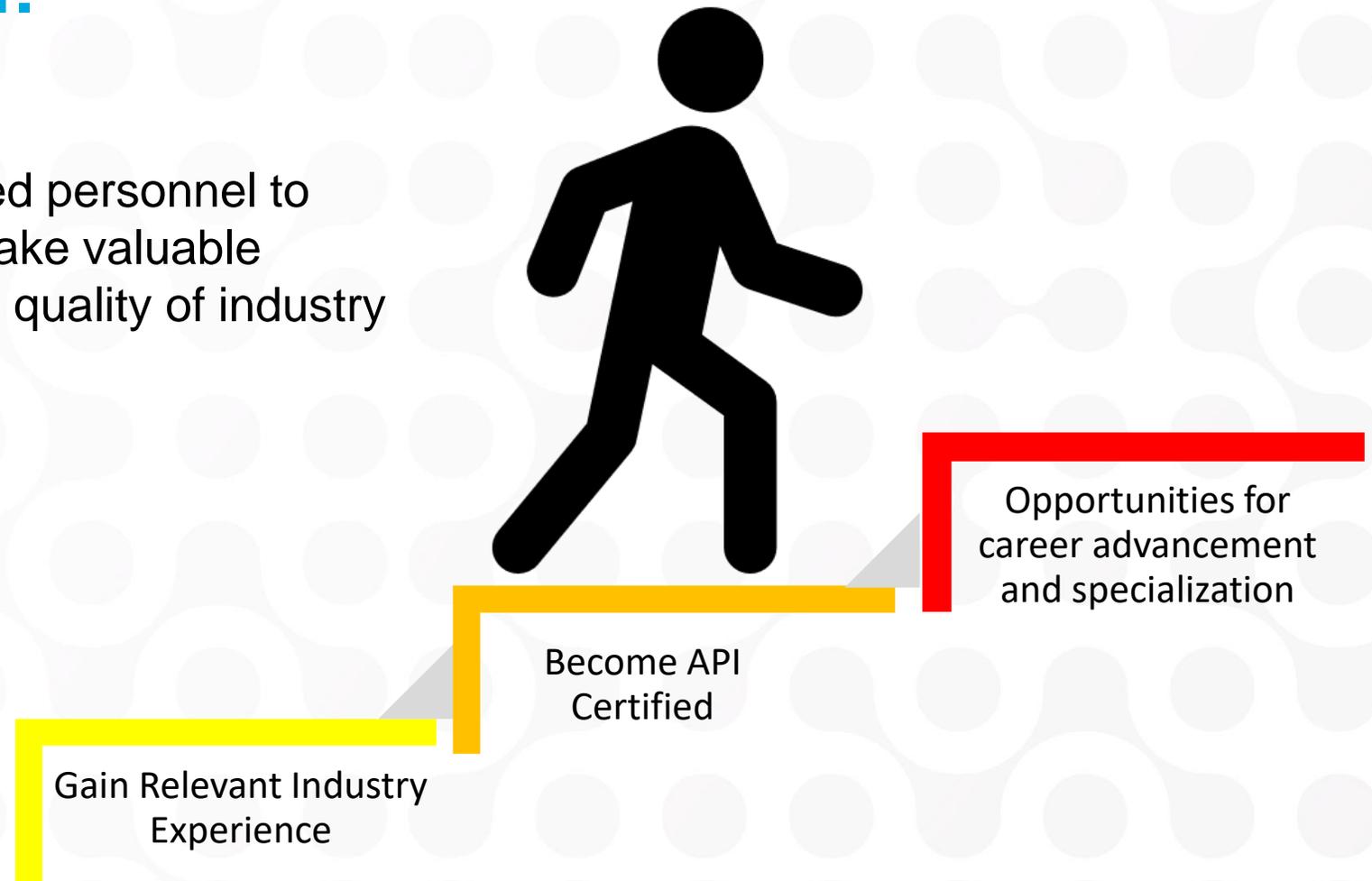


- Consists of pre-qualification and testing
- Based on API industry standards
- 23 programs spanning various segments of the Oil and Gas Industry
- Three-year certification term
- May require additional quiz as part of recertification every 6 years (2 certification terms)

Individual Certification Programs (ICP)

Investing in yourself.

API certifications allow qualified personnel to establish a career path and make valuable contributions to the safety and quality of industry operations.



Individual Certification Programs (ICP) Current Programs



5 Basic Programs:

- API 510 – Pressure Vessels Inspectors
- API 570 – In-Service Piping Inspectors
- API 653 – Aboveground Storage Tank Inspectors
- SI Suite – Source Inspection for Fixed, Rotating and Electrical Equipment
- 1169 – New Construction Pipeline Inspectors

5 Practical Exams for Qualification of UT Examiners

- QUTE – Detection
- QUSE – Sizing
- QUPA – Phased Array
- QUSE–PA – Crack Sizing
- QUTE–TM – Thickness Measurement

5 Specialized Programs:

- API TES – Tank Entry Supervisors
- API 936 – Refractory Personnel
- API 571 – Corrosion and Materials
- API 577 – Welding Inspection and Metallurgy
- API 580 – Risk Based Inspection (RBI)

Quality Auditors Programs – 6 certification products on three levels of proficiency

- API Spec Q1 – Internal Auditor
- API Spec Q1 – Auditor
- API Spec Q1 – Lead Auditor
- API Spec Q2 – Internal Auditor
- API Spec Q2 – Auditor
- API Spec Q2 – Lead Auditor

From the American Petroleum
Institute

Thank you

