get into energy
WITH THE CENTER FOR ENERGY WORKFORCE DEVELOPMENT

Career Pathway Spotlight

Discover a Career as a Power Plant Operator

Discover your career in energy!

Power Plant Operators run the equipment that keeps electricity flowing across the country — from coal and natural gas plants to combined cycle facilities, biomass plants, and the modernized facilities of tomorrow's grid.

Traditional Steam and Thermal Plants

At coal, oil, and biomass plants across the country, power plant operators run the boilers, turbines, and generators that produce steam-driven electricity. They monitor pressures, temperatures, and flow rates and keep critical equipment running safely around the clock.

Gas Turbine and Combined Cycle Plants

At combined cycle and natural gas plants — the workhorses of today's grid — operators run gas turbines, heat recovery steam generators, and water treatment systems. They start and shut down units, balance loads, and respond to grid dispatch instructions.

Clean Energy and Modernized Operations

At solar thermal, biomass, geothermal, and modernized plants, operators run sophisticated instrumentation, digital control systems, and advanced emissions controls. They keep cleaner, lower-carbon power flowing while meeting tight environmental and reliability standards set by federal and state regulators.

CAREER PATH

Start with:

» A high school diploma or GED

Get Educated:

» A community college or vocational technician program
  - Associate degree in power plant or process technology

Training Programs

» A utility apprenticeship or operator-in-training pathway
  - Utility apprenticeships, manufacturer training, or NCCER curriculum programs
» A military pathway with power generation experience
  - Navy Machinist's Mate or Army Power Generation Specialist

Specialize With:

Certificates or credentials

» National Career Readiness Certificate (NCRC) from ACT
» Energy Industry Fundamentals (EIF) Certificate
» NERC System Operator certifications for senior roles

Knowledge in:

» Steam systems
» Gas turbines
» Combined cycle plants
» Water treatment
» Instrumentation

OCCUPATIONAL SKILLS

» Strong mechanical, electrical, and applied math aptitude
» Sharp attention to detail and safety focus
» Physical stamina for active, on-feet plant work
» Strong problem-solving and methodical troubleshooting skills
» Clear communication on radios, in writing, and across teams
» Comfort with heights, noise, and changing conditions
» Comfort with digital controls and monitoring systems

BENEFITS

These energy industry careers offer:

» Excellent salaries and overtime opportunities
» Strong job growth and long-term stability
» Clear advancement from helper to operations supervisor
» Professional development and ongoing technical training
» Great benefits at unionized and non-union plants

What Might You Do As A Power Plant Operator?

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ENTRY LEVEL
1–4 years

What you will do:

- Assisting operators by reading gauges, meters, and other equipment readings
- Checking valves, pumps, engines, and turbines during daily plant rounds
- Maintaining and operating auxiliary equipment under direct operator supervision daily
- Keeping the work area safe and equipment in good working condition
- Learning plant processes, water and electric systems, and basic AC/DC concepts
- Following lockout/tagout, confined space, and OSHA safety procedures every shift

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

- Listen and follow directions from senior operators and supervisors
- Lift 75 pounds and comfortably climb stairs and ladders
- Comfort with heights, noise, and active plant conditions
- Understanding of applied math, algebra, trigonometry, and geometry
- Eagerness to earn the NCRC and Energy Industry Fundamentals certificates

MID- CAREER
5–8 years

What you will do:

- Independently operating boilers, turbines, and generators to keep equipment running when needed
- Diagnosing problems and managing multiple tasks across complex plant systems
- Preparing detailed reports on unusual incidents, problems, and abnormal operating conditions
- Using AI-assisted monitoring tools to spot trends and predict maintenance needs
- Foreseeing system applications, malfunctions, and downstream effects of plant actions
- Training entry-level helpers and assistant operators on plant systems

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

- Active operator training certifications and plant-specific credentials
- Working knowledge of mechanical principles, gear trains, and heat flow
- Ability to comprehend entire systems and how they function
- Clear communication with crews, dispatchers, and engineers
- Composure during alarms, outages, and emergency plant shutdowns
- Ability to anticipate required future conditions in interacting systems

EXPERIENCED
8+ years

What you will do:

- Determining schedules, work activities, and shift assignments across plant operations teams
- Reviewing team member performance and providing clear, structured developmental feedback
- Inspecting records and log book entries to determine plant efficiency and trends
- Preparing and managing operating and capital budgets across plant units
- Adopting new technology like AI plant analytics, sensors, and digital twins
- Communicating regularly with senior management and coordinating with regulators

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

- Strong leadership and people-management skills for operations teams
- Strategic communication with executives, crews, and regulators
- Understanding of financial management principles and budget oversight
- Proficiency in computer skills for report preparation and analysis
- Ability to assign priority and sequence to complex plant jobs
- Mastery of change management as plants modernize and evolve

GET PAID!

Entry Level:
- $59,930 / year*

As You Gain Seniority:
- $99,670 / year*

Later in Your Career:
- $128,760 / year*

*Source: United States Energy & Employment Report (2025). 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

Scan to view our Job Board