# Nuclear Engineers

SOC: 17-2161 • Career Profile Report

## ■ Key Facts

| $127,520 | 15,400 | -1.0% |
|---|---|---|
| Median Salary | Employment | Growth Rate |

## ■ Requirements & Salary Range

**Education:** Bachelor's degree

## ■ Automation Risk Assessment

**Low Risk** - 17.0% 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

**7.2/10** - Good work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

| | | | |
|---|---|---|---|
| **Realistic** | 8.2/10 | **Investigative** | 8.8/10 |
| **Artistic** | 6.4/10 | **Social** | 5.2/10 |
| **Enterprising** | 5.8/10 | **Conventional** | 6.6/10 |

## ■ Top Skills Required

Analytical skills, Communication skills, Computer skills, Detail oriented, Logical-thinking skills, Math skills, Problem-solving skills

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Nuclear Engineers typically perform the following tasks: • Design or develop nuclear equipment, such as reactor cores, radiation shielding, or associated instrumentation or control mechanisms. • Monitor nuclear facility operations to identify any design, construction, or operation practices that violate safety regulations and laws or could jeopardize safe operations. • Initiate corrective actions or order plant shutdowns in emergency situations. • Examine accidents to obtain data for use in design of preventive measures. • Direct operating or maintenance activities of nuclear power plants to ensure efficiency and conformity to safety standards. • Design or oversee construction or operation of nuclear reactors, power plants, or nuclear fuels reprocessing and reclamation systems. • Direct environmental compliance activities associated with nuclear plant operations or maintenance. • Write operational instructions to be used in nuclear plant operation or nuclear fuel or waste handling and disposal. • Prepare technical reports of findings or recommendations, based on synthesized analyses of test results. • Prepare environmental impact statements, reports, or presentations for regulatory or other agencies. • Develop or contribute to the development of plans to remediate or restore environments affected by nuclear radiation, such as waste disposal sites. • Conduct tests of nuclear fuel behavior and cycles or performance of nuclear machinery and equipment to optimize performance of existing plants. • Design fuel cycle models or processes to reduce the quantity of radioactive waste generated from nuclear activities. • Consult with other scientists to determine parameters of experimentation or suitability of analytical models. • Recommend preventive measures to be taken in the handling of nuclear technology, based on data obtained from operations monitoring or from evaluation of test results. • Discuss construction project proposals with interested parties, such as vendors, contractors, or nuclear facility review boards. • Perform experiments that will provide information about acceptable methods of nuclear material usage, nuclear fuel reclamation, or waste disposal. • Conduct environmental studies on topics such as nuclear power generation, nuclear waste disposal, or nuclear weapon deployment. • Design or direct nuclear research projects to develop, test, modify, or discover new uses for theoretical models. • Keep abreast of developments and changes in the nuclear field by reading technical journals or by independent study and research.