

Career Pathway Spotlight

Discover a Career in Petroleum & Refinery Operations



Discover your career in energy!

Petroleum & Refinery Operations professionals keep the oil and gas supply chain moving — processing crude into the fuels and products the world runs on, and coordinating the pipelines, scheduling, and storage systems that deliver them.

Petroleum Refining & Processing

Inside refineries, Operations Technicians monitor and control the distillation towers, heat exchangers, and catalytic units that transform crude oil into fuels, lubricants, and chemical feedstocks, keeping complex processes running safely and at peak efficiency around the clock.

Pipeline Scheduling & Logistics

Pipeline Scheduling Coordinators manage the complex logistics of moving petroleum products through transmission systems, balancing shipper nominations, system capacity, and delivery commitments to ensure products reach refineries, terminals, and customers on time and in spec.

Storage & Terminal Operations

Across bulk liquid terminals and storage facilities, these professionals manage tank inventories, coordinate product transfers, and ensure the right products are available in the right volumes at the right time while meeting strict safety, environmental, and custody transfer requirements.

CAREER PATH

Start with:

- » A high school diploma or GED

Get Educated:

- » An associate degree or vocational certificate in:
 - Process Technology or Chemical Process Technology
 - Industrial Instrumentation & Controls
 - Energy Technology or Petroleum Technology
- » A 2- or 4-year degree in Chemical Engineering Technology or a related field for advanced roles
- » Military service (e.g., Navy Machinist's Mate, Army 91B Wheeled Vehicle Mechanic)

Specialize With:

Knowledge in:

- » Distillation
- » Instrumentation
- » Storage
- » Capacity planning and optimization
- » Regulatory compliance and reporting

OCCUPATIONAL SKILLS

- » Reading and interpreting process flow diagrams and Piping and Instrumentation Diagrams
- » Monitoring and adjusting process variables (temperature, pressure, flow rate)
- » Understanding of petroleum chemistry and refining processes
- » Communication and coordination across production, logistics, and scheduling teams
- » Attention to safety, process hazards, and environmental regulations

BENEFITS

These energy industry careers offer:

- » Roles across the full petroleum supply chain — refining, midstream, and terminals
- » Upward and continued career growth
- » Work-life balance: your work stays at work
- » Opportunities for specialization in process, safety, or scheduling
- » Competitive pay and comprehensive benefits packages
- » Stable employment with strong demand across the energy sector
- » Critical, technically engaging work with real-world impact

What Might You Do In Petroleum & Refinery Operations?

ENTRY LEVEL

1-4 years

What you will do:

- » Monitor process units and record gauge readings, flow rates, and operational data
- » Assist with equipment startups, shutdowns, and routine operations under supervision
- » Follow standard operating procedures and process safety protocols
- » Support scheduling teams with data entry, tracking, and basic logistics coordination
- » Report equipment issues or process deviations to supervisors
- » Maintain cleanliness and orderliness of process units and control rooms

MID- CAREER

5-8 years

- » Independently operate and control refinery process units or pipeline scheduling systems
- » Troubleshoot process deviations, equipment malfunctions, and scheduling conflicts
- » Develop and update scheduling plans to optimize throughput and meet delivery commitments
- » Conduct preventive maintenance checks and coordinate with maintenance teams
- » Train and mentor entry-level operators and coordinators
- » Document operational data and prepare reports for regulatory compliance

EXPERIENCED

8+ years

- » Oversee operations across multiple process units, pipeline systems, or terminal facilities
- » Lead process optimization initiatives to improve throughput, efficiency, and product quality
- » Manage regulatory compliance programs and represent the operation in audits and inspections
- » Coordinate capacity planning and scheduling strategy with commercial and executive teams
- » Supervise and develop operators and scheduling coordinators
- » Lead emergency response, process safety reviews, and incident investigations

What knowledge, skills and abilities will you need to succeed?

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| <ul style="list-style-type: none"> » Basic mechanical aptitude and comfort working in an industrial environment » Ability to read and understand process manuals and standard operating procedures » Ability to work rotating shifts, including nights and weekends » Listen and follow directions from senior operators and supervisors » Willingness to learn and grow through on-the-job experience | <ul style="list-style-type: none"> » Proficiency with process control systems (DCS/SCADA) and instrumentation » Ability to read and interpret process flow diagrams » Strong understanding of petroleum products, their properties, and handling requirements » Effective communication for coordination across operations, logistics, and commercial teams » Ability to diagnose and resolve process or scheduling issues under time pressure » Working knowledge of EPA, OSHA PSM, and DOT compliance requirements | <ul style="list-style-type: none"> » Strong leadership and team management skills » Financial acumen for managing operational budgets and capital improvement projects » Comprehensive knowledge of petroleum refining processes and supply chain logistics » Ability to drive process improvement and change management across large teams » Advanced understanding of federal and state regulatory frameworks (EPA, OSHA, DOT) » Strategic thinking and communication skills for senior stakeholder engagement |
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GET PAID!

Entry Level:

» \$59,790 / year*

As You Gain Seniority:

» \$97,540 / year*

Later in Your Career:

» \$112,920 / year*

*Source: BLS OEWS, Petroleum Pump System Operators, Refinery Operators, and Gaugers (2024). These figures use the 10th, 50th, and 90th percentiles of all workers in the role as a proxy for seniority progression and for consistency with BLS OEWS and the United States Energy & Employment Report. Compensation figures should be used as a guide; actual compensation may vary depending on education, geography, experience, and many other factors.



ENERGY INDUSTRY CAREERS OFFER:

- » Excellent salaries
- » Opportunities for advancement
- » Job growth & stability
- » Professional development and training
- » Great benefits

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