Setting the standard in nuclear reactor research and regulation

NAVAL REACTORS ENGINEER

AMERICA'S NAVY

A GLOBAL FORCE FOR GOOD.™

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Fission. Enriched uranium. Pressurized water reactors (PWRs). Things that may be important in the plot of a cinematic thriller are real-world concerns for Naval Reactors Engineers in America's Navy. They are responsible for researching, designing, maintaining, operating and regulating the nuclear reactors and power plants that drive the most advanced fleet of submarines and aircraft carriers on earth.

If you like to see the fundamentals of theory applied in important ways and want to be part of a core group of technical experts, a career as a Naval Reactors Engineer could be ideal for you. Here, you can fuel a passion for problem solving by defining and redefining the cutting edge of nuclear propulsion, while helping ensure that all personnel associated with Naval Reactors are prepared to work with the technology – safely and efficiently,

JOB DESCRIPTION

From its location at the Navy Yard in Washington, D.C., Naval Reactors (NR) has cradle-to-grave responsibility for all shipboard nuclear power plants, shore-based prototypes and nuclear propulsion support facilities for America's Navy. The wide array of technical areas involved in the Naval Nuclear Propulsion program include:

- Reactor and fluid systems design
- Reactor physics
- Materials development
- Component design, such as steam generators, pumps and valves
- Instrumentation and control of reactor, steam and electric plants
- Testing and quality control
- Shielding
- Chemistry and radiological controls

Working out of NR headquarters, there are approximately 380 engineers who technically manage the various areas of the Naval Nuclear Propulsion program. These are some of the brightest minds the Navy has to offer. Their intelligence, backgrounds and comprehensive training provide them with extensive knowledge of all aspects of nuclear propulsion, as well as the flexibility to move into other technical areas involved in nuclear propulsion work.

THE NAVY NUCLEAR PROPULSION COMMUNITY

They operate and maintain the most formidable fleet of nuclear-powered submarines and aircraft carriers on the planet. They pursue the highest degree of intellectual and personal challenges in the nuclear field. They apply nuclear energy and fundamentals of engineering in ways that not only help to defend our national security but also serve to better our world.

These are the men and women of the Navy Nuclear Propulsion community within America's Navy. Submarine Officers (Nuclear). Surface Warfare Officers (Nuclear). Naval Reactors Engineers. Naval Nuclear Power School Instructors. And Nuclear Operations personnel. Every day, advancing their science through application, collaboration and research. These personnel assume the kind of responsibilities and leadership roles that even their most talented peers wait years to take on.

Think you're up to the challenge of becoming a "Navy Nuke"? Be sure to visit **facebook.com/NavyNuclear** to ask questions. Get answers. And connect with others just like you.

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SPECIFIC RESPONSIBILITIES

All Engineers selected for NR assignment are at the top of their class, making up a workforce of the best and brightest technical experts in the country. Even as junior level Nuclear Officers, Naval Reactors Engineers assume responsibility for key technical work in a variety of state-of-the-art facilities, including:

- Two Department of Energy laboratories
- Two nuclear prototype/training sites
- Nearly 100 nuclear-powered ships and submarines
- Six shipyards
- More than 1,000 firms that support the Naval Reactors program

As a Naval Reactors Engineer in the rapid-paced nuclear propulsion field, you will typically be in charge of several projects at once. Taking the lead in anything from designing nuclear reactors to developing refueling procedures to decommissioning of nuclear propulsion plants. Whatever the specific duties, it's hands-on experience on a level beyond what you'll typically find in the private sector.

TRAINING AND ADVANCEMENT

Upon graduation from college, the formal training process of becoming an Officer in the Naval Nuclear Propulsion program is officially underway. For those pursuing a Naval Reactors Engineer position, the first step is Officer Development School (ODS) – a five-week course in Newport, RI, that provides a comprehensive and intense introduction to the responsibilities of being a Navy Staff Corps Officer.

Upon completion of ODS, newly commissioned Officers move on to receive the advanced training that is at the core of Navy Nuclear Propulsion. Naval Reactors Engineers can expect to spend the next five years overseeing the shipboard nuclear power plants, shore-based prototypes and nuclear propulsion support facilities in the Navy. The advanced training process they undergo prepares them to join some of the best and brightest technical experts in the country.

Naval Reactors Headquarters (NR) – Preliminary Training

Officers have an initial assignment of approximately four to five months receiving preliminary training at the Naval Reactors Headquarters in Washington, D.C. This is followed by approximately two weeks spent gaining a working background at one of the Navy's land-based prototypes in either Charleston, SC, or Albany, NY.

Naval Reactors Training Program (NRTP)

The next step involves the six-month process of earning a postgraduate-level education in nuclear engineering through the Bettis Reactor Engineering School at the Bettis Atomic Power Laboratory in Pittsburgh, PA.

Naval Reactors Headquarters (NR) – Staff Assignment

Following Naval Reactors Training, Naval Reactors Engineers are assigned a Nuclear Engineer position with the group responsible for managing all technical aspects of the Naval Nuclear Propulsion program – planning, approving and confirming the design, operation and maintenance of nearly 100 nuclear reactors. Engineers start in a junior role under a supervisor and rapidly advance to take on increasing responsibilities.

WORK ENVIRONMENT

Like the nuclear propulsion field itself, the working environment at Naval Reactors is both challenging and rewarding. Preliminary training and eventual staff assignments center around the NR Headquarters in D.C. – where you'll assume key responsibilities and have the chance to collaborate with the ultimate think tank of nuclear engineers. The process leading up to that will take you from earning a post-graduate level education in academic settings to training on prototype units.

Beyond that, you may travel to any of the facilities involved in the program – including site visits to the nuclear-powered vessels – to observe and inspect operations firsthand. The opportunity to work among industry leaders, in a primarily civilian-like environment, without having to wear a uniform every day can be appealing to the professionals in this community. Far more satisfying is the relevance of the work that goes on here, in and out of uniform, and the kind of unrivaled experience it offers.

Whatever your duties, wherever they take you, it's important to note that much of the work is highly classified and demands the utmost discretion.

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EDUCATION OPPORTUNITIES

For qualifying college graduates, Navy Nuclear Propulsion is a door leading to industry leadership and lifelong learning. Groundbreaking research and high-level civilian collaborations. Work that extends far beyond the military to impact the world at large.

For current undergraduate students who meet the prerequisite background, especially those pursuing preferred majors such as mathematics, engineering, physics or chemistry, there's all of the above to look forward to – plus the chance to get paid while finishing school.

If accepted into the Nuclear Propulsion Officer Candidate (NUPOC) program as an aspiring Naval Reactors Engineer, you can:

- Receive salary and benefits worth potentially over $100,000* and start receiving this funding up to 18 months prior to college graduation
- Enjoy military health-care benefits while you are a student in the program
- Do it all without having to drill or wear a uniform while attending school

And once out of school, you'll have a position waiting as a respected professional and Officer affiliated with one of the most accomplished nuclear programs on earth. Following the Naval Reactors Engineer path to an advanced education and accelerated hands-on experience like nowhere else.

*This includes a monthly salary and housing allowance. Amount varies based on school location.

QUALIFICATIONS

Because of the exclusive nature of the NUPOC program and the magnitude of the responsibilities members will take on from a young age, requirements to become a candidate are comprehensive – and competition for acceptance is great.

The NUPOC program is open to both men and women. The following basic qualification criteria apply.

Age and Health

To be an eligible candidate, you must:

- Be a U.S. citizen
- Be at least 19 years of age and less than 29 years of age at the time of commissioning – waivers up to age 35 may be available for Naval Reactors Engineers
- Meet the physical standards of the Navy

Education

Candidates must be graduates or students of an accredited college or university in the United States or in a United States territory pursuing a BS or MS (majoring in mathematics, engineering, physics, chemistry or other technical areas). Those still in school may apply as early as their junior year of college and must have:

- Completed one academic year of calculus
- Completed one academic year of calculus-based physics
- A competitive GPA and a minimum grade of "B" in all technical courses

AFTER THE NAVY

What consistently sets those with experience in the Nuclear Navy apart is focused intellect with the ability to think outside the box. Unrelenting passion to answer the questions others find incomprehensible. And demonstrated leadership – whatever the challenge, whatever form it takes.

America's Navy accelerates the development of those with intelligence, character and motivation and channels all that into real-world applications. Skills are nurtured. Creative problem solving is encouraged. Opportunities to grow and control the path your career takes are readily available. Whether it's continuing education, world-class facilities or professional funding, the infrastructure is already in place.

After fulfilling an initial commitment of four to five years, you could use your invaluable experience to pursue esteemed leadership, research, teaching and advisory positions in the Navy. Or you could go on to pursue any of a multitude of possibilities that await former Nuclear Officers in the civilian world.

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QUALIFICATIONS (CONT.)

NUPOC Interview

All students who apply to the NUPOC program go through a rigorous screening process and are then selected for a personal interview with the Director of Naval Reactors in Washington, D.C.

The first part of the interview process focuses on technical questions from calculus, physics and other technical courses. The majority of the questions are from calculus and physics, and you may be asked questions from other topics in your major. This part of the interview process typically lasts 30–40 minutes and contains two to four major questions per interview.

The second part of the interview process involves meeting with the Admiral who serves as the Director of the Naval Nuclear Propulsion program. During this interview, the Admiral will review your transcripts and the evaluations from your technical interviews and assess your communication skills, interests and motivation for the program. The Admiral personally selects all prospective Nuclear Officers.

VIP Tour

If you're a qualified Nuclear Propulsion Officer candidate, the Navy offers a two-day VIP trip that allows you to immerse yourself in this world. Tour the flight deck of an aircraft carrier, or walk through the torpedo room of a submarine. Interact with current and prospective Officers and ask questions. Learn about the rich history of the Navy and its nuclear program. This is a chance to learn firsthand what it may be like to launch your future as a Nuclear Officer in the Navy.

READY TO TAKE THE NEXT STEPS?

Once you're inspired, better informed and seriously interested, here's how to proceed:

1. TALK TO YOUR RECRUITER

- Ask questions and review your qualifications
- Talk about the Naval Reactors Engineer position and any other focus areas available within Navy Nuclear Propulsion that you may be interested in
- **If you're a student:** Discuss the generous financial support available through the NUPOC program – or through other potential education programs such as NROTC
- **If you're a college graduate/professional:** Discuss how to become a Nuclear Officer by way of Direct Appointment

2. APPLY FOR THE POSITION

- Download the **NUPOC Officer Application Checklist** from navy.com to learn all about the forms, information and documents you will need to apply
- Get yourself prepared by downloading **Navy Recruiting Command's NUPOC Study Guide** from navy.com – where you can also link to other relevant study materials
- Be prepared to provide personal information that includes birth certificate, social security card, academic transcripts, professional references (if applicable) and medical history
- Be prepared to undergo a rigorous screening and interview process

3. BEGIN YOUR TRAINING

- **Students:** Finish your college degree before beginning the training path that leads to becoming a Nuclear Officer
- **Graduates/Professionals:** Begin your formal nuclear training process, starting with leadership training through Officer Candidate School (OCS) or Officer Development School (ODS) – depending upon your nuclear focus area

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