

Nuclear Technicians

SOC: 19-4051 • Career Profile Report

■ Key Facts

\$104,240

Median Salary

6,000

Employment

-8.0%

Growth Rate

■ Requirements & Salary Range

Education: Associate's degree

■ Automation Risk Assessment

Low Risk - 8.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.5/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	6.2/10	Investigative	9.4/10
Artistic	5.6/10	Social	6.4/10
Enterprising	4.8/10	Conventional	6.4/10

■ Top Skills Required

Attention to detail, Communication skills, Critical-thinking skills, Math skills, Mechanical skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Nuclear Technicians are technical science professionals who assist physicists, engineers, and researchers in **operating nuclear reactors, monitoring radiation levels, and conducting nuclear research and testing**. They play a critical role in ensuring nuclear systems operate safely, efficiently, and in compliance with strict regulatory standards. Their work supports energy production, scientific research, and national security.

This career is well suited for individuals who are detail-oriented, technically skilled, and interested in physics, engineering, and safety-critical environments.

What Do Nuclear Technicians Do?

Nuclear technicians support nuclear operations, testing, and monitoring activities.

Common responsibilities include:

- Monitoring radiation levels and reactor conditions
- Operating and maintaining nuclear testing and measurement equipment
- Collecting samples and recording technical data
- Assisting with reactor startups, shutdowns, or experiments
- Ensuring compliance with radiation safety procedures
- Maintaining detailed logs, reports, and technical documentation
- Supporting physicists and engineers during research or inspections

Areas of Work and Specialization

Nuclear technicians may focus on specific operational or research areas:

- Nuclear Power Operations: Supporting reactor monitoring and safety systems.
- Radiation Protection and Health Physics: Measuring and controlling radiation exposure.
- Nuclear Research and Testing: Assisting with experiments and prototype systems.
- Fuel Handling and Materials Testing: Monitoring nuclear fuel and reactor materials.
- Instrumentation and Controls: Maintaining sensors and monitoring equipment.

Skills and Abilities Needed

Nuclear technicians combine technical precision with strict safety awareness.

Core Professional Skills

Personal Qualities That Matter

Education and Training Pathway

Entering this field typically requires specialized technical education:

- Associate Degree (common): Nuclear technology, engineering technology, or applied science
- Bachelor's Degree (optional): Physics, engineering, or related fields for advancement
- On-the-Job Training: Learning facility-specific systems and procedures
- Security Clearance (sometimes required): Especially for government or defense work
- Continuing Education: Required due to evolving safety standards and technology

Where Do Nuclear Technicians Work?

Nuclear technicians are employed in highly regulated technical environments:

- Nuclear Power Plants
- Government Research Laboratories
- Defense and National Security Facilities

- Engineering and Energy Companies
- Universities and Research Institutions

Work may involve shift schedules, secure facilities, and controlled environments.

How Much Do Nuclear Technicians Earn?

Earnings vary by employer, clearance level, and technical responsibility:

- Entry-Level Technicians: Typically earn strong technical-support salaries
- Experienced Nuclear Technicians: Often earn higher pay due to specialization
- Government or Defense Roles: May offer higher compensation and benefits

Compensation frequently includes robust benefits and long-term job stability.

Is This Career Difficult?

This career is technically demanding and responsibility-heavy. Nuclear technicians must follow precise procedures, understand complex systems, and maintain constant attention to safety. The challenge lies in accuracy, compliance, and working in environments where errors can have serious consequences.

Who Should Consider Becoming a Nuclear Technician?

This career may be a strong fit if you:

- Enjoy applied physics and technical systems
- Are highly detail-oriented and safety-focused
- Prefer structured, regulated work environments
- Can handle responsibility and procedural discipline
- Want a stable, specialized technical career

How to Prepare Early

- Take physics, math, and technical science courses
- Develop strong data recording and analytical skills
- Learn basic electronics and instrumentation concepts
- Explore nuclear technology or engineering programs
- Seek internships or technician roles in energy or research facilities

Nuclear technicians ensure some of the world's most powerful technologies operate safely and precisely—supporting energy production, scientific discovery, and national security through disciplined technical expertise and unwavering attention to safety.

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Source: <https://www.bls.gov/ooh/life-physical-and-social-science/nuclear-technicians.htm>